

**THE
SKEPTIC
ZONE
PODCAST**

www.skepticzone.tv

1
00:00:22,110 --> 00:00:09,080
welcome to the skeptic zone the podcast

2
00:00:29,320 --> 00:00:24,970
hello and welcome to the skeptic zone

3
00:00:32,080 --> 00:00:29,330
episode number 411 for the fourth I've

4
00:00:34,540 --> 00:00:32,090
September 2016 Richard Saunders here

5
00:00:38,590 --> 00:00:34,550
with you from Sydney Australia and for

6
00:00:40,900 --> 00:00:38,600
those people who care it's a nice sort

7
00:00:45,040 --> 00:00:40,910
of pleasant day the sun is out it's a

8
00:00:47,979 --> 00:00:45,050
little bit warm but that's okay and lots

9
00:00:50,799 --> 00:00:47,989
of people out day in the city enjoying

10
00:00:52,810 --> 00:00:50,809
the warm weather coming up on this

11
00:00:55,930 --> 00:00:52,820
week's episode we chat to an old friend

12
00:00:58,810 --> 00:00:55,940
of a skeptic zone doctor Angie matki she

13
00:01:00,910 --> 00:00:58,820

is an emergency physician in the United

14

00:01:03,579 --> 00:01:00,920

States she sort of gets posted around

15

00:01:08,410 --> 00:01:03,589

and does night shifts around the place

16

00:01:10,870 --> 00:01:08,420

she is currently at dragoncon the

17

00:01:14,380 --> 00:01:10,880

wonderful dragoncon in a bland to

18

00:01:17,230 --> 00:01:14,390

georgia the place in 2008 where the

19

00:01:20,260 --> 00:01:17,240

skeptic zone was launched now luckily

20

00:01:22,390 --> 00:01:20,270

for us Angie gave a talk at DragonCon at

21

00:01:26,530 --> 00:01:22,400

the skeptic track hello to Derek Colin

22

00:01:30,520 --> 00:01:26,540

dunno who runs that and even luckier she

23

00:01:33,039 --> 00:01:30,530

had it live streamed her talk was all

24

00:01:35,109 --> 00:01:33,049

about alternative medicine and it was

25

00:01:37,959 --> 00:01:35,119

quite a tour de force really because she

26

00:01:39,880 --> 00:01:37,969

managed to cover and I made a list all

27

00:01:41,620 --> 00:01:39,890

sorts of things from vitalism to

28

00:01:44,800 --> 00:01:41,630

acupuncture to naturopathy to

29

00:01:47,230 --> 00:01:44,810

chiropractic in her talk and then had

30

00:01:48,819 --> 00:01:47,240

Q&A from the audience anyway we'll be

31

00:01:51,609 --> 00:01:48,829

catching up with Angie in just a moment

32

00:01:54,520 --> 00:01:51,619

as she dashes around dragoncon it's very

33

00:01:57,490 --> 00:01:54,530

late at night and she's going to fill us

34

00:02:00,849 --> 00:01:57,500

in on her talk and the goings on at this

35

00:02:03,880 --> 00:02:00,859

wonderful science fiction and fantasy

36

00:02:06,429 --> 00:02:03,890

convention but importantly for skeptics

37

00:02:08,050 --> 00:02:06,439

there is a strong skeptical what they

38

00:02:09,580 --> 00:02:08,060

call the skeptic track there and a

39

00:02:10,779 --> 00:02:09,590

science track and I think an astronomy

40

00:02:13,450 --> 00:02:10,789

track all sorts of good science

41

00:02:15,790 --> 00:02:13,460

happening in Atlanta Georgia following

42

00:02:18,010 --> 00:02:15,800

that Maynard spooky action once again

43

00:02:19,630 --> 00:02:18,020

back at the Australian Museum Maynard's

44

00:02:23,860 --> 00:02:19,640

going to be chatting to Rachel Robinson

45

00:02:27,070 --> 00:02:23,870

who was involved in demonstrating robots

46

00:02:29,680 --> 00:02:27,080

little sort of running around the floor

47

00:02:32,110 --> 00:02:29,690

type robot sort of like bb-8 from star

48

00:02:33,790 --> 00:02:32,120

wars that we came across as we were

49

00:02:34,990 --> 00:02:33,800

there to perform the mystery

50

00:02:37,060 --> 00:02:35,000

investigators show

51
00:02:40,510 --> 00:02:37,070
a fun little interesting interview all

52
00:02:43,000 --> 00:02:40,520
about robots following that is the raw

53
00:02:44,470 --> 00:02:43,010
skeptic report with Heidi Robinson

54
00:02:47,050 --> 00:02:44,480
heidi's going to be talking to michelle

55
00:02:50,500 --> 00:02:47,060
franklin from darwin skeptics who came

56
00:02:53,260 --> 00:02:50,510
down to visit Brisbane recently to visit

57
00:02:54,730 --> 00:02:53,270
the or attend and speak at the Brisbane

58
00:02:58,660 --> 00:02:54,740
skeptic app now she's going to be

59
00:03:01,980 --> 00:02:58,670
talking all about weeds weeds and

60
00:03:05,050 --> 00:03:01,990
finding natural remedies to

61
00:03:07,360 --> 00:03:05,060
environmental predators interesting

62
00:03:09,400 --> 00:03:07,370
science going on with Michelle Franklin

63
00:03:11,440 --> 00:03:09,410

and around off the showroom may not

64

00:03:14,949 --> 00:03:11,450

heads back to skeptics in the pub here

65

00:03:19,330 --> 00:03:14,959

in Sydney and ask the big question what

66

00:03:22,780 --> 00:03:19,340

do pub goers think quantum is what does

67

00:03:25,060 --> 00:03:22,790

quantum mean how can it be used what's

68

00:03:29,320 --> 00:03:25,070

the science behind it how is it misused

69

00:03:30,699 --> 00:03:29,330

or used in advertising do you know if I

70

00:03:32,350 --> 00:03:30,709

was to come to you on the street and say

71

00:03:34,360 --> 00:03:32,360

hello Richard Saunders here from

72

00:03:37,540 --> 00:03:34,370

skeptics and podcast what do you think

73

00:03:39,640 --> 00:03:37,550

quantum means you might be struggling

74

00:03:41,590 --> 00:03:39,650

for an answer lots of people think it

75

00:03:44,740 --> 00:03:41,600

means one thing especially the woo crowd

76
00:03:47,979 --> 00:03:44,750
especially those flogging pseudoscience

77
00:03:48,880 --> 00:03:47,989
love to use the word quantum anyway

78
00:03:50,620 --> 00:03:48,890
we're going to find out what people

79
00:03:52,990 --> 00:03:50,630
going to skeptics in the pub think and

80
00:03:54,430 --> 00:03:53,000
then may not we'll chat to Ian Bryce the

81
00:03:57,220 --> 00:03:54,440
chief investigator of Australian

82
00:04:00,400 --> 00:03:57,230
skeptics who was there to give a talk

83
00:04:03,039 --> 00:04:00,410
about what quantum is and quantum

84
00:04:04,539 --> 00:04:03,049
energies and all this sort of thing now

85
00:04:07,210 --> 00:04:04,549
just before we get stuck into this

86
00:04:13,309 --> 00:04:07,220
episode here this nice music coming up

87
00:04:18,240 --> 00:04:16,439
that's just delightful that is the theme

88
00:04:20,640 --> 00:04:18,250

to a new podcast I'd love to tell you

89

00:04:24,749 --> 00:04:20,650

about it's called the Blue Castle

90

00:04:26,580 --> 00:04:24,759

podcast and it's all about women in the

91

00:04:28,980 --> 00:04:26,590

inner west area of Sydney being

92

00:04:32,430 --> 00:04:28,990

interviewed about turning their artistic

93

00:04:34,980 --> 00:04:32,440

endeavors and their artistic skill into

94

00:04:38,159 --> 00:04:34,990

a business now you may not think that's

95

00:04:40,830 --> 00:04:38,169

a lot to do with skepticism well it

96

00:04:43,890 --> 00:04:40,840

hasn't but this podcast is produced by

97

00:04:46,409 --> 00:04:43,900

my sisters Elizabeth Saunders and

98

00:04:47,760 --> 00:04:46,419

Margaret Adam a very first podcast I'm

99

00:04:50,250 --> 00:04:47,770

very proud of them for putting this

100

00:04:51,719 --> 00:04:50,260

together I gave a little bit of help on

101

00:04:55,290 --> 00:04:51,729

the side but if you'd like to check it

102

00:04:57,750 --> 00:04:55,300

out just visit the Blue Castle dot lips

103

00:05:00,570 --> 00:04:57,760

in calm and i'll put a link in the show

104

00:05:02,850 --> 00:05:00,580

notes congratulations sisters Elizabeth

105

00:05:05,790 --> 00:05:02,860

and Margaret well done and I look

106

00:05:07,560 --> 00:05:05,800

forward to many more episodes it's a

107

00:05:09,600 --> 00:05:07,570

it's quite an interesting podcast it's

108

00:05:11,969 --> 00:05:09,610

all about women turning their artistic

109

00:05:13,560 --> 00:05:11,979

endeavors into a business well that's

110

00:05:17,010 --> 00:05:13,570

enough for me at the moment I'm going to

111

00:05:21,350 --> 00:05:17,020

run downstairs open the cupboard led to

112

00:05:24,689 --> 00:05:21,360

me see this week let me have a think ah

113

00:05:26,760 --> 00:05:24,699

crusty sourdough bread and I don't get

114

00:05:28,260 --> 00:05:26,770

any kickbacks from this the book street

115

00:05:30,390 --> 00:05:28,270

bakery and city they do make good

116

00:05:32,490 --> 00:05:30,400

sourdough bread just like the stuff you

117

00:05:34,620 --> 00:05:32,500

get in san francisco and i think i'll

118

00:05:37,379 --> 00:05:34,630

just have that lightly toasted and

119

00:05:42,719 --> 00:05:37,389

drizzle some honey on top nice and

120

00:06:06,100 --> 00:05:42,729

simple mmm YUM what will i do that i

121

00:06:12,170 --> 00:06:09,860

and joining me now on the line all the

122

00:06:15,080 --> 00:06:12,180

way from Atlanta Georgia where Dragon

123

00:06:16,939 --> 00:06:15,090

Con is underway as we speak it's an old

124

00:06:21,080 --> 00:06:16,949

friend of the skeptic zone dr. Angie

125

00:06:22,640 --> 00:06:21,090

mighty hello I'm Richard hi hi everybody

126

00:06:25,249 --> 00:06:22,650

you sound like you're having a great

127

00:06:27,409 --> 00:06:25,259

time and I know that you're still deeply

128

00:06:29,899 --> 00:06:27,419

entrenched right now in the festivities

129

00:06:31,760 --> 00:06:29,909

and the fun of dragoncon oh my goodness

130

00:06:34,129 --> 00:06:31,770

it's so much fun i really encourage

131

00:06:35,839 --> 00:06:34,139

anyone who can get to the states to come

132

00:06:40,719 --> 00:06:35,849

to dragoncon please please please come

133

00:06:43,790 --> 00:06:40,729

it is fantastic every possible

134

00:06:46,010 --> 00:06:43,800

permutation of pop culture science

135

00:06:47,959 --> 00:06:46,020

fiction fantasy everything you could

136

00:06:52,010 --> 00:06:47,969

possibly imagine is represented here it

137

00:06:54,649 --> 00:06:52,020

is so much fun it is and the skeptic

138

00:06:57,379 --> 00:06:54,659

zone actually was launched at dragoncon

139

00:06:59,570 --> 00:06:57,389

in 2008 the very first episode was

140

00:07:01,850 --> 00:06:59,580

launched from the skeptic track there

141

00:07:03,339 --> 00:07:01,860

and before we get on to what I'd like to

142

00:07:06,320 --> 00:07:03,349

talk to you about was your presentation

143

00:07:08,950 --> 00:07:06,330

about alternative medicine and so forth

144

00:07:11,809 --> 00:07:08,960

how is the skeptic track going this year

145

00:07:15,619 --> 00:07:11,819

it is going magnificently Richard we

146

00:07:18,320 --> 00:07:15,629

have had a very exciting set of

147

00:07:21,499 --> 00:07:18,330

presentations from New presenters we've

148

00:07:24,290 --> 00:07:21,509

had very good response from many

149

00:07:26,360 --> 00:07:24,300

different people it's much bigger it's

150

00:07:29,389 --> 00:07:26,370

taken over much more of the hotel than

151
00:07:32,360 --> 00:07:29,399
before and it's just been spectacular

152
00:07:34,550 --> 00:07:32,370
we've had the best time learned so much

153
00:07:36,200 --> 00:07:34,560
and can't wait for next year and I'm

154
00:07:39,499 --> 00:07:36,210
already only half way through this year

155
00:07:41,929 --> 00:07:39,509
so wow wow that's look I better start

156
00:07:44,209 --> 00:07:41,939
saving right now for 2017 I think well I

157
00:07:47,269 --> 00:07:44,219
noticed on the building it definitely

158
00:07:48,649 --> 00:07:47,279
better come I better there I noticed the

159
00:07:51,079 --> 00:07:48,659
skeptics guide to the universe were

160
00:07:53,119 --> 00:07:51,089
there they are they are here they're

161
00:07:55,969 --> 00:07:53,129
doing a special presentation tonight

162
00:07:58,459 --> 00:07:55,979
that's a paid service I'm not at that

163
00:08:00,030 --> 00:07:58,469

one not this time but tomorrow they'll

164

00:08:01,860 --> 00:08:00,040

be doing a live podcast

165

00:08:03,810 --> 00:08:01,870

I can't wait to see it it's so much fun

166

00:08:06,450 --> 00:08:03,820

to see them interact in person partly

167

00:08:08,040 --> 00:08:06,460

because you get to see their expansion

168

00:08:11,520 --> 00:08:08,050

expressions when someone says something

169

00:08:13,860 --> 00:08:11,530

flooding but also because you get to see

170

00:08:17,160 --> 00:08:13,870

the parts that get edited out which

171

00:08:18,900 --> 00:08:17,170

makes the podcast so much more fun yes

172

00:08:21,300 --> 00:08:18,910

I've been lucky enough to be a guest

173

00:08:23,520 --> 00:08:21,310

rogue from time to time and quite a lot

174

00:08:26,280 --> 00:08:23,530

gets chopped out look at it sounds like

175

00:08:27,660 --> 00:08:26,290

Dragon Con is every bit as wonderful as

176

00:08:29,790 --> 00:08:27,670

I remembered I haven't been there for

177

00:08:31,620 --> 00:08:29,800

some time I think 2010 was the last time

178

00:08:33,810 --> 00:08:31,630

I was there but what I wanted to have a

179

00:08:36,030 --> 00:08:33,820

little chat to you about was that you

180

00:08:37,950 --> 00:08:36,040

did a really a really good thing and I'm

181

00:08:41,010 --> 00:08:37,960

so pleased you did you gave a talk at

182

00:08:43,350 --> 00:08:41,020

DragonCon which is fantastic but you had

183

00:08:46,650 --> 00:08:43,360

somebody sitting in the audience live

184

00:08:48,600 --> 00:08:46,660

streaming your talk to Facebook which

185

00:08:51,300 --> 00:08:48,610

means it's captured there and it's up

186

00:08:52,590 --> 00:08:51,310

now for the world to see and are so

187

00:08:54,150 --> 00:08:52,600

impressed your talk was all about the

188

00:08:57,780 --> 00:08:54,160

different forms of alternative medicine

189

00:09:01,620 --> 00:08:57,790

and you squeezed so much into your talk

190

00:09:05,610 --> 00:09:01,630

so many modalities everything from I

191

00:09:08,520 --> 00:09:05,620

made a list vitalism humors energy

192

00:09:11,640 --> 00:09:08,530

medicine homeopathy chi acupuncture

193

00:09:14,550 --> 00:09:11,650

cupping applied kinesiology naturopathy

194

00:09:17,310 --> 00:09:14,560

Reiki chiropractic and you even

195

00:09:20,040 --> 00:09:17,320

mentioned a quote by carl sagan in there

196

00:09:22,860 --> 00:09:20,050

it was just incredible what I'd like to

197

00:09:25,260 --> 00:09:22,870

argue about the very one of the very

198

00:09:28,520 --> 00:09:25,270

first things you mentioned was vitalism

199

00:09:32,520 --> 00:09:28,530

can you tell me what exactly that means

200

00:09:36,920 --> 00:09:32,530

well um vitalism is sort of a belief

201
00:09:41,640 --> 00:09:36,930
that there is some magical quantity that

202
00:09:45,600 --> 00:09:41,650
separates us from nonliving things so

203
00:09:47,880 --> 00:09:45,610
there is some magical energy that imbues

204
00:09:51,960 --> 00:09:47,890
all of us that's sort of the idea behind

205
00:09:54,780 --> 00:09:51,970
that and it's not a unfortunately it

206
00:09:58,020 --> 00:09:54,790
actually means that people draw false

207
00:10:00,180 --> 00:09:58,030
conclusions when it comes to how to

208
00:10:02,190 --> 00:10:00,190
treat illnesses and what this actual

209
00:10:04,560 --> 00:10:02,200
source of illnesses are it was developed

210
00:10:07,140 --> 00:10:04,570
at a time before there was a true

211
00:10:08,580 --> 00:10:07,150
understanding of germ theory a very good

212
00:10:12,480 --> 00:10:08,590
understanding of biology physics

213
00:10:13,560 --> 00:10:12,490

chemistry and many other of the sciences

214

00:10:15,720 --> 00:10:13,570

that we find

215

00:10:18,930 --> 00:10:15,730

that we need now to practice good

216

00:10:21,930 --> 00:10:18,940

medicine and so a lot of these things

217

00:10:24,570 --> 00:10:21,940

that use the term energy are using it

218

00:10:26,730 --> 00:10:24,580

the term in an erroneous fashion so if

219

00:10:30,420 --> 00:10:26,740

you use the term energy and you can

220

00:10:32,850 --> 00:10:30,430

substitute the capacity to do work then

221

00:10:35,700 --> 00:10:32,860

the term energy actually makes sense but

222

00:10:38,250 --> 00:10:35,710

if you find that people are referring to

223

00:10:41,430 --> 00:10:38,260

energy and sort of this vague nebulous

224

00:10:43,490 --> 00:10:41,440

cloud sense then they don't really

225

00:10:45,960 --> 00:10:43,500

understand what the word means

226

00:10:49,040 --> 00:10:45,970

absolutely right and I think our friend

227

00:10:52,050 --> 00:10:49,050

Brian Dunning makes that point in his

228

00:10:54,210 --> 00:10:52,060

documentary here be dragons absolutely I

229

00:10:57,720 --> 00:10:54,220

stole it from him one hundred percent I

230

00:10:59,370 --> 00:10:57,730

loved his crazy his phrasing of it so

231

00:11:00,960 --> 00:10:59,380

much that I completely stole it from him

232

00:11:03,120 --> 00:11:00,970

and I did give him credit of the lecture

233

00:11:04,920 --> 00:11:03,130

now what else you were talking about

234

00:11:07,290 --> 00:11:04,930

talking about energy you were talking

235

00:11:08,880 --> 00:11:07,300

about various forms of energy medicine

236

00:11:10,920 --> 00:11:08,890

which sort of brings us on to homeopathy

237

00:11:14,460 --> 00:11:10,930

and what I loved about your talk about

238

00:11:16,260 --> 00:11:14,470

homeopathy is that it kept laughter from

239

00:11:20,190 --> 00:11:16,270

the audience which I think was just

240

00:11:24,710 --> 00:11:20,200

pretty apt well it is so laughable um

241

00:11:28,620 --> 00:11:24,720

it's sad to me that that the

242

00:11:31,230 --> 00:11:28,630

misunderstanding of this of this I can't

243

00:11:33,480 --> 00:11:31,240

even characterize it it's it's um I

244

00:11:36,870 --> 00:11:33,490

can't characterize it as anything other

245

00:11:42,090 --> 00:11:36,880

than magical thinking um because it

246

00:11:45,990 --> 00:11:42,100

relies on such unscientific statements

247

00:11:48,750 --> 00:11:46,000

and an understanding of how medicine

248

00:11:50,820 --> 00:11:48,760

actually works it completely violates

249

00:11:52,200 --> 00:11:50,830

physics it completely violates

250

00:11:54,840 --> 00:11:52,210

everything we know about organic

251
00:11:57,990 --> 00:11:54,850
chemistry about chemistry and there is

252
00:11:59,730 --> 00:11:58,000
no possible way to work yeah that

253
00:12:01,770 --> 00:11:59,740
something skeptics have been certainly

254
00:12:03,720 --> 00:12:01,780
saying for a very long time absolutely

255
00:12:06,810 --> 00:12:03,730
it was pleasing and I guess in a way to

256
00:12:08,790 --> 00:12:06,820
see or hear you're getting giggles and

257
00:12:11,040 --> 00:12:08,800
laughter from the audience let me talk

258
00:12:14,340 --> 00:12:11,050
let me take you now to something that it

259
00:12:18,110 --> 00:12:14,350
is a bit of a quandary and has been for

260
00:12:21,180 --> 00:12:18,120
many years why is acupuncture so

261
00:12:24,060 --> 00:12:21,190
accepted in our society is something

262
00:12:25,740 --> 00:12:24,070
that's real um that's a really good

263
00:12:28,230 --> 00:12:25,750

question I wish I knew the answer to

264

00:12:31,920 --> 00:12:28,240

that I think that part of it has to do

265

00:12:36,390 --> 00:12:31,930

with the appeal to this sort of ancient

266

00:12:38,220 --> 00:12:36,400

wisdom there is a sort of a trope in

267

00:12:40,590 --> 00:12:38,230

society where things that are ancient

268

00:12:42,540 --> 00:12:40,600

are necessarily better and unfortunately

269

00:12:43,950 --> 00:12:42,550

that means that things that were

270

00:12:45,570 --> 00:12:43,960

developed before and a good

271

00:12:46,740 --> 00:12:45,580

understanding of biology and chemistry

272

00:12:54,050 --> 00:12:46,750

and physics and all the things I just

273

00:12:58,380 --> 00:12:54,060

mentioned they are venerated as as

274

00:13:01,410 --> 00:12:58,390

ancient wisdom when unfortunately it's

275

00:13:03,000 --> 00:13:01,420

often magical thinking again yeah

276

00:13:04,290 --> 00:13:03,010

there's an old expression how can you

277

00:13:07,200 --> 00:13:04,300

tell ancient wisdom from ancient

278

00:13:10,740 --> 00:13:07,210

stupidity and quite like them hahaha

279

00:13:12,750 --> 00:13:10,750

that's a good friday so i like that you

280

00:13:14,700 --> 00:13:12,760

can use it using it use it in your next

281

00:13:17,790 --> 00:13:14,710

talk peace i'll totally steal that from

282

00:13:19,230 --> 00:13:17,800

you now it was a really good talk and

283

00:13:23,210 --> 00:13:19,240

i'm pleased that you put it put it up

284

00:13:25,740 --> 00:13:23,220

online and it was good too because I

285

00:13:27,930 --> 00:13:25,750

after the talk and which was recorded

286

00:13:29,790 --> 00:13:27,940

was a QA and you had various questions

287

00:13:32,040 --> 00:13:29,800

from the audience and it was interesting

288

00:13:35,340 --> 00:13:32,050

that one of the the people who were was

289

00:13:39,420 --> 00:13:35,350

questioning you was speaking from what

290

00:13:41,010 --> 00:13:39,430

she considers to be her success in when

291

00:13:42,360 --> 00:13:41,020

she had acupuncture done to herself so

292

00:13:45,960 --> 00:13:42,370

she was coming from the point of view of

293

00:13:48,300 --> 00:13:45,970

oh it worked for me so how can you up

294

00:13:50,610 --> 00:13:48,310

there on the stage knock something when

295

00:13:52,500 --> 00:13:50,620

I know it worked for me but I think we

296

00:13:56,400 --> 00:13:52,510

get that quite a lot don't we well we

297

00:13:59,220 --> 00:13:56,410

certainly do and what I started my talk

298

00:14:01,880 --> 00:13:59,230

with was a discussion of the natural

299

00:14:05,610 --> 00:14:01,890

disease process and that means that

300

00:14:07,890 --> 00:14:05,620

problems have waxing and waning course

301
00:14:09,780 --> 00:14:07,900
and many times when we use an

302
00:14:11,220 --> 00:14:09,790
intervention at when the pain is that

303
00:14:14,310 --> 00:14:11,230
it's worse or when the problem is that

304
00:14:17,310 --> 00:14:14,320
it's worse and we see an improvement we

305
00:14:19,260 --> 00:14:17,320
falsely credit the intervention with the

306
00:14:21,720 --> 00:14:19,270
improvement when we either would have

307
00:14:23,760 --> 00:14:21,730
improved already anyway regardless of

308
00:14:24,960 --> 00:14:23,770
the intervention it could be that the

309
00:14:26,820 --> 00:14:24,970
intervention did it or it could have

310
00:14:29,910 --> 00:14:26,830
been something that that happened even

311
00:14:31,829 --> 00:14:29,920
days before you know you know any of the

312
00:14:34,140 --> 00:14:31,839
other treatments they had tried and so

313
00:14:35,699 --> 00:14:34,150

there is a natural course you know

314

00:14:36,310 --> 00:14:35,709

people have good days and bad days and

315

00:14:39,160 --> 00:14:36,320

if you interview

316

00:14:40,720 --> 00:14:39,170

on a bad day that doesn't mean that the

317

00:14:42,700 --> 00:14:40,730

next good day was because of your

318

00:14:44,500 --> 00:14:42,710

intervention and we lose sight of that

319

00:14:46,630 --> 00:14:44,510

because we just aren't programmed to

320

00:14:48,280 --> 00:14:46,640

look for that unfortunately so keeping a

321

00:14:49,960 --> 00:14:48,290

symptom diary is going to be critically

322

00:14:55,720 --> 00:14:49,970

important to help tease out what was a

323

00:14:58,210 --> 00:14:55,730

true response from what was coincidence

324

00:15:00,370 --> 00:14:58,220

or our poor faulty memory because we do

325

00:15:01,750 --> 00:15:00,380

have bad memories about things we think

326

00:15:03,970 --> 00:15:01,760

that there was a relationship and there

327

00:15:05,500 --> 00:15:03,980

wasn't really so she kept saying I don't

328

00:15:07,150 --> 00:15:05,510

remember I don't remember and she

329

00:15:09,130 --> 00:15:07,160

doesn't remember and it's not that she's

330

00:15:11,140 --> 00:15:09,140

lying I don't believe that she's lying

331

00:15:14,230 --> 00:15:11,150

at all I think she may be mistaken about

332

00:15:16,210 --> 00:15:14,240

the timing but if she had kept a symptom

333

00:15:18,100 --> 00:15:16,220

diary it may have been that she noticed

334

00:15:20,890 --> 00:15:18,110

that there was some correlation that she

335

00:15:22,300 --> 00:15:20,900

hadn't noticed before your most probably

336

00:15:24,850 --> 00:15:22,310

right of course and when it comes a

337

00:15:27,130 --> 00:15:24,860

thing like something like acupuncture

338

00:15:29,740 --> 00:15:27,140

then we get to the reasoning so-called

339

00:15:32,290 --> 00:15:29,750

reasoning behind it and which revolves

340

00:15:34,660 --> 00:15:32,300

around these mystical energies and lines

341

00:15:36,550 --> 00:15:34,670

or channels in the body which simply

342

00:15:38,760 --> 00:15:36,560

don't exist it's sort of it falls apart

343

00:15:43,180 --> 00:15:38,770

but yet people who have undergone it and

344

00:15:45,580 --> 00:15:43,190

consider it helped them are there almost

345

00:15:47,620 --> 00:15:45,590

in a different state of mind to the rest

346

00:15:50,560 --> 00:15:47,630

of us I think but in a way it's

347

00:15:53,200 --> 00:15:50,570

understandable I agree and there isn't

348

00:15:55,510 --> 00:15:53,210

any evidence for meridians and as a

349

00:15:57,940 --> 00:15:55,520

physician I would love to have different

350

00:16:00,610 --> 00:15:57,950

or additional treatment options for my

351

00:16:04,090 --> 00:16:00,620

patients but unfortunately using these

352

00:16:07,030 --> 00:16:04,100

treatments may cause additional harm for

353

00:16:09,040 --> 00:16:07,040

many reasons not the least of which that

354

00:16:10,450 --> 00:16:09,050

sticking needles in someone's body when

355

00:16:14,410 --> 00:16:10,460

they don't need to have needles there

356

00:16:15,760 --> 00:16:14,420

can introduce all sorts of trouble you

357

00:16:17,710 --> 00:16:15,770

could collapse a lung you can cause

358

00:16:19,900 --> 00:16:17,720

bleeding you can cause infection it's

359

00:16:21,190 --> 00:16:19,910

you can cause heart infection it's it's

360

00:16:22,800 --> 00:16:21,200

a terrible thing you don't want to

361

00:16:26,140 --> 00:16:22,810

introduce a needle and you don't have to

362

00:16:28,270 --> 00:16:26,150

like I couldn't agree more I think

363

00:16:31,180 --> 00:16:28,280

that's a good movie to have in life I

364

00:16:32,770 --> 00:16:31,190

think very well said we'll look Angie I

365

00:16:34,480 --> 00:16:32,780

won't keep you any more i know that you

366

00:16:36,250 --> 00:16:34,490

sort of dash out of one room and you're

367

00:16:39,160 --> 00:16:36,260

in another to give me a quick interview

368

00:16:41,740 --> 00:16:39,170

i wish i could be a dragon con i miss it

369

00:16:44,200 --> 00:16:41,750

very much partly because of the fun and

370

00:16:46,630 --> 00:16:44,210

it's just wonderful silly fun with

371

00:16:49,260 --> 00:16:46,640

costumes and all sorts of characters and

372

00:16:52,560 --> 00:16:49,270

stars from science fiction and fantasy

373

00:16:54,900 --> 00:16:52,570

it is also a wonderful outreach

374

00:16:57,330 --> 00:16:54,910

opportunity and please please give my

375

00:16:59,400 --> 00:16:57,340

best to Derek Colin dunno who once again

376

00:17:01,500 --> 00:16:59,410

is doing a fantastic job this year oh I

377

00:17:03,240 --> 00:17:01,510

will let him know that you said so and

378

00:17:06,900 --> 00:17:03,250

we miss you desperately so please make

379

00:17:09,030 --> 00:17:06,910

arrangements to come in 2017 I do we

380

00:17:10,590 --> 00:17:09,040

need you to be here and continue the

381

00:17:13,260 --> 00:17:10,600

outreach it really is a wonderful

382

00:17:15,150 --> 00:17:13,270

opportunity I mean just because we have

383

00:17:17,460 --> 00:17:15,160

signs out where people who wouldn't

384

00:17:20,100 --> 00:17:17,470

ordinarily become involved with

385

00:17:22,290 --> 00:17:20,110

skepticism can see them that's how I

386

00:17:26,460 --> 00:17:22,300

became involved in skepticism is by

387

00:17:29,990 --> 00:17:26,470

walking paths kept records the first

388

00:17:35,610 --> 00:17:30,000

time I met you and believe it or not I

389

00:17:38,160 --> 00:17:35,620

from way back from either 2008 or 2009 I

390

00:17:40,320 --> 00:17:38,170

have a photograph I took of the general

391

00:17:45,330 --> 00:17:40,330

audience and skip track and there you

392

00:17:49,640 --> 00:17:45,340

are oh my goodness well we're not going

393

00:17:54,810 --> 00:17:52,470

but thank you so much for having me

394

00:17:57,750 --> 00:17:54,820

again and I can't wait to see y'all in

395

00:18:00,240 --> 00:17:57,760

Australia I'm coming to the Australian

396

00:18:02,520 --> 00:18:00,250

skeptics with my daughter oh well I

397

00:18:04,020 --> 00:18:02,530

can't wait to come to Melbourne the

398

00:18:06,060 --> 00:18:04,030

convention coming up well that'll be a

399

00:18:07,770 --> 00:18:06,070

real treat but Angie look you better get

400

00:18:09,990 --> 00:18:07,780

back to the front of fun and festivities

401
00:18:12,000 --> 00:18:10,000
and thank you for sparing some time to

402
00:18:28,090 --> 00:18:12,010
talk to the scare people thanks so much

403
00:18:33,890 --> 00:18:31,430
hi this is Carrie papi i am ross

404
00:18:37,250 --> 00:18:33,900
Fletcher okay Ross hey we're from a

405
00:18:39,080 --> 00:18:37,260
podcast called oh no roster kerry we

406
00:18:40,820 --> 00:18:39,090
find out what happens when you show up

407
00:18:43,160 --> 00:18:40,830
and ask questions we've hung out with

408
00:18:45,740 --> 00:18:43,170
the Cabalists the Mormons we've gone and

409
00:18:48,170 --> 00:18:45,750
gotten ear candle gone to the Sikhs we

410
00:18:49,790 --> 00:18:48,180
show up so you don't have to so find out

411
00:18:51,890 --> 00:18:49,800
where we're going next we'll even have

412
00:18:54,320 --> 00:18:51,900
special episodes where we have famous

413
00:18:56,300 --> 00:18:54,330

guests like Brian Dalton from mr. deity

414

00:18:58,340 --> 00:18:56,310

you heard that awesome theme music he

415

00:19:02,690 --> 00:18:58,350

wrote that you should come visit us at

416

00:19:05,300 --> 00:19:02,700

oh no podcast calm or facebook.com slash

417

00:19:09,410 --> 00:19:05,310

on rack what the hell's honor a cross Oh

418

00:19:15,500 --> 00:19:09,420

in RAC Oh Oh No Ross and Carrie that's

419

00:19:23,030 --> 00:19:20,700

here's may not spooky action at the

420

00:19:26,240 --> 00:19:23,040

distance

421

00:19:27,710 --> 00:19:26,250

oh look I've got some robots happening

422

00:19:31,100 --> 00:19:27,720

here these are freestanding sort of

423

00:19:33,050 --> 00:19:31,110

rolling block but steroid type Robox and

424

00:19:35,510 --> 00:19:33,060

I know you're not from this company but

425

00:19:36,950 --> 00:19:35,520

what are you doing here today I'm Rachel

426

00:19:40,190 --> 00:19:36,960

robertson from Sphero you've got a

427

00:19:42,290 --> 00:19:40,200

degree yes I have well I didn't ask that

428

00:19:44,300 --> 00:19:42,300

an accusatory way yeah I was just asking

429

00:19:46,040 --> 00:19:44,310

but not from this country oh really I

430

00:19:49,550 --> 00:19:46,050

got one from England can you tell the

431

00:19:51,230 --> 00:19:49,560

dodgy axon Oh Rab so I'm an English one

432

00:19:53,900 --> 00:19:51,240

right so do you ever stay there as long

433

00:19:55,130 --> 00:19:53,910

to study or not although just come in

434

00:19:57,080 --> 00:19:55,140

for the weekend they go I look you're

435

00:19:59,030 --> 00:19:57,090

good to go yeah but if this ride on it

436

00:20:00,410 --> 00:19:59,040

whatever you want to be virology Jill so

437

00:20:02,690 --> 00:20:00,420

what did you get it in by the way I did

438

00:20:04,880 --> 00:20:02,700

I did what incomes and communications so

439

00:20:06,890 --> 00:20:04,890

not science I'm afraid to say but yeah

440

00:20:08,480 --> 00:20:06,900

communications okay well I mean we need

441

00:20:09,830 --> 00:20:08,490

science communicators and I guess that's

442

00:20:12,020 --> 00:20:09,840

a good degree to have that's what you're

443

00:20:13,130 --> 00:20:12,030

gonna do that's it we can join we can

444

00:20:16,160 --> 00:20:13,140

join them together you need

445

00:20:17,840 --> 00:20:16,170

communicators and scientists that unlike

446

00:20:19,490 --> 00:20:17,850

most public relations science is not a

447

00:20:22,850 --> 00:20:19,500

field words often a good idea to make

448

00:20:25,430 --> 00:20:22,860

stuff up in the entertainment field oh

449

00:20:28,130 --> 00:20:25,440

yeah that's a fence it's a massive

450

00:20:31,250 --> 00:20:28,140

advantage in our area well I did I work

451
00:20:33,710 --> 00:20:31,260
for spiro spero produce connected toys

452
00:20:38,780 --> 00:20:33,720
so and they're basically little robots

453
00:20:40,850 --> 00:20:38,790
in balls and cylinders and you can code

454
00:20:43,820 --> 00:20:40,860
and learn you can learn to code and

455
00:20:46,430 --> 00:20:43,830
program using these little balls so

456
00:20:47,930 --> 00:20:46,440
basically you can either drive them but

457
00:20:49,970 --> 00:20:47,940
then you can learn to code and program

458
00:20:52,400 --> 00:20:49,980
them so they've got lots of sensors in

459
00:20:54,260 --> 00:20:52,410
them so they got temperature sensors and

460
00:20:57,080 --> 00:20:54,270
collision sensors you can change the

461
00:20:59,240 --> 00:20:57,090
color and what sort of coding language

462
00:21:01,220 --> 00:20:59,250
do they use they use oval okay

463
00:21:02,420 --> 00:21:01,230

yeah and use that one it's pretty new

464

00:21:05,360 --> 00:21:02,430

because it was actually created by

465

00:21:08,690 --> 00:21:05,370

sparrow so it was created by them in I

466

00:21:10,070 --> 00:21:08,700

think 2012 and then they've used they've

467

00:21:12,740 --> 00:21:10,080

used that to develop all of that product

468

00:21:14,510 --> 00:21:12,750

and how complicated can the code go can

469

00:21:16,610 --> 00:21:14,520

you do really complicated things was it

470

00:21:18,350 --> 00:21:16,620

based for someone that start out with it

471

00:21:20,120 --> 00:21:18,360

goes all the way through so right from

472

00:21:22,670 --> 00:21:20,130

the very beginning so you can do drag

473

00:21:24,500 --> 00:21:22,680

and drop coding for little kids that are

474

00:21:26,300 --> 00:21:24,510

just learning the basics right the way

475

00:21:27,560 --> 00:21:26,310

through to actual full kind of hacking

476

00:21:29,420 --> 00:21:27,570

where you can actually hack into the

477

00:21:31,430 --> 00:21:29,430

software and make it do different things

478

00:21:33,140 --> 00:21:31,440

and you can actually use the oval coated

479

00:21:36,680 --> 00:21:33,150

what's the most complicated thing you've

480

00:21:37,910 --> 00:21:36,690

seen an oval code used for you'd have to

481

00:21:39,890 --> 00:21:37,920

I think you'd probably have to ask the

482

00:21:42,970 --> 00:21:39,900

guys in Boulder that alligator we've

483

00:21:45,860 --> 00:21:42,980

seen we've seen people do things like

484

00:21:48,110 --> 00:21:45,870

planetary so we see them code like full

485

00:21:50,930 --> 00:21:48,120

dance routines so they'll have a like a

486

00:21:52,220 --> 00:21:50,940

hundred different sphero's all operating

487

00:21:54,710 --> 00:21:52,230

at the same time and then all

488

00:21:57,020 --> 00:21:54,720

synchronized to music and things like

489

00:22:00,590 --> 00:21:57,030

that we've seen people build the solar

490

00:22:02,210 --> 00:22:00,600

system using sphero's so they program

491

00:22:06,170 --> 00:22:02,220

them to go at the same at the right

492

00:22:08,960 --> 00:22:06,180

speed around the Sun and so rather than

493

00:22:10,760 --> 00:22:08,970

using a kind of boring styrofoam look

494

00:22:13,280 --> 00:22:10,770

like they can actually show model of it

495

00:22:14,930 --> 00:22:13,290

so we used in lots of different ways

496

00:22:16,310 --> 00:22:14,940

because as we're talking here the robots

497

00:22:17,540 --> 00:22:16,320

are running around our feet and all that

498

00:22:18,950 --> 00:22:17,550

sort of thing what do the kids seem to

499

00:22:21,020 --> 00:22:18,960

be getting most excited about with these

500

00:22:22,670 --> 00:22:21,030

robots that that you know and they're

501
00:22:24,410 --> 00:22:22,680
using the Wi-Fi the bluetooth on the

502
00:22:26,120 --> 00:22:24,420
phone to control its bluetooth so it's

503
00:22:28,220 --> 00:22:26,130
all Bluetooth connected so you just tap

504
00:22:29,420 --> 00:22:28,230
and connect and they're really excited I

505
00:22:31,010 --> 00:22:29,430
think they're just really excited about

506
00:22:32,960 --> 00:22:31,020
the fact that you can drive them and

507
00:22:34,340 --> 00:22:32,970
that they're little robots so we're

508
00:22:35,600 --> 00:22:34,350
getting some kids that are actually

509
00:22:37,610 --> 00:22:35,610
learning to actually do the coding

510
00:22:39,350 --> 00:22:37,620
aspect and then some that are just

511
00:22:40,840 --> 00:22:39,360
really enjoying kind of controlling and

512
00:22:42,610 --> 00:22:40,850
changing the colors and

513
00:22:45,610 --> 00:22:42,620

how the robot move that were you know

514

00:22:46,900 --> 00:22:45,620

works inside so and of course how much

515

00:22:49,360 --> 00:22:46,910

of these little robots they're quite an

516

00:22:50,950 --> 00:22:49,370

expensive or not well so you've got all

517

00:22:53,050 --> 00:22:50,960

the way from their alley which is the

518

00:22:56,470 --> 00:22:53,060

black still under one that tumbles so

519

00:22:58,810 --> 00:22:56,480

that one's 169 99 and then you go

520

00:23:00,670 --> 00:22:58,820

through to the BBA which is to 49 99

521

00:23:02,320 --> 00:23:00,680

which is the Star Wars one but that's

522

00:23:05,530 --> 00:23:02,330

got lots of Star Wars stuff and it goes

523

00:23:06,970 --> 00:23:05,540

with kids how indestructible are there

524

00:23:08,170 --> 00:23:06,980

because kids like to put this sort of

525

00:23:09,670 --> 00:23:08,180

thing through a lot you know they like

526

00:23:12,160 --> 00:23:09,680

to give to the dog and run around here

527

00:23:14,950 --> 00:23:12,170

yeah it's a very good question and lots

528

00:23:15,940 --> 00:23:14,960

of testing has been done there really

529

00:23:17,860 --> 00:23:15,950

indestructible so you could actually

530

00:23:19,150 --> 00:23:17,870

stand your whole body weight on them and

531

00:23:21,340 --> 00:23:19,160

they would break they're made of

532

00:23:23,470 --> 00:23:21,350

polycarbonate and then they've put a UV

533

00:23:24,910 --> 00:23:23,480

coating around them so that they're

534

00:23:26,500 --> 00:23:24,920

really we've actually done tests where

535

00:23:28,210 --> 00:23:26,510

we've stood at the top of a building and

536

00:23:29,800 --> 00:23:28,220

drop them from the top of a building and

537

00:23:30,840 --> 00:23:29,810

they haven't broken the deliberate test

538

00:23:33,100 --> 00:23:30,850

or someone just made a mistake

539

00:23:34,990 --> 00:23:33,110

something's true throughout the window

540

00:23:36,820 --> 00:23:35,000

Manolo yeah i'm looking at them on

541

00:23:40,060 --> 00:23:36,830

thinking is there an aqua version of

542

00:23:42,190 --> 00:23:40,070

these is it this spark the spark sorry

543

00:23:44,350 --> 00:23:42,200

is completely waterproof and actually

544

00:23:46,360 --> 00:23:44,360

floats in water so you can drive it in

545

00:23:51,360 --> 00:23:46,370

water so we've had kids that have

546

00:23:53,770 --> 00:23:51,370

created rafts using you know straws and

547

00:23:55,690 --> 00:23:53,780

bubble pop and things like that and then

548

00:23:58,300 --> 00:23:55,700

they create raft and then they motorized

549

00:23:59,560 --> 00:23:58,310

the raft using the spark okay and what

550

00:24:00,730 --> 00:23:59,570

would be the difference between coding

551

00:24:02,590 --> 00:24:00,740

this kind of thing in using something

552

00:24:04,240 --> 00:24:02,600

like a raspberry pi kind of situation

553

00:24:06,580 --> 00:24:04,250

which is more open source yeah i think

554

00:24:08,680 --> 00:24:06,590

that the nice thing about this this is a

555

00:24:11,470 --> 00:24:08,690

completely sort of shared platform and

556

00:24:14,260 --> 00:24:11,480

it's a really simple straightforward

557

00:24:16,810 --> 00:24:14,270

drag-and-drop I don't know that's

558

00:24:18,040 --> 00:24:16,820

probably its advantages yeah sure well

559

00:24:19,390 --> 00:24:18,050

I'll leave utility because all these

560

00:24:20,710 --> 00:24:19,400

kids are going to play and have a great

561

00:24:21,940 --> 00:24:20,720

afternoon what's been the reaction from

562

00:24:23,320 --> 00:24:21,950

the kids they're pretty keen to get

563

00:24:25,360 --> 00:24:23,330

their hands on this aren't they it's

564

00:24:26,500 --> 00:24:25,370

been absolutely overwhelming we were

565

00:24:28,990 --> 00:24:26,510

just saying we need to come back with

566

00:24:30,850 --> 00:24:29,000

more mMmmm so we've learnt that we need

567

00:24:32,770 --> 00:24:30,860

more to everybody's loved it is that

568

00:24:34,300 --> 00:24:32,780

like four or five and they're right I

569

00:24:35,830 --> 00:24:34,310

know and they've run out of it they've

570

00:24:36,850 --> 00:24:35,840

run out of seemed a bit so you know

571

00:24:38,920 --> 00:24:36,860

we're going to come back with more but

572

00:24:40,390 --> 00:24:38,930

no amazing reactions so really

573

00:24:42,010 --> 00:24:40,400

overwhelming really I have a good time

574

00:24:55,690 --> 00:24:42,020

here this room is enjoy science week

575

00:25:00,440 --> 00:24:58,220

we've just opened the quad ecology

576

00:25:04,040 --> 00:25:00,450

exhibition at Edinburgh Smew ziam of

577

00:25:06,440 --> 00:25:04,050

childhood you can shrink in size see the

578

00:25:09,470 --> 00:25:06,450

amazing cylinders two squares illusion

579

00:25:14,630 --> 00:25:09,480

live watch all your favorite college

580

00:25:16,970 --> 00:25:14,640

Eclipse create your own illusions be

581

00:25:19,820 --> 00:25:16,980

levitated by magician David Copperfield

582

00:25:22,220 --> 00:25:19,830

and lots more we can take the exhibition

583

00:25:24,380 --> 00:25:22,230

anywhere so if you're a museum science

584

00:25:29,540 --> 00:25:24,390

center shopping mall or school get in

585

00:25:43,790 --> 00:25:29,550

touch for more information visit www.a

586

00:25:53,540 --> 00:25:43,800

um it's the raw skeptic report with

587

00:25:56,510 --> 00:25:53,550

Heidi Robinson I'm here with Michelle

588

00:25:59,870 --> 00:25:56,520

Franklin who has been on the skeptic

589

00:26:01,520 --> 00:25:59,880

zone previously in case listeners don't

590

00:26:04,400 --> 00:26:01,530

remember you who are you and why you

591

00:26:06,200 --> 00:26:04,410

here at skeptic at I'm Michelle Franklin

592

00:26:08,960 --> 00:26:06,210

I'm here because they didn't tell me I

593

00:26:11,540 --> 00:26:08,970

couldn't be so I came I live in Darwin

594

00:26:13,910 --> 00:26:11,550

and one of the two regular members of

595

00:26:15,380 --> 00:26:13,920

the Darwin skeptics and I've come down

596

00:26:17,870 --> 00:26:15,390

to visit family and hang out with

597

00:26:20,210 --> 00:26:17,880

skeptics and you just gave a very

598

00:26:23,210 --> 00:26:20,220

interesting talk on your area of

599

00:26:25,430 --> 00:26:23,220

expertise which is biocontrol you're

600

00:26:29,180 --> 00:26:25,440

telling me before that the your actual

601
00:26:32,650 --> 00:26:29,190
job title is weed scientists I just love

602
00:26:35,030 --> 00:26:32,660
that weed scientist it's fabulous so

603
00:26:37,100 --> 00:26:35,040
tell us what what's involved in your

604
00:26:40,520 --> 00:26:37,110
day-to-day work up in the Northern

605
00:26:42,950 --> 00:26:40,530
Territory I can be anything from sitting

606
00:26:45,590 --> 00:26:42,960
at a computer running risk assessments

607
00:26:47,780 --> 00:26:45,600
on potential new weeds trolling the

608
00:26:51,290 --> 00:26:47,790
internet for information and reading

609
00:26:53,720 --> 00:26:51,300
papers to the next day driving out to

610
00:26:55,820 --> 00:26:53,730
remote Billabong's and dropping weevils

611
00:26:57,470 --> 00:26:55,830
in the water and counting caterpillars

612
00:26:59,360 --> 00:26:57,480
that fall out of trees I've actually

613
00:27:01,160 --> 00:26:59,370

spent quite a lot of time just bashing

614

00:27:05,240 --> 00:27:01,170

trees with big sticks and counting what

615

00:27:06,890 --> 00:27:05,250

falls out of them that sounds like a

616

00:27:09,140 --> 00:27:06,900

diverse kind of

617

00:27:11,180 --> 00:27:09,150

and you're also saying that a lot of

618

00:27:12,920 --> 00:27:11,190

your job is knowing how to not get

619

00:27:14,600 --> 00:27:12,930

yourself bogged and if you do get bogged

620

00:27:16,400 --> 00:27:14,610

knowing how to get out of it yeah

621

00:27:19,460 --> 00:27:16,410

there's a few of our locations are a

622

00:27:22,870 --> 00:27:19,470

little bit remote so some of them

623

00:27:25,820 --> 00:27:22,880

involve a few tricks to get to them

624

00:27:27,770 --> 00:27:25,830

there's also quite a few animals that

625

00:27:29,780 --> 00:27:27,780

will eat you on routes so so a big part

626

00:27:33,530 --> 00:27:29,790

of it is learning how not to be eaten in

627

00:27:36,890 --> 00:27:33,540

your general workday yes that would be a

628

00:27:39,410 --> 00:27:36,900

good skill to have now tell us when when

629

00:27:41,930 --> 00:27:39,420

does a weed become a weed when is a weed

630

00:27:45,470 --> 00:27:41,940

classified as a weed and for what reason

631

00:27:48,590 --> 00:27:45,480

so a weed is basically a plant in the

632

00:27:51,380 --> 00:27:48,600

wrong place that is causing a problem so

633

00:27:53,360 --> 00:27:51,390

if there's an exotic plant brought into

634

00:27:54,590 --> 00:27:53,370

Australia plant it in a garden and it

635

00:27:56,750 --> 00:27:54,600

looks pretty and doesn't hurt anybody

636

00:27:58,760 --> 00:27:56,760

that's just an introduced plant where it

637

00:28:01,490 --> 00:27:58,770

becomes a weed is if it causes problems

638

00:28:05,210 --> 00:28:01,500

so the ones that become problems are the

639

00:28:07,310 --> 00:28:05,220

ones that that breed fast the ones that

640

00:28:09,290 --> 00:28:07,320

invade the ones that spread or the ones

641

00:28:11,810 --> 00:28:09,300

that are just difficult to kill so if

642

00:28:14,510 --> 00:28:11,820

they spread fast and are difficult to

643

00:28:17,210 --> 00:28:14,520

get rid of we classify them as weeds and

644

00:28:18,890 --> 00:28:17,220

we set up you know laws that they have

645

00:28:21,290 --> 00:28:18,900

to be controlled and we work on

646

00:28:23,510 --> 00:28:21,300

different ways to control them okay and

647

00:28:26,420 --> 00:28:23,520

in your talk you you talked specifically

648

00:28:29,210 --> 00:28:26,430

about a weed is this the right

649

00:28:31,820 --> 00:28:29,220

pronunciation salvinia so tell us about

650

00:28:33,710 --> 00:28:31,830

your work with salvinia so it's a water

651
00:28:36,140 --> 00:28:33,720
weeds so it grows on the surface of

652
00:28:38,600 --> 00:28:36,150
billabong's it's been managed through

653
00:28:40,850 --> 00:28:38,610
biocontrol for about 30 years now and

654
00:28:43,430 --> 00:28:40,860
there's a bit of a delicate balance

655
00:28:45,320 --> 00:28:43,440
between the number of salvinia plants

656
00:28:47,750 --> 00:28:45,330
and the number of weevils and if you get

657
00:28:49,280 --> 00:28:47,760
too many weevils the salvinia dies off

658
00:28:50,600 --> 00:28:49,290
and then the weevils die off because

659
00:28:52,280 --> 00:28:50,610
they can't live without the cell veneer

660
00:28:54,260 --> 00:28:52,290
so there's there's been a long-term

661
00:28:56,570 --> 00:28:54,270
effort by the Rangers who manage the

662
00:28:59,450 --> 00:28:56,580
Billabong's to reintroduce the weevils

663
00:29:01,160 --> 00:28:59,460

when they disappear and to just keep an

664

00:29:03,020 --> 00:29:01,170

eye on the sylvania levels and make sure

665

00:29:05,680 --> 00:29:03,030

that it's being kept in check by these

666

00:29:07,670 --> 00:29:05,690

weevils so the weevils are the

667

00:29:09,980 --> 00:29:07,680

biocontrol that you're working on at the

668

00:29:11,990 --> 00:29:09,990

moment a lot of your talk was focusing

669

00:29:14,570 --> 00:29:12,000

on the fear that the general public has

670

00:29:16,760 --> 00:29:14,580

around bio control measures can you tell

671

00:29:19,120 --> 00:29:16,770

us a bit more about that so basically

672

00:29:20,910 --> 00:29:19,130

the fear comes from people not knowing

673

00:29:22,800 --> 00:29:20,920

what biocontrol

674

00:29:24,270 --> 00:29:22,810

is and the immediate response when you

675

00:29:27,090 --> 00:29:24,280

hear biocontrol is to think of cane

676

00:29:28,920 --> 00:29:27,100

toads and assume that scientists are

677

00:29:31,620 --> 00:29:28,930

going to introduce something bad and

678

00:29:34,050 --> 00:29:31,630

it's going to destroy the world so most

679

00:29:36,120 --> 00:29:34,060

of our publicity is damage control

680

00:29:38,220 --> 00:29:36,130

explain to people that we're not going

681

00:29:40,050 --> 00:29:38,230

to ruin everything by introducing this

682

00:29:42,210 --> 00:29:40,060

weevil and that we have actually done

683

00:29:44,520 --> 00:29:42,220

the research and it's a safe weevil to

684

00:29:48,690 --> 00:29:44,530

introduce what are some of the

685

00:29:50,610 --> 00:29:48,700

considerations by you and other people

686

00:29:53,790 --> 00:29:50,620

in the field when you are looking at

687

00:29:55,920 --> 00:29:53,800

introducing a form of biocontrol so

688

00:29:59,100 --> 00:29:55,930

there's two basic tests that you need to

689

00:30:02,160 --> 00:29:59,110

run the first one is finding out whether

690

00:30:04,890 --> 00:30:02,170

there the agent is dependent on its host

691

00:30:09,990 --> 00:30:04,900

so you put it in a cage with that

692

00:30:11,640 --> 00:30:10,000

host and see if it can reproduce do a

693

00:30:13,500 --> 00:30:11,650

full life cycle on it and then you put

694

00:30:15,870 --> 00:30:13,510

it in a cage with other plants that are

695

00:30:18,030 --> 00:30:15,880

similar to that host and see if it dies

696

00:30:20,280 --> 00:30:18,040

on those plants and basically if there's

697

00:30:23,130 --> 00:30:20,290

anything else in Australia that can host

698

00:30:25,200 --> 00:30:23,140

this species then it can't be used

699

00:30:27,630 --> 00:30:25,210

because it's capable of surviving

700

00:30:28,920 --> 00:30:27,640

without the weed and then the second

701
00:30:31,230 --> 00:30:28,930
thing that you want to test is the

702
00:30:33,660 --> 00:30:31,240
effect that it might have if it's

703
00:30:35,400 --> 00:30:33,670
already surviving on one host can it

704
00:30:37,350 --> 00:30:35,410
also impact on other things so you'll

705
00:30:40,350 --> 00:30:37,360
put it in a cage with two different

706
00:30:42,750 --> 00:30:40,360
species and see if it will move over and

707
00:30:44,970 --> 00:30:42,760
harm other things so there's a lot of

708
00:30:47,790 --> 00:30:44,980
preparation that goes into these things

709
00:30:50,100 --> 00:30:47,800
before something is just released out

710
00:30:52,230 --> 00:30:50,110
into the wild so to speak yeah there's

711
00:30:54,540 --> 00:30:52,240
many years oh that's all done here in

712
00:30:55,920 --> 00:30:54,550
Brisbane just down the road at the eco

713
00:30:57,690 --> 00:30:55,930

Sciences precinct they've got a big

714

00:31:00,960 --> 00:30:57,700

biocontrol facility there where the

715

00:31:03,420 --> 00:31:00,970

CSIRO does most of that work and they

716

00:31:06,030 --> 00:31:03,430

spend years researching each potential

717

00:31:07,980 --> 00:31:06,040

agent before it's given the go-ahead to

718

00:31:11,130 --> 00:31:07,990

be released and then they send it up to

719

00:31:13,590 --> 00:31:11,140

us and we start distributing and you

720

00:31:17,190 --> 00:31:13,600

were saying that a lot was learned by

721

00:31:19,770 --> 00:31:17,200

the whole cane toad experience and that

722

00:31:22,770 --> 00:31:19,780

that people really shouldn't have have

723

00:31:25,650 --> 00:31:22,780

the fear based on that cane toad

724

00:31:27,330 --> 00:31:25,660

experience yeah so the the fear comes

725

00:31:29,640 --> 00:31:27,340

from the fact that we haven't spoken

726

00:31:32,100 --> 00:31:29,650

enough about biocontrol and it's

727

00:31:33,950 --> 00:31:32,110

basically that the flagship species that

728

00:31:35,899 --> 00:31:33,960

everybody goes to when

729

00:31:37,430 --> 00:31:35,909

I control you think cane toad if you're

730

00:31:39,710 --> 00:31:37,440

lucky maybe you'll think about rabbits

731

00:31:41,990 --> 00:31:39,720

and cactuses but that's pretty much all

732

00:31:43,190 --> 00:31:42,000

that people know about and I mean I'm

733

00:31:44,600 --> 00:31:43,200

working on about seven or eight

734

00:31:47,450 --> 00:31:44,610

different species right now and I've

735

00:31:51,139 --> 00:31:47,460

only been doing this for a year and it's

736

00:31:52,610 --> 00:31:51,149

been going for decades and there's every

737

00:31:55,100 --> 00:31:52,620

couple of years and new species is

738

00:31:56,779 --> 00:31:55,110

introduced and some of them fail which

739

00:31:59,090 --> 00:31:56,789

means that they just die off and nothing

740

00:32:01,519 --> 00:31:59,100

happens and some of them succeed and are

741

00:32:03,620 --> 00:32:01,529

being used like the the weevil in the

742

00:32:05,750 --> 00:32:03,630

sylvania is being used successfully for

743

00:32:08,539 --> 00:32:05,760

the last 30 years and I didn't know

744

00:32:11,090 --> 00:32:08,549

about it until I started this job so we

745

00:32:13,130 --> 00:32:11,100

need to discuss these things publicly

746

00:32:15,049 --> 00:32:13,140

and make it known that biocontrol is is

747

00:32:18,620 --> 00:32:15,059

a common thing that we do and we do it

748

00:32:22,789 --> 00:32:18,630

safely and what were you saying regards

749

00:32:25,970 --> 00:32:22,799

the failure of a biocontrol that the

750

00:32:27,710 --> 00:32:25,980

definition you now use as a failure so a

751

00:32:29,060 --> 00:32:27,720

good example of a failure is a

752

00:32:30,830 --> 00:32:29,070

particular little beetle that was

753

00:32:33,980 --> 00:32:30,840

released a few years ago to control

754

00:32:36,740 --> 00:32:33,990

bellyache bush they did all the research

755

00:32:38,419 --> 00:32:36,750

the the beetle did everything we needed

756

00:32:39,919 --> 00:32:38,429

it to do it would greed on the bellyache

757

00:32:42,049 --> 00:32:39,929

couldn't survive on anything

758

00:32:43,310 --> 00:32:42,059

else it didn't impact anything else we

759

00:32:44,779 --> 00:32:43,320

took the beetle out into the wild

760

00:32:46,399 --> 00:32:44,789

released it every beetle flew in a

761

00:32:48,680 --> 00:32:46,409

different direction and they never bred

762

00:32:50,899 --> 00:32:48,690

in the wild so that's what a biocontrol

763

00:32:52,370 --> 00:32:50,909

failure is and there's just no chance of

764

00:32:54,830 --> 00:32:52,380

it breeding on anything else because all

765

00:32:57,260 --> 00:32:54,840

of those safety protocols were were kept

766

00:33:00,010 --> 00:32:57,270

in check at the beginning to make sure

767

00:33:03,200 --> 00:33:00,020

that there was no risk so there were no

768

00:33:05,360 --> 00:33:03,210

negative impacts it was a failure but

769

00:33:07,159 --> 00:33:05,370

with no negative impacts yeah so the

770

00:33:09,710 --> 00:33:07,169

only negative outcome there is the

771

00:33:11,210 --> 00:33:09,720

wasted time so that's that's the only

772

00:33:13,039 --> 00:33:11,220

drawback is that you've put some

773

00:33:15,440 --> 00:33:13,049

resources into something that didn't

774

00:33:19,070 --> 00:33:15,450

work and finally and this was an

775

00:33:22,130 --> 00:33:19,080

audience question as well will we ever

776
00:33:24,940 --> 00:33:22,140
get rid of the cane toad never going to

777
00:33:29,510 --> 00:33:24,950
happen it's just not not feasible

778
00:33:31,669 --> 00:33:29,520
there's no biocontrol that will ever

779
00:33:33,080 --> 00:33:31,679
wipe anything out so it's possible that

780
00:33:35,930 --> 00:33:33,090
something will come along in the future

781
00:33:37,940 --> 00:33:35,940
that will drastically reduce numbers but

782
00:33:40,909 --> 00:33:37,950
it won't wipe them out it'll just reduce

783
00:33:44,060 --> 00:33:40,919
numbers they're just way too successful

784
00:33:46,159 --> 00:33:44,070
to feasibly think about eradication so

785
00:33:47,480 --> 00:33:46,169
what we need to look at with the cane

786
00:33:49,970 --> 00:33:47,490
toad is

787
00:33:51,700 --> 00:33:49,980
are there any specific impacts that we

788
00:33:54,260 --> 00:33:51,710

can mitigate so is there a particular

789

00:33:57,020 --> 00:33:54,270

area we can protect we can actually

790

00:33:58,460 --> 00:33:57,030

remove tadpoles from one pound or remove

791

00:34:00,950 --> 00:33:58,470

adults from one area and protect

792

00:34:03,290 --> 00:34:00,960

specific areas and we can manage them

793

00:34:04,880 --> 00:34:03,300

and keep their numbers low maybe in the

794

00:34:06,980 --> 00:34:04,890

future we will get some wonderful

795

00:34:09,320 --> 00:34:06,990

biocontrol that will seriously reduce

796

00:34:12,520 --> 00:34:09,330

their numbers but it's not it's not

797

00:34:15,200 --> 00:34:12,530

feasible to think about eradicating them

798

00:34:17,750 --> 00:34:15,210

okay well thank you Michelle it was a

799

00:34:20,359 --> 00:34:17,760

very interesting talk and if people want

800

00:34:21,560 --> 00:34:20,369

to get in touch with you or see more of

801
00:34:25,310 --> 00:34:21,570
what you're doing where can they find

802
00:34:26,419 --> 00:34:25,320
you Darwin skeptics why my little plug

803
00:34:28,399 --> 00:34:26,429
that I like to put at the end of

804
00:34:30,619 --> 00:34:28,409
everything we have a Facebook group it's

805
00:34:33,350 --> 00:34:30,629
just the Darwin skeptics and in the

806
00:34:35,359 --> 00:34:33,360
facebook group sections join we take

807
00:34:36,919 --> 00:34:35,369
anybody as long as you're nice to us and

808
00:34:39,619 --> 00:34:36,929
we take the ones who I mean to us as

809
00:34:41,090 --> 00:34:39,629
well join in the conversation and say

810
00:34:43,790 --> 00:34:41,100
hello we also have an email address

811
00:34:46,220 --> 00:34:43,800
which is just darling skeptics at gmail

812
00:34:49,669 --> 00:34:46,230
com but you're nobody uses email anymore

813
00:34:52,220 --> 00:34:49,679

Facebook's the way that we interact so

814

00:34:54,050 --> 00:34:52,230

if you've got any questions about bio

815

00:34:56,869 --> 00:34:54,060

control measures you know where to get

816

00:34:58,849 --> 00:34:56,879

in touch with Michelle thank you we've

817

00:35:15,450 --> 00:34:58,859

got better go back in and hear the rest

818

00:35:19,660 --> 00:35:18,010

the Australian skeptics national

819

00:35:23,010 --> 00:35:19,670

convention will be held in melbourne

820

00:35:27,400 --> 00:35:23,020

from the 25th to the 27th of november

821

00:35:30,640 --> 00:35:27,410

2016 speakers will include Lawrence

822

00:35:34,120 --> 00:35:30,650

Krauss and sod Ernst Harriet hall

823

00:35:37,360 --> 00:35:34,130

Michael Marshall Mel Thompson Lynn Kelly

824

00:35:40,690 --> 00:35:37,370

ken harvey Lara wood and Deanne Carson

825

00:35:44,170 --> 00:35:40,700

Joe alabaster peterb outage Ross mulch

826

00:35:46,990 --> 00:35:44,180

Emma Miley mouth Vickers and more to be

827

00:35:50,590 --> 00:35:47,000

announced be theme of this year's

828

00:35:52,390 --> 00:35:50,600

conferences good thinking for more

829

00:35:55,840 --> 00:35:52,400

information and to get your tickets and

830

00:36:22,270 --> 00:35:55,850

tickets for the annual dinner visit www

831

00:36:24,310 --> 00:36:22,280

convention skeptics calm got a you let's

832

00:36:27,280 --> 00:36:24,320

take you into a journey into these small

833

00:36:29,440 --> 00:36:27,290

the very small the smallest realms of

834

00:36:31,540 --> 00:36:29,450

the imagination where things don't

835

00:36:33,730 --> 00:36:31,550

happen as they seemingly logically

836

00:36:35,380 --> 00:36:33,740

should that's right we're investigating

837

00:36:36,880 --> 00:36:35,390

the quantum world here at skeptics in

838

00:36:38,410 --> 00:36:36,890

the pub where things get smaller and

839

00:36:40,090 --> 00:36:38,420

smaller and smaller as the night gets

840

00:36:41,200 --> 00:36:40,100

longer and longer or longer and someone

841

00:36:43,690 --> 00:36:41,210

is getting taller and taller and taller

842

00:36:45,870 --> 00:36:43,700

is Richard Saunders I'm glad to hear

843

00:36:48,880 --> 00:36:45,880

that what about this expression we hear

844

00:36:51,160 --> 00:36:48,890

quantum leap is used all the time when

845

00:36:52,570 --> 00:36:51,170

people say so-and-so has made a quantum

846

00:36:54,070 --> 00:36:52,580

leap or this company's about to make a

847

00:36:56,170 --> 00:36:54,080

quantum leap all scientists have made a

848

00:36:59,980 --> 00:36:56,180

quantum leap and what they mean of

849

00:37:02,080 --> 00:36:59,990

course is a gigantic stride forward but

850

00:37:04,360 --> 00:37:02,090

the nitpickers will say well wait a

851

00:37:06,570 --> 00:37:04,370

minute quantum's tiny well i thought

852

00:37:09,550 --> 00:37:06,580

though quantum leap would mean an

853

00:37:11,980 --> 00:37:09,560

unexpectedly so it might have gone in a

854

00:37:14,480 --> 00:37:11,990

direction that wasn't expected and gone

855

00:37:15,740 --> 00:37:14,490

dead that way you see I haven't I

856

00:37:18,500 --> 00:37:15,750

never heard it used like that people

857

00:37:22,480 --> 00:37:18,510

it's always used in press releases or

858

00:37:25,100 --> 00:37:22,490

something like that mean to me a huge

859

00:37:27,140 --> 00:37:25,110

leap and then the nitpickers say well

860

00:37:29,450 --> 00:37:27,150

now it's very tiny but I think in in

861

00:37:32,450 --> 00:37:29,460

common usage when people say a quantum

862

00:37:33,950 --> 00:37:32,460

leap everybody knows what they mean hmm

863

00:37:35,990 --> 00:37:33,960

yeah think about the guy who went on to

864

00:37:38,750 --> 00:37:36,000

play the captain and enterprise that's

865

00:37:41,540 --> 00:37:38,760

right Scott Bakula he made a few quantum

866

00:37:43,010 --> 00:37:41,550

leaps hmm I'm look and I still was not

867

00:37:44,480 --> 00:37:43,020

happy with the final episode of quantum

868

00:37:47,810 --> 00:37:44,490

leap I was not happy with the way

869

00:37:49,280 --> 00:37:47,820

they're finished I know right mmm look

870

00:37:51,050 --> 00:37:49,290

I'm people out there you know you know

871

00:37:52,370 --> 00:37:51,060

if you don't you don't yeah if you don't

872

00:37:54,290 --> 00:37:52,380

if you happen if you haven't seen

873

00:37:56,359 --> 00:37:54,300

quantum leap the whole series it's quite

874

00:38:01,130 --> 00:37:56,369

fun we enjoyed it but the last episode

875

00:38:04,280 --> 00:38:01,140

was sort of like what well it was sort

876

00:38:05,720 --> 00:38:04,290

of a bit like blank 7 you know yeah but

877

00:38:08,090 --> 00:38:05,730

we're here because sir there's going to

878

00:38:11,060 --> 00:38:08,100

be some chatting about quantum in all

879

00:38:13,670 --> 00:38:11,070

aspects from Ian Bryce our guy who is

880

00:38:15,050 --> 00:38:13,680

our resident rocket scientist yeah the

881

00:38:16,430 --> 00:38:15,060

chief investigator of Australian

882

00:38:17,660 --> 00:38:16,440

skeptics he'll be here soon he's giving

883

00:38:21,020 --> 00:38:17,670

a talk tonight here at skeptics in the

884

00:38:23,120 --> 00:38:21,030

pub about quantum energies and what is

885

00:38:26,330 --> 00:38:23,130

quantum and things like that which I'll

886

00:38:28,370 --> 00:38:26,340

enjoy listening to nux some years ago in

887

00:38:31,490 --> 00:38:28,380

fact I was doing some research for dr. H

888

00:38:33,890 --> 00:38:31,500

II a story dr. H he was following up and

889

00:38:36,530 --> 00:38:33,900

she wanted to know all about quantum and

890

00:38:38,120 --> 00:38:36,540

I remembers cramming one afternoon to

891

00:38:40,760 --> 00:38:38,130

training to try to find out as much

892

00:38:43,040 --> 00:38:40,770

about quantum on what it means as I as I

893

00:38:44,810 --> 00:38:43,050

could I don't think he can learn much in

894

00:38:47,000 --> 00:38:44,820

one afternoon but that's the question

895

00:38:49,099 --> 00:38:47,010

we're going to be posing tonight what do

896

00:38:50,450 --> 00:38:49,109

people think quantum is because you hit

897

00:38:51,859 --> 00:38:50,460

being used in all sorts of things of

898

00:38:54,230 --> 00:38:51,869

course you will often hear it used as

899

00:38:56,300 --> 00:38:54,240

part of advertising for something I

900

00:38:58,310 --> 00:38:56,310

think I think even won the race is now

901
00:39:00,560 --> 00:38:58,320
is a quantum razor would you really

902
00:39:01,970 --> 00:39:00,570
thought what so when you shave it shaves

903
00:39:05,990 --> 00:39:01,980
your face and maybe other parts of your

904
00:39:08,390 --> 00:39:06,000
body unexpectedly it's it shaves you

905
00:39:11,859 --> 00:39:08,400
over your face and your counterparts

906
00:39:15,380 --> 00:39:11,869
face another universe at the same time

907
00:39:18,320 --> 00:39:15,390
now that I would pay money for that so

908
00:39:19,940 --> 00:39:18,330
if you wake up clean shaven it means you

909
00:39:22,370 --> 00:39:19,950
in another universe has got their very

910
00:39:24,530 --> 00:39:22,380
own quantum razor and we must remind

911
00:39:27,470 --> 00:39:24,540
people that that's where a part of the

912
00:39:29,450 --> 00:39:27,480
quantum action is watch Einstein

913
00:39:31,370 --> 00:39:29,460

called spooky action at a distance yes

914

00:39:35,210 --> 00:39:31,380

now you and I came up with that name

915

00:39:36,320 --> 00:39:35,220

years ago at over lunch and a pub oh I

916

00:39:37,790 --> 00:39:36,330

just heard it in something and I knew

917

00:39:39,890 --> 00:39:37,800

nothing about it i thought that sounds

918

00:39:41,330 --> 00:39:39,900

good Maynard's spooky action at a

919

00:39:44,900 --> 00:39:41,340

distance that's where we came up with

920

00:39:46,490 --> 00:39:44,910

him we were having lunch with Stephen

921

00:39:47,780 --> 00:39:46,500

Casey the wonder dog oh that's much

922

00:39:49,280 --> 00:39:47,790

Stephen Casey lund dog and we came up

923

00:39:50,870 --> 00:39:49,290

with that but we actually gonna be

924

00:39:52,400 --> 00:39:50,880

asking a few people what they think when

925

00:39:54,080 --> 00:39:52,410

they hear it tonight and in fact perhaps

926

00:39:55,340 --> 00:39:54,090

even when I talk to Ian Bryce he will

927

00:39:58,010 --> 00:39:55,350

actually explain it to the satisfaction

928

00:40:00,109 --> 00:39:58,020

of the listener well he should and if

929

00:40:01,430 --> 00:40:00,119

you folks if you don't come or you

930

00:40:03,170 --> 00:40:01,440

haven't been to a skeptics in the pub

931

00:40:04,849 --> 00:40:03,180

this is that it was just the place you

932

00:40:08,150 --> 00:40:04,859

can ask these sort of questions now it's

933

00:40:09,680 --> 00:40:08,160

it's a early yet people are self just

934

00:40:12,200 --> 00:40:09,690

making their way into the room we have

935

00:40:14,630 --> 00:40:12,210

here and the crown hotel in Sydney and

936

00:40:16,250 --> 00:40:14,640

the tables are ready but we might be

937

00:40:20,380 --> 00:40:16,260

able to ask some people before the talk

938

00:40:24,800 --> 00:40:20,390

what they think quantum means and maybe

939

00:40:26,690 --> 00:40:24,810

we can shed some light on this and I

940

00:40:28,670 --> 00:40:26,700

know Annie and Bryce hook gets here

941

00:40:30,500 --> 00:40:28,680

he'll be after tell us something and a

942

00:40:32,390 --> 00:40:30,510

reminder that next skeptic in the pub

943

00:40:35,270 --> 00:40:32,400

there's going to be a live performance

944

00:40:36,950 --> 00:40:35,280

we're going to do this show live yeah

945

00:40:40,520 --> 00:40:36,960

the skeptics own life that'll be the

946

00:40:41,990 --> 00:40:40,530

first thursday of october october the

947

00:40:44,090 --> 00:40:42,000

sixth here in sydney there'll be a

948

00:40:45,560 --> 00:40:44,100

skeptics in life it won't be as big a do

949

00:40:48,680 --> 00:40:45,570

as last year because last year we had

950

00:40:50,390 --> 00:40:48,690

the whole team and this year no women

951
00:40:51,830 --> 00:40:50,400
are turning up none of the female

952
00:40:53,359 --> 00:40:51,840
members of the cast are turning out

953
00:40:56,420 --> 00:40:53,369
we've asked them all and there are they

954
00:40:58,550 --> 00:40:56,430
interstate or indisposed yes sadly it

955
00:40:59,930 --> 00:40:58,560
looks like that because we've got most

956
00:41:03,410 --> 00:40:59,940
of the people who work on the show in

957
00:41:06,320 --> 00:41:03,420
fact women as it happens but I think

958
00:41:09,370 --> 00:41:06,330
just by bad circumstance and luck and

959
00:41:11,540 --> 00:41:09,380
things they they will be indisposed or

960
00:41:13,160 --> 00:41:11,550
overseas or something crazy like that

961
00:41:15,680 --> 00:41:13,170
boo so we've still got a month maybe we

962
00:41:17,840 --> 00:41:15,690
could we can we can do something but no

963
00:41:19,520 --> 00:41:17,850

they'll be alive skeptic zone I you and

964

00:41:23,180 --> 00:41:19,530

I and I hope Stefan and Iran will be

965

00:41:25,460 --> 00:41:23,190

here will read our pieces but we'll have

966

00:41:27,170 --> 00:41:25,470

not phone in what are they call the pre

967

00:41:29,210 --> 00:41:27,180

records from some some of our other

968

00:41:30,589 --> 00:41:29,220

reporters 0 yeah right now let's see

969

00:41:33,290 --> 00:41:30,599

what's happening tonight it's skeptics

970

00:41:34,910 --> 00:41:33,300

in the pub but a lot some people that

971

00:41:36,380 --> 00:41:34,920

have turned up here fairly early here in

972

00:41:38,930 --> 00:41:36,390

fact she started answering the question

973

00:41:40,309 --> 00:41:38,940

before I variants asked it when you hear

974

00:41:42,349 --> 00:41:40,319

the word quantum what do you mean when

975

00:41:43,970 --> 00:41:42,359

you might hear it in some advertising or

976
00:41:47,059 --> 00:41:43,980
even when it's used generally what do

977
00:41:49,849 --> 00:41:47,069
you think it's assumed to mean something

978
00:41:52,700 --> 00:41:49,859
you really don't understand that's a

979
00:41:53,900 --> 00:41:52,710
very concise and to the point answer how

980
00:41:55,910 --> 00:41:53,910
do you think it's normally used in

981
00:41:58,599 --> 00:41:55,920
normal conversation or in advertising I

982
00:42:01,579 --> 00:41:58,609
would use it as meaning the total of

983
00:42:02,990 --> 00:42:01,589
okay so would use that in a sentence for

984
00:42:08,420 --> 00:42:03,000
the listener to explain to the listener

985
00:42:10,309 --> 00:42:08,430
as in 02 quite the quantum of the number

986
00:42:13,400 --> 00:42:10,319
of cars on the road might be or the

987
00:42:14,930 --> 00:42:13,410
total of the number of cars and and that

988
00:42:21,680 --> 00:42:14,940

is grammatically accurate isn't it

989

00:42:23,270 --> 00:42:21,690

mm-hmm it is yes I think just in time

990

00:42:24,859 --> 00:42:23,280

you but I'm just a man with a beer in

991

00:42:26,599 --> 00:42:24,869

his hand always turns up a skeptics in

992

00:42:28,250 --> 00:42:26,609

the pub it's always a good thing for the

993

00:42:30,230 --> 00:42:28,260

skeptics out and run with Israel it is

994

00:42:31,370 --> 00:42:30,240

bro at all is about priorities you never

995

00:42:33,589 --> 00:42:31,380

know if you don't know what's going on

996

00:42:35,180 --> 00:42:33,599

have a drink now we're asking tonight

997

00:42:36,349 --> 00:42:35,190

when you hear the word quantum which

998

00:42:38,359 --> 00:42:36,359

we're going to be having a chat about

999

00:42:40,220 --> 00:42:38,369

later here it's used in so many ways and

1000

00:42:42,410 --> 00:42:40,230

advertising people kind of sling it

1001
00:42:43,730 --> 00:42:42,420
around like any old word what does it

1002
00:42:44,809 --> 00:42:43,740
mean to you in you or what do you think

1003
00:42:49,849 --> 00:42:44,819
they're trying to get across when they

1004
00:42:53,920 --> 00:42:49,859
use it it's a discrete units of material

1005
00:42:57,950 --> 00:42:53,930
okay it by discrete you mean very small

1006
00:42:59,390 --> 00:42:57,960
both well I think it's a by discreet I

1007
00:43:01,880 --> 00:42:59,400
mean it's not connected to anything else

1008
00:43:05,599 --> 00:43:01,890
okay right yeah so they said it's a

1009
00:43:07,450 --> 00:43:05,609
quantum break through in hair care what

1010
00:43:11,320 --> 00:43:07,460
do they mean what do they mean there

1011
00:43:13,090 --> 00:43:11,330
because I have heard that not God what

1012
00:43:15,010 --> 00:43:13,100
yeah I couldn't really answer like that

1013
00:43:16,840 --> 00:43:15,020

I don't think anyone can I think that's

1014

00:43:19,420 --> 00:43:16,850

exactly why they say it I probably

1015

00:43:21,370 --> 00:43:19,430

reference the quantum physics hmm and

1016

00:43:23,560 --> 00:43:21,380

even they don't understand yeah but the

1017

00:43:24,970 --> 00:43:23,570

probability way it's probably more to do

1018

00:43:28,210 --> 00:43:24,980

with the success that they've had with

1019

00:43:30,520 --> 00:43:28,220

quantum physics in understanding the

1020

00:43:32,350 --> 00:43:30,530

world around us and making quite large

1021

00:43:35,080 --> 00:43:32,360

breakthroughs in science so I would

1022

00:43:36,280 --> 00:43:35,090

argue that probably by quantum break

1023

00:43:37,750 --> 00:43:36,290

through they're actually referring to

1024

00:43:41,470 --> 00:43:37,760

the type of breakthroughs that quantum

1025

00:43:47,230 --> 00:43:41,480

physics has had in the here in their

1026
00:43:49,450 --> 00:43:47,240
research okay thank you when people in

1027
00:43:51,130 --> 00:43:49,460
advertising or anywhere generally invoke

1028
00:43:52,480 --> 00:43:51,140
the word quantum what do you think

1029
00:43:55,990 --> 00:43:52,490
they're trying to get across what do you

1030
00:43:58,780 --> 00:43:56,000
think they mean something trendy

1031
00:44:02,410 --> 00:43:58,790
something it's got Authority it must be

1032
00:44:04,060 --> 00:44:02,420
really good it's it's a step up yeah I

1033
00:44:05,230 --> 00:44:04,070
go that's what they're trying to do what

1034
00:44:06,850 --> 00:44:05,240
do you think they're trying to save you

1035
00:44:08,500 --> 00:44:06,860
and they invoke the word quantum as in a

1036
00:44:10,830 --> 00:44:08,510
great breakthrough in quantum

1037
00:44:14,530 --> 00:44:10,840
hairdressing for example

1038
00:44:18,220 --> 00:44:14,540

quasi-scientific background with latest

1039

00:44:20,920 --> 00:44:18,230

research technology claiming expertise

1040

00:44:22,570 --> 00:44:20,930

that doesn't exist wow are you a

1041

00:44:25,690 --> 00:44:22,580

copywriter in your spare time that's

1042

00:44:27,370 --> 00:44:25,700

good that after that fits in well that's

1043

00:44:28,750 --> 00:44:27,380

a good one now what are you hearing your

1044

00:44:31,300 --> 00:44:28,760

brain when they go hey it's a quantum

1045

00:44:32,770 --> 00:44:31,310

leap my understanding is that that they

1046

00:44:35,500 --> 00:44:32,780

think the quantum means something big

1047

00:44:37,600 --> 00:44:35,510

betting on my understanding is that it

1048

00:44:41,920 --> 00:44:37,610

actually is something not so big at all

1049

00:44:43,450 --> 00:44:41,930

yes and that's that's you know so they

1050

00:44:46,090 --> 00:44:43,460

say something is a quantum leap in this

1051

00:44:47,490 --> 00:44:46,100

thinking it's a it's a big big change or

1052

00:44:49,590 --> 00:44:47,500

a big improvement or

1053

00:44:51,090 --> 00:44:49,600

if you can dance or what everyone is put

1054

00:44:53,790 --> 00:44:51,100

into might be that they're trying to

1055

00:44:55,020 --> 00:44:53,800

promote I've heard michio kaku I think

1056

00:44:56,850 --> 00:44:55,030

your haiku his name is from the

1057

00:44:58,380 --> 00:44:56,860

University in New York this is whenever

1058

00:44:59,850 --> 00:44:58,390

people invoke the word quantum it

1059

00:45:01,440 --> 00:44:59,860

normally means that they have no idea

1060

00:45:03,300 --> 00:45:01,450

what they're invoking I think you had to

1061

00:45:04,320 --> 00:45:03,310

be pretty right and I've just used the

1062

00:45:06,450 --> 00:45:04,330

word quantum and I think that just

1063

00:45:08,370 --> 00:45:06,460

applies to move in an ad so that's okay

1064

00:45:11,640 --> 00:45:08,380

you're making no claim you're making no

1065

00:45:15,450 --> 00:45:11,650

testable claims no no no testable claim

1066

00:45:16,890 --> 00:45:15,460

at all thank you look you gotta say if

1067

00:45:18,390 --> 00:45:16,900

you want if you want to know about

1068

00:45:19,700 --> 00:45:18,400

something you should ask someone who'd

1069

00:45:22,080 --> 00:45:19,710

spend a bit of time at University

1070

00:45:24,240 --> 00:45:22,090

looking at it and we've gotta register

1071

00:45:26,010 --> 00:45:24,250

rocket science here in Bryce how are you

1072

00:45:27,900 --> 00:45:26,020

in oh good evening may not I think

1073

00:45:29,910 --> 00:45:27,910

you've got the scientists crazy here

1074

00:45:31,800 --> 00:45:29,920

tonight to it looks good right yeah look

1075

00:45:34,290 --> 00:45:31,810

it's okay how's your hand there you hurt

1076

00:45:37,260 --> 00:45:34,300

your hand sir yes putting it repairing

1077

00:45:39,450 --> 00:45:37,270

my roof oh so something that scientists

1078

00:45:40,770 --> 00:45:39,460

usually do no no it was it was there an

1079

00:45:41,940 --> 00:45:40,780

issue with tetanus with that did they

1080

00:45:44,160 --> 00:45:41,950

have to give you a shot after that and

1081

00:45:46,470 --> 00:45:44,170

now I didn't worry about that I just got

1082

00:45:48,150 --> 00:45:46,480

on with the job okay now you're talking

1083

00:45:49,980 --> 00:45:48,160

about quantum tonight I've been asking

1084

00:45:52,710 --> 00:45:49,990

people hear what they think when they

1085

00:45:54,630 --> 00:45:52,720

hear the word quantum invoked in just it

1086

00:45:56,040 --> 00:45:54,640

usually to my journalist or in

1087

00:45:57,930 --> 00:45:56,050

advertising and that sort of thing I've

1088

00:45:59,430 --> 00:45:57,940

got a range of answers so what do you

1089

00:46:02,700 --> 00:45:59,440

think they should be saying when they

1090

00:46:05,970 --> 00:46:02,710

say we've got a quantum leap in hair

1091

00:46:08,760 --> 00:46:05,980

care products or dash hounds or cats and

1092

00:46:11,010 --> 00:46:08,770

what what do they mean okay well when my

1093

00:46:14,190 --> 00:46:11,020

lawyer says to me I want to talk about

1094

00:46:17,300 --> 00:46:14,200

the quantum of my fees okay I get very

1095

00:46:20,420 --> 00:46:17,310

worried okay so it means something big

1096

00:46:21,920 --> 00:46:20,430

but if the if someone says something's

1097

00:46:24,890 --> 00:46:21,930

our quantum leap they usually mean a big

1098

00:46:27,320 --> 00:46:24,900

leap but actually a quantum leap in

1099

00:46:29,000 --> 00:46:27,330

physics is rather tiny it's based on

1100

00:46:32,380 --> 00:46:29,010

Planck's constant which is about 10 to

1101
00:46:34,850 --> 00:46:32,390
the minus 34 which is unbelievably tiny

1102
00:46:37,790 --> 00:46:34,860
and as you know I'm a huge fan of the

1103
00:46:39,800 --> 00:46:37,800
concept of Planck time which I think use

1104
00:46:40,970 --> 00:46:39,810
scientists just invented because you

1105
00:46:42,890 --> 00:46:40,980
couldn't figure out how the universe

1106
00:46:44,930 --> 00:46:42,900
came out so quickly because it had to go

1107
00:46:47,330 --> 00:46:44,940
faster than light so we thought Planck

1108
00:46:49,100 --> 00:46:47,340
time that'll get them yes in well that

1109
00:46:52,400 --> 00:46:49,110
there might be something in that too yes

1110
00:46:55,070 --> 00:46:52,410
but this is something unmeasurable about

1111
00:46:57,440 --> 00:46:55,080
events shorter than playing time yes so

1112
00:46:59,840 --> 00:46:57,450
that may be back in the days of the Big

1113
00:47:01,700 --> 00:46:59,850

Bang or the picoseconds of the Big Bang

1114

00:47:03,380 --> 00:47:01,710

that was what rained and so you're

1115

00:47:05,930 --> 00:47:03,390

literally talking to us about quantum

1116

00:47:08,300 --> 00:47:05,940

tonight and but I I actually it's often

1117

00:47:10,730 --> 00:47:08,310

invoked spiritually do we mention Deepak

1118

00:47:12,200 --> 00:47:10,740

Chopra earlier there because i can't

1119

00:47:14,780 --> 00:47:12,210

imagine that all these things going on

1120

00:47:17,660 --> 00:47:14,790

in an unusual way on the micro level

1121

00:47:19,910 --> 00:47:17,670

can't occasionally influence something

1122

00:47:24,080 --> 00:47:19,920

here on the macro level why can't that

1123

00:47:26,180 --> 00:47:24,090

happen well it can happen as we'll see

1124

00:47:29,720 --> 00:47:26,190

tonight lots lots and lots of effects at

1125

00:47:31,700 --> 00:47:29,730

the macro level well at least at the at

1126

00:47:34,370 --> 00:47:31,710

least at the photons of light level

1127

00:47:35,840 --> 00:47:34,380

which are visible to our eyes so we can

1128

00:47:37,370 --> 00:47:35,850

actually see the quantum effects in

1129

00:47:39,560 --> 00:47:37,380

action but it's true that they're very

1130

00:47:42,920 --> 00:47:39,570

small however the energy of a photon is

1131

00:47:44,090 --> 00:47:42,930

very small now could to most people

1132

00:47:46,040 --> 00:47:44,100

probably heard about two photons

1133

00:47:48,530 --> 00:47:46,050

interfering as they go through a Jewess

1134

00:47:51,200 --> 00:47:48,540

lead experiment or two electrons or two

1135

00:47:52,520 --> 00:47:51,210

protons but could to sign us to sing

1136

00:47:55,670 --> 00:47:52,530

whether they could perhaps get two

1137

00:47:58,960 --> 00:47:55,680

viruses to to interfere as they go

1138

00:48:01,850 --> 00:47:58,970

through the slit and maybe then two

1139

00:48:04,100 --> 00:48:01,860

bacteria maybe two fleas and maybe too

1140

00:48:07,400 --> 00:48:04,110

answered maybe two people the problem is

1141

00:48:09,290 --> 00:48:07,410

that you get decoherence quantum effects

1142

00:48:10,940 --> 00:48:09,300

only occur when things are coherent when

1143

00:48:12,890 --> 00:48:10,950

they're all in the same frequency in the

1144

00:48:14,270 --> 00:48:12,900

same phase and once you get up to

1145

00:48:16,370 --> 00:48:14,280

something as big as a virus it's

1146

00:48:19,100 --> 00:48:16,380

impossible to keep them in phase because

1147

00:48:20,750 --> 00:48:19,110

there's too many atoms involved yes yes

1148

00:48:23,780 --> 00:48:20,760

that's right and the wavelength gets too

1149

00:48:25,700 --> 00:48:23,790

short and you can't specify their

1150

00:48:27,810 --> 00:48:25,710

position accurately enough so no one's

1151

00:48:30,150 --> 00:48:27,820

observed anything

1152

00:48:33,000 --> 00:48:30,160

bigger than elementary particles or

1153

00:48:36,270 --> 00:48:33,010

rather composite particles like nuclei I

1154

00:48:38,250 --> 00:48:36,280

believe Justin in a similar physics

1155

00:48:40,530 --> 00:48:38,260

question so since we're talking about

1156

00:48:42,690 --> 00:48:40,540

particles a lot of a light being being

1157

00:48:43,890 --> 00:48:42,700

aligned so so their vibrations are going

1158

00:48:45,930 --> 00:48:43,900

the same through the slit at the same

1159

00:48:48,930 --> 00:48:45,940

time is this any sort of hint at maybe

1160

00:48:51,420 --> 00:48:48,940

string theory maybe businesses that this

1161

00:48:53,970 --> 00:48:51,430

may be given string theory another leg

1162

00:48:57,870 --> 00:48:53,980

of the three stool to be proved string

1163

00:48:58,770 --> 00:48:57,880

theory okay there's a thought I just

1164

00:49:00,690 --> 00:48:58,780

thought we know it's all about

1165

00:49:03,300 --> 00:49:00,700

vibrations they're vibrating at the same

1166

00:49:05,580 --> 00:49:03,310

frequency so they can do it maybe if we

1167

00:49:07,020 --> 00:49:05,590

are vibrating on an even more micro

1168

00:49:09,510 --> 00:49:07,030

level that there's something in that or

1169

00:49:11,280 --> 00:49:09,520

am I just have my serve on well that's

1170

00:49:13,380 --> 00:49:11,290

interesting but I think that's at

1171

00:49:15,960 --> 00:49:13,390

another level because a photon is an

1172

00:49:18,270 --> 00:49:15,970

elementary particle as far as we know

1173

00:49:21,420 --> 00:49:18,280

elementary meaning can't be subdivided

1174

00:49:23,340 --> 00:49:21,430

and all the characteristics of a photo

1175

00:49:27,680 --> 00:49:23,350

on are quite clearly set down by physics

1176

00:49:31,080 --> 00:49:27,690

as it is so string theory is not needed

1177

00:49:32,280 --> 00:49:31,090

to define the photon but but however it

1178

00:49:34,380 --> 00:49:32,290

could well be that there's a deeper

1179

00:49:36,810 --> 00:49:34,390

level to these things and in that case

1180

00:49:39,420 --> 00:49:36,820

it could be strings or it could be super

1181

00:49:42,120 --> 00:49:39,430

symmetry the several things because and

1182

00:49:43,800 --> 00:49:42,130

we can't actually in any way think of

1183

00:49:46,890 --> 00:49:43,810

how it could possibly test string theory

1184

00:49:48,090 --> 00:49:46,900

in any current way the moment going yes

1185

00:49:51,120 --> 00:49:48,100

it doesn't seem to make any predictions

1186

00:49:53,130 --> 00:49:51,130

that would show up in this world and as

1187

00:49:54,870 --> 00:49:53,140

you know scientists works very much

1188

00:49:56,760 --> 00:49:54,880

science works very much by predictions

1189

00:49:59,610 --> 00:49:56,770

personally the theory has to make it

1190

00:50:02,970 --> 00:49:59,620

make predictions and then they have to

1191

00:50:05,370 --> 00:50:02,980

be tested and and succeed or as Papa put

1192

00:50:08,070 --> 00:50:05,380

it it's the lack of failure that makes a

1193

00:50:11,670 --> 00:50:08,080

theory stronger so it has to be testable

1194

00:50:13,920 --> 00:50:11,680

and falsifiable and then if its people

1195

00:50:15,090 --> 00:50:13,930

attempt to falsify it many times and

1196

00:50:17,790 --> 00:50:15,100

they fail to do so that always

1197

00:50:19,110 --> 00:50:17,800

strengthens the theory but so far string

1198

00:50:22,440 --> 00:50:19,120

theory hasn't made any of those

1199

00:50:24,660 --> 00:50:22,450

predictions you've got your talk here

1200

00:50:26,130 --> 00:50:24,670

about quantum for skeptics in the pub

1201
00:50:28,380 --> 00:50:26,140
here what do you think is the one point

1202
00:50:30,030 --> 00:50:28,390
the one slide the one graphic that's

1203
00:50:31,300 --> 00:50:30,040
going to blow this room of people away

1204
00:50:34,000 --> 00:50:31,310
they're going to be walking out

1205
00:50:36,280 --> 00:50:34,010
you go walk in blue my tiny eight brain

1206
00:50:37,720 --> 00:50:36,290
because of what well I think they're

1207
00:50:39,780 --> 00:50:37,730
going to walk down the street after its

1208
00:50:43,780 --> 00:50:39,790
seeing quantum effects all around them

1209
00:50:47,800 --> 00:50:43,790
wow you so you'll become the deepak

1210
00:50:49,360 --> 00:50:47,810
chopra blurry hills not know I deal with

1211
00:50:51,640 --> 00:50:49,370
the real world unfortunately there is a

1212
00:50:53,200 --> 00:50:51,650
difference and if people want to study

1213
00:50:54,790 --> 00:50:53,210

up on this or maybe go to a good website

1214

00:50:55,840 --> 00:50:54,800

that might have some sort of things that

1215

00:50:57,820 --> 00:50:55,850

you're going to talk about in your talk

1216

00:51:01,090 --> 00:50:57,830

any idea where people bun together oh

1217

00:51:02,650 --> 00:51:01,100

well Wikipedia is always good or they

1218

00:51:04,090 --> 00:51:02,660

can come along to one of my talks and

1219

00:51:06,070 --> 00:51:04,100

i'll be happy to entertain them for an

1220

00:51:08,590 --> 00:51:06,080

hour and what phrase should they google

1221

00:51:09,550 --> 00:51:08,600

and what what phrase should they Google

1222

00:51:13,260 --> 00:51:09,560

to find out what you're going to be

1223

00:51:15,820 --> 00:51:13,270

talking about here tonight well it's

1224

00:51:17,410 --> 00:51:15,830

quantum optics would be a good start and

1225

00:51:19,050 --> 00:51:17,420

the quantum world made visible is the

1226

00:51:21,100 --> 00:51:19,060

title of my talk because as I'll show

1227

00:51:22,570 --> 00:51:21,110

with us something as simple as a

1228

00:51:24,100 --> 00:51:22,580

diffraction grating you can see the

1229

00:51:26,860 --> 00:51:24,110

quantum characteristics of many

1230

00:51:29,830 --> 00:51:26,870

different light sources and and what's

1231

00:51:32,590 --> 00:51:29,840

more classical mechanics that's non

1232

00:51:34,060 --> 00:51:32,600

quantum is it a complete loss to explain

1233

00:51:36,610 --> 00:51:34,070

any of these sources that I'll

1234

00:51:40,000 --> 00:51:36,620

demonstrate tonight that's coming from

1235

00:51:42,580 --> 00:51:40,010

man wearing a purple paisley shirt in

1236

00:51:44,020 --> 00:51:42,590

the classic 60s are so well done bro I'd

1237

00:52:00,539 --> 00:51:44,030

say that shirts a quantum leap in

1238

00:52:05,380 --> 00:52:03,130

did you see that UFO sighting that made

1239

00:52:07,089 --> 00:52:05,390

the news what did that latest study

1240

00:52:09,519 --> 00:52:07,099

about alternative treatments really say

1241

00:52:12,460 --> 00:52:09,529

is this photo making the rounds real or

1242

00:52:14,349 --> 00:52:12,470

hoax doubtful news is a unique website

1243

00:52:16,509 --> 00:52:14,359

featuring news about pseudoscience the

1244

00:52:18,210 --> 00:52:16,519

paranormal anomalies and questionable

1245

00:52:21,460 --> 00:52:18,220

claims framed with the skeptical view

1246

00:52:23,920 --> 00:52:21,470

come visit doleful newscom every day for

1247

00:52:27,069 --> 00:52:23,930

news about cryptozoology conspiracies

1248

00:52:29,559 --> 00:52:27,079

shams scams and more follow us on

1249

00:52:31,120 --> 00:52:29,569

twitter at doubtful news critical

1250

00:52:33,400 --> 00:52:31,130

thinking is essential in assessing

1251
00:52:47,780 --> 00:52:33,410
today's news duffel news helps you

1252
00:52:52,170 --> 00:52:50,280
thank you for listening to the skeptic

1253
00:52:53,760 --> 00:52:52,180
zone and thank you to Angie matki all

1254
00:52:58,230 --> 00:52:53,770
the way over there in Atlanta Georgia

1255
00:52:59,970 --> 00:52:58,240
who ran from one room to another to do

1256
00:53:01,859 --> 00:52:59,980
that interview with me a little earlier

1257
00:53:05,070 --> 00:53:01,869
on and I'm sure right now she's running

1258
00:53:07,320 --> 00:53:05,080
around having a great time at dragoncon

1259
00:53:09,089 --> 00:53:07,330
and yes I hope I can be back there next

1260
00:53:12,060 --> 00:53:09,099
year why not it's been a long time since

1261
00:53:14,099 --> 00:53:12,070
I've been there six years in fact that's

1262
00:53:16,589 --> 00:53:14,109
too long it's such it's such a lot of

1263
00:53:20,010 --> 00:53:16,599

fun thank you to Heidi and thank you to

1264

00:53:21,810 --> 00:53:20,020

a maenad of course for your reports this

1265

00:53:26,940 --> 00:53:21,820

week now here's something that might

1266

00:53:29,849 --> 00:53:26,950

interest are fans of Pegasus origami

1267

00:53:32,329 --> 00:53:29,859

Pegasus the flying pig a model I

1268

00:53:34,740 --> 00:53:32,339

invented for James Randi way back in

1269

00:53:37,500 --> 00:53:34,750

2007 goodness me little piggies almost

1270

00:53:42,000 --> 00:53:37,510

10 years old well coming up in October

1271

00:53:45,510 --> 00:53:42,010

on saturday and sunday the 29th and 30th

1272

00:53:48,120 --> 00:53:45,520

of october folding australia 2016

1273

00:53:51,120 --> 00:53:48,130

origami convention and their special

1274

00:53:53,520 --> 00:53:51,130

guests will be a well-known folder from

1275

00:53:55,560 --> 00:53:53,530

melbourne Stephen Casey but I'm

1276

00:53:57,810 --> 00:53:55,570

delighted to say I'll be there and my

1277

00:54:00,150 --> 00:53:57,820

friend Gary Clark we did a video

1278

00:54:03,480 --> 00:54:00,160

together some years ago on origami a DVD

1279

00:54:06,540 --> 00:54:03,490

I'll be there to demonstrate how to fold

1280

00:54:08,820 --> 00:54:06,550

origami Pegasus and make lots of origami

1281

00:54:11,099 --> 00:54:08,830

for everybody I'll have copies of the

1282

00:54:12,839 --> 00:54:11,109

DVD for sale as well as my origami

1283

00:54:16,260 --> 00:54:12,849

jewelry and my friend Gary will be

1284

00:54:19,859 --> 00:54:16,270

demonstrating modular origami so if

1285

00:54:22,230 --> 00:54:19,869

you're a fan of origami and skepticism

1286

00:54:24,720 --> 00:54:22,240

and the flying pig why not check out

1287

00:54:27,750 --> 00:54:24,730

folding Australia 2016 origami

1288

00:54:29,190 --> 00:54:27,760

convention I can google that and I'll

1289

00:54:31,440 --> 00:54:29,200

certainly put a link in the show notes

1290

00:54:35,099 --> 00:54:31,450

for this week's episode hope to see you

1291

00:54:37,740 --> 00:54:35,109

there and if you do drop by um say hello

1292

00:54:39,720 --> 00:54:37,750

and i will fold you an origami pig why

1293

00:54:43,410 --> 00:54:39,730

not and for those people who have been

1294

00:54:46,140 --> 00:54:43,420

writing in asking yes Henry Edward more

1295

00:54:48,690 --> 00:54:46,150

to find in fact they're lying in the in

1296

00:54:50,370 --> 00:54:48,700

a sunbeam right now where are the other

1297

00:54:52,530 --> 00:54:50,380

day on the other side of the office a

1298

00:54:54,859 --> 00:54:52,540

little window and crack of Sun comes in

1299

00:54:58,120 --> 00:54:54,869

sunbeam comes in across the floor and of

1300

00:55:00,609 --> 00:54:58,130

course they live migrate to it

1301

00:55:03,339 --> 00:55:00,619

the Sun moves around all the earth moves

1302

00:55:07,180 --> 00:55:03,349

around you know what I mean the stream

1303

00:55:09,249 --> 00:55:07,190

of the beam of light moves so do they so

1304

00:55:11,499 --> 00:55:09,259

do they they're very smart little cats I

1305

00:55:15,039 --> 00:55:11,509

think but they've yet to really develop

1306

00:55:17,529 --> 00:55:15,049

their meowing sometimes you'll hear

1307

00:55:19,599 --> 00:55:17,539

little now from them but they've yet to

1308

00:55:23,259 --> 00:55:19,609

develop the really strong where's my

1309

00:55:25,210 --> 00:55:23,269

food meow meow I'm sure that's going and

1310

00:55:27,249 --> 00:55:25,220

just before I go don't forget the next

1311

00:55:30,430 --> 00:55:27,259

skeptics in the pub here in Sydney will

1312

00:55:31,809 --> 00:55:30,440

be a special skeptic zone live anyway

1313

00:55:34,029 --> 00:55:31,819

that's next Sydney skeptics in the pub

1314

00:55:37,499 --> 00:55:34,039

the sixth of October here in Sydney at

1315

00:55:40,480 --> 00:55:37,509

the crown hotel more information ww

1316

00:55:42,400 --> 00:55:40,490

skeptics calm today you but for this

1317

00:55:48,940 --> 00:55:42,410

week this is Richard Saunders signing

1318

00:55:50,529 --> 00:55:48,950

off from Sydney Australia you've been

1319

00:55:54,069 --> 00:55:50,539

listening to the skeptics own podcast

1320

00:55:57,190 --> 00:55:54,079

because of our website at wwc a petting

1321

00:56:01,029 --> 00:55:57,200

zoo TV for contacts an archive of all

1322

00:56:03,339 --> 00:56:01,039

episodes since 2008 and our online store

1323

00:56:06,059 --> 00:56:03,349

please support the skeptic zone by

1324

00:56:09,069 --> 00:56:06,069

following us on twitter at skeptic zone

1325

00:56:12,130 --> 00:56:09,079

liking us on facebook and leaving a

1326

00:56:14,980 --> 00:56:12,140

review on iTunes you can also show your

1327

00:56:18,460 --> 00:56:14,990

support by subscribing via paypal for as

1328

00:56:20,799 --> 00:56:18,470

little as 99 cents a week the skeptic

1329

00:56:22,509 --> 00:56:20,809

zone is an independent production the

1330

00:56:24,609 --> 00:56:22,519

views and opinions expressed on the

1331

00:56:27,269 --> 00:56:24,619

skeptic zone and not necessarily those

1332

00:56:30,930 --> 00:56:27,279

of Australian skeptically or any other