

1
00:00:05,929 --> 00:00:13,699
welcome to the skeptic zone the podcast

2
00:00:09,089 --> 00:00:13,699
from Australia for science and reason

3
00:00:23,100 --> 00:00:28,810
well welcome to the skeptic zone where

4
00:00:26,469 --> 00:00:30,429
where r shortly away from the mill a

5
00:00:28,809 --> 00:00:33,009
crowd richard has been signing

6
00:00:30,429 --> 00:00:34,780
autographs and doing things with DNA you

7
00:00:33,009 --> 00:00:37,089
would not believe but here we are there

8
00:00:34,780 --> 00:00:39,520
it sits on as Richard three two one

9
00:00:37,090 --> 00:00:42,220
you're on hello and welcome to the

10
00:00:39,520 --> 00:00:45,100
skeptics are an episode number 190 may

11
00:00:42,219 --> 00:00:48,070
not can you believe it 190 10 more and

12
00:00:45,100 --> 00:00:49,808
we get a fruitcake well there are enough

13
00:00:48,070 --> 00:00:51,520
fruit cakes in the skeptics and I think

14
00:00:49,808 --> 00:00:54,009
may not but an interesting show coming

15
00:00:51,520 --> 00:00:55,870
up this week most of it recorded live

16
00:00:54,009 --> 00:00:57,909
here at what you can hear in the

17
00:00:55,869 --> 00:01:00,009
background Sydney skeptics in the pub at

18
00:00:57,909 --> 00:01:02,140
the coronation hotel first thursday of

19
00:01:00,009 --> 00:01:04,509
every month hmm yes that's right we're

20
00:01:02,140 --> 00:01:06,129
going to kick off with Iran so give the

21
00:01:04,509 --> 00:01:08,319
president of Australian skeptics in our

22
00:01:06,129 --> 00:01:10,689
reporter giving a talk here at skeptics

23
00:01:08,319 --> 00:01:12,609
in the pub all about skepticism and

24
00:01:10,689 --> 00:01:14,319
evidence well they've been on art and I

25
00:01:12,609 --> 00:01:16,209
want to pin him down and talk about

26
00:01:14,319 --> 00:01:18,428
count some counterintuitive things that

27
00:01:16,209 --> 00:01:20,259
goes against his argument you do yeah

28
00:01:18,429 --> 00:01:22,000
I'll probably lose but I don't mind

29

00:01:20,259 --> 00:01:23,618
losing an argument well you're the sort

30
00:01:22,000 --> 00:01:25,539
of fruitcake we need on the skeptic zone

31
00:01:23,618 --> 00:01:27,789
and I think and what else we got on the

32
00:01:25,539 --> 00:01:29,739
show it's you it's your spooky action at

33
00:01:27,789 --> 00:01:31,989
a distance asking questions here at the

34
00:01:29,739 --> 00:01:33,909
pub yes I've been asking people some

35
00:01:31,989 --> 00:01:35,318
monumental questions and I can't

36
00:01:33,909 --> 00:01:36,728
understand any of their answers but you

37
00:01:35,319 --> 00:01:38,740
edit it up and I'm sure it'll be cool

38
00:01:36,728 --> 00:01:40,149
but our listeners understand me now

39
00:01:38,739 --> 00:01:41,530
that's the important thing oh and look

40
00:01:40,149 --> 00:01:42,909
once more I want to throw out to

41
00:01:41,530 --> 00:01:44,319
everyone out there i am going to Tam

42
00:01:42,909 --> 00:01:46,030
thank you to the generosity of the

43
00:01:44,319 --> 00:01:48,399

listeners if you need and if there is

44

00:01:46,030 --> 00:01:50,200

any question you want me to ask of any

45

00:01:48,399 --> 00:01:52,209

particular person email me and let me

46

00:01:50,200 --> 00:01:53,709

know so I can ask it for them that's

47

00:01:52,209 --> 00:01:56,649

right now where should they email you

48

00:01:53,709 --> 00:01:58,659

mean look they can send it through my

49

00:01:56,649 --> 00:02:00,310

website at Maynard com do you or they

50

00:01:58,659 --> 00:02:02,829

can send it to the skeptic zone and if I

51

00:02:00,310 --> 00:02:04,840

find that person I mean look I now be

52

00:02:02,829 --> 00:02:09,098

meeting George rabaah now now be meeting

53

00:02:04,840 --> 00:02:11,020

mr. spa thinker himself the guy whose

54

00:02:09,098 --> 00:02:12,818

brain never fails you mean Dunning

55

00:02:11,020 --> 00:02:14,739

Dunning the mighty Dunning would happen

56

00:02:12,818 --> 00:02:16,659

I'll be talking to him and and maybe

57

00:02:14,739 --> 00:02:18,250

perhaps James around himself and I'm

58
00:02:16,659 --> 00:02:19,449
really high really want to talk to Penn

59
00:02:18,250 --> 00:02:21,280
Jillette I don't know if that's going to

60
00:02:19,449 --> 00:02:23,259
happen but I'm gonna try might happen

61
00:02:21,280 --> 00:02:24,310
we'll see what we can arrange them so if

62
00:02:23,259 --> 00:02:26,199
you've got questions for those people

63
00:02:24,310 --> 00:02:27,489
I'll try and take them and ask them for

64
00:02:26,199 --> 00:02:29,378
you it's the least I can do for the

65
00:02:27,489 --> 00:02:30,908
listeners for helping get me that thank

66
00:02:29,378 --> 00:02:33,340
you again listeners it's because of you

67
00:02:30,908 --> 00:02:35,769
that may not is going to Las Vegas

68
00:02:33,340 --> 00:02:37,780
fantastic work but I think may not i

69
00:02:35,769 --> 00:02:38,920
think we've waffled on long enough and

70
00:02:37,780 --> 00:02:41,680
i'm sure the listeners are out there

71
00:02:38,919 --> 00:02:44,530
they're in there in dec stop waffling on

72
00:02:41,680 --> 00:02:46,090
their in their cars the jogging they're

73
00:02:44,530 --> 00:02:48,340
doing the dishes they're cleaning the

74
00:02:46,090 --> 00:02:50,590
house what else are Alice was doing

75
00:02:48,340 --> 00:02:54,250
they've got the earbuds deep inside

76
00:02:50,590 --> 00:02:56,319
their canals yes and they're dying to

77
00:02:54,250 --> 00:02:58,930
hear the skeptic zones I'm going to go

78
00:02:56,318 --> 00:03:00,848
back to the bar grab another glass of

79
00:02:58,930 --> 00:03:03,450
champagne and we could all enjoy the

80
00:03:00,848 --> 00:03:03,449
skeptic zone

81
00:03:19,219 --> 00:03:29,909
let's all take this with a grain of salt

82
00:03:22,009 --> 00:03:31,590
seas around ticket there's no need to

83
00:03:29,909 --> 00:03:34,650
introduce today's speaker because it's

84
00:03:31,590 --> 00:03:36,590
me so my name is Ron and I'm the

85
00:03:34,650 --> 00:03:38,700
president of Australian skeptics the

86

00:03:36,590 --> 00:03:41,819
subject of my talk today is about

87
00:03:38,699 --> 00:03:43,969
assessing evidence now the reason I

88
00:03:41,818 --> 00:03:45,780
started thinking about that in the past

89
00:03:43,969 --> 00:03:47,340
obviously we're all interested in

90
00:03:45,780 --> 00:03:49,080
evidence that's what skeptics do but the

91
00:03:47,340 --> 00:03:51,810
reason I really started to concentrate

92
00:03:49,080 --> 00:03:53,549
on on that is because I receive google

93
00:03:51,810 --> 00:03:55,650
alerts related to Australian skeptics

94
00:03:53,549 --> 00:03:57,360
and what I noticed was that a lot of the

95
00:03:55,650 --> 00:03:59,969
alert was getting were related to

96
00:03:57,360 --> 00:04:01,230
climate change skeptics who were how we

97
00:03:59,969 --> 00:04:03,030
happen to be Australians and there's

98
00:04:01,229 --> 00:04:04,829
plenty of those there's also been

99
00:04:03,030 --> 00:04:07,049
recently you're probably aware that's

100
00:04:04,830 --> 00:04:10,500

amaryl dory this is the time where

101

00:04:07,049 --> 00:04:12,299

everybody says good yeah exactly she's

102

00:04:10,500 --> 00:04:14,669

opened their website just called

103

00:04:12,299 --> 00:04:18,239

Australian skeptics with a seat calm and

104

00:04:14,669 --> 00:04:21,988

the subject of the title of the website

105

00:04:18,238 --> 00:04:24,569

is the real australian skeptics now such

106

00:04:21,988 --> 00:04:27,269

miss uses of the word skeptic are not

107

00:04:24,569 --> 00:04:28,529

new and part of the problem is that they

108

00:04:27,269 --> 00:04:30,329

can't even be considered to be

109

00:04:28,529 --> 00:04:33,538

completely illegitimate because there is

110

00:04:30,329 --> 00:04:34,918

a there is probably one interpretation

111

00:04:33,538 --> 00:04:36,659

of the word or one definition of the

112

00:04:34,918 --> 00:04:39,899

word that would refer to it as being

113

00:04:36,660 --> 00:04:41,580

simply doubting but when we speak about

114

00:04:39,899 --> 00:04:43,769

skepticism in this room I think we're

115
00:04:41,579 --> 00:04:45,478
all clear that what it really means is

116
00:04:43,769 --> 00:04:48,389
that we look at evidence and we try to

117
00:04:45,478 --> 00:04:50,459
find out what's true and what's not true

118
00:04:48,389 --> 00:04:52,339
that's what we want to know what's the

119
00:04:50,459 --> 00:04:54,959
distinction between true and false and

120
00:04:52,339 --> 00:05:00,389
that distinction between true and false

121
00:04:54,959 --> 00:05:02,189
is made based on evidence so if you care

122
00:05:00,389 --> 00:05:05,149
about if you care about what's true and

123
00:05:02,189 --> 00:05:07,829
false you have to evaluate evidence and

124
00:05:05,149 --> 00:05:10,439
when you when there is something some

125
00:05:07,829 --> 00:05:12,779
claim that attracts enough evidence it

126
00:05:10,439 --> 00:05:14,969
is appropriate for a scientific skeptic

127
00:05:12,779 --> 00:05:16,679
for critical thinker to suspend

128
00:05:14,970 --> 00:05:19,050
skepticism to say I'm not as skeptical

129
00:05:16,680 --> 00:05:20,930
about this anymore and i give this

130
00:05:19,050 --> 00:05:22,840
whatever it is that we're talking about

131
00:05:20,930 --> 00:05:25,030
provisional acceptance

132
00:05:22,839 --> 00:05:27,369
and that's a very important point we

133
00:05:25,029 --> 00:05:28,869
don't say anything is ever one hundred

134
00:05:27,370 --> 00:05:30,009
percent true but we give it provisional

135
00:05:28,870 --> 00:05:32,110
acceptance based on the available

136
00:05:30,009 --> 00:05:33,639
evidence but it has to be supported by

137
00:05:32,110 --> 00:05:36,340
sufficient evidence and good quality

138
00:05:33,639 --> 00:05:38,800
evidence and that's where we come to the

139
00:05:36,339 --> 00:05:42,299
point of saying what is good quality

140
00:05:38,800 --> 00:05:45,040
evidence how do we judge the evidence oh

141
00:05:42,300 --> 00:05:46,629
I'd like to give an example of such a

142
00:05:45,040 --> 00:05:49,810
situation that is to do with climate

143

00:05:46,629 --> 00:05:52,629
change climate change if very calm is a

144
00:05:49,810 --> 00:05:55,120
very complex topic it's not a single

145
00:05:52,629 --> 00:05:57,699
science it's got if you look at what

146
00:05:55,120 --> 00:05:59,110
comply what comprises climate science

147
00:05:57,699 --> 00:06:01,620
you're talking about something that

148
00:05:59,110 --> 00:06:05,410
comprises atmospheric science

149
00:06:01,620 --> 00:06:07,629
oceanography plays glaciology geology

150
00:06:05,410 --> 00:06:08,710
physics chemistry even astronomy is

151
00:06:07,629 --> 00:06:11,490
involved in this and there I probably

152
00:06:08,709 --> 00:06:14,199
left a few ologies out the thing is that

153
00:06:11,490 --> 00:06:16,660
there isn't probably a single person in

154
00:06:14,199 --> 00:06:18,129
the world who knows something about all

155
00:06:16,660 --> 00:06:20,320
of these things enough to properly

156
00:06:18,129 --> 00:06:22,779
evaluate all the evidence and even if

157
00:06:20,319 --> 00:06:25,060

you look at partial we being able to

158

00:06:22,779 --> 00:06:27,638

evaluate partial evidence that

159

00:06:25,060 --> 00:06:28,930

accompanies several of these areas you

160

00:06:27,639 --> 00:06:31,360

would find that the number of people

161

00:06:28,930 --> 00:06:34,300

around the world who really grasp the

162

00:06:31,360 --> 00:06:35,650

science is very small I'd be surprised

163

00:06:34,300 --> 00:06:38,590

if it's more than a few thousand people

164

00:06:35,649 --> 00:06:41,799

that really grasp all of the signs yet

165

00:06:38,589 --> 00:06:43,959

if you talk to people in anywhere

166

00:06:41,800 --> 00:06:46,090

definitely in this room people have a

167

00:06:43,959 --> 00:06:48,848

lot of opinions they'll have an opinion

168

00:06:46,089 --> 00:06:50,259

about climate climate change and i'm not

169

00:06:48,848 --> 00:06:52,120

talking about having an opinion about

170

00:06:50,259 --> 00:06:54,310

climate change in the sense of oh I

171

00:06:52,120 --> 00:06:56,228

don't like carbon tax I don't like the

172
00:06:54,310 --> 00:06:58,660
carbon tax or I do like the carbon tax

173
00:06:56,228 --> 00:07:00,069
I'm talking about saying yeah the

174
00:06:58,660 --> 00:07:02,710
science is true or the science is not

175
00:07:00,069 --> 00:07:04,870
true I don't think that's an accident I

176
00:07:02,709 --> 00:07:07,269
think the reason people form an opinion

177
00:07:04,870 --> 00:07:09,699
about something like climate change is

178
00:07:07,269 --> 00:07:11,139
because they feel very strongly about

179
00:07:09,699 --> 00:07:13,538
it's something that could affect our

180
00:07:11,139 --> 00:07:15,788
life and there is also a sense in the

181
00:07:13,538 --> 00:07:18,009
media there's a confusing message in the

182
00:07:15,788 --> 00:07:20,250
media about how big it is and you know

183
00:07:18,009 --> 00:07:22,389
like if it's true we're all going to die

184
00:07:20,250 --> 00:07:23,769
which is by the way to we are all going

185
00:07:22,389 --> 00:07:25,900
to die but not because of climate change

186
00:07:23,769 --> 00:07:27,519
so people want to be involved in the

187
00:07:25,899 --> 00:07:29,319
debate it's something very important how

188
00:07:27,519 --> 00:07:31,509
do you get involved in the debate if you

189
00:07:29,319 --> 00:07:32,978
don't have an opinion it's a bit silly

190
00:07:31,509 --> 00:07:34,658
you just sit there and listen and say oh

191
00:07:32,978 --> 00:07:36,609
yeah maybe you're right maybe you're

192
00:07:34,658 --> 00:07:38,079
right people form an opinion

193
00:07:36,610 --> 00:07:39,400
basically because they want to be

194
00:07:38,079 --> 00:07:42,938
involved in the world be part of the

195
00:07:39,399 --> 00:07:45,638
debate the problem is that as Carl Sagan

196
00:07:42,939 --> 00:07:46,840
once said he said about somebody asked

197
00:07:45,639 --> 00:07:48,250
him what he's got feeling was about

198
00:07:46,839 --> 00:07:49,658
something and he said I try not to think

199
00:07:48,250 --> 00:07:51,579
with my gut I tried to think with my

200

00:07:49,658 --> 00:07:53,620
brain the problem is that obviously if

201
00:07:51,579 --> 00:07:54,938
you they're the only way you can if you

202
00:07:53,620 --> 00:07:56,620
don't understand the evidence if you

203
00:07:54,939 --> 00:07:58,509
don't if you're unable to judge the

204
00:07:56,620 --> 00:08:00,218
evidence for yourself you're in the end

205
00:07:58,509 --> 00:08:03,759
resorting to thinking with your gut and

206
00:08:00,218 --> 00:08:05,500
that's obviously not a good idea so what

207
00:08:03,759 --> 00:08:09,009
do you do if you're an interested person

208
00:08:05,500 --> 00:08:10,538
interested citizen and you want to to

209
00:08:09,009 --> 00:08:12,759
know what's going on you want to you

210
00:08:10,538 --> 00:08:14,978
want to format an informed opinion but

211
00:08:12,759 --> 00:08:16,330
you're not enough of an expert or you

212
00:08:14,978 --> 00:08:18,818
don't know enough about the signs to

213
00:08:16,329 --> 00:08:21,068
actually judge whether something is true

214
00:08:18,819 --> 00:08:22,360

or false you need to have some you to

215

00:08:21,069 --> 00:08:23,740

assess the evidence but you can't

216

00:08:22,360 --> 00:08:25,930

because you're not an expert so what do

217

00:08:23,740 --> 00:08:27,579

you do well what I'd like to speak about

218

00:08:25,930 --> 00:08:30,129

today is actually a few rules of thumb

219

00:08:27,579 --> 00:08:31,568

for assessing evidence and before I

220

00:08:30,129 --> 00:08:33,990

start I want to point out that these

221

00:08:31,569 --> 00:08:36,250

rules of thumb do not apply every time

222

00:08:33,990 --> 00:08:39,339

definitely not all of them apply all the

223

00:08:36,250 --> 00:08:41,379

time and there are some cases where they

224

00:08:39,339 --> 00:08:43,060

do not apply at all I could probably

225

00:08:41,379 --> 00:08:46,028

think of some cases where they don't

226

00:08:43,059 --> 00:08:47,739

apply at all but as a guide they're

227

00:08:46,028 --> 00:08:49,269

pretty good for assessing evidence on

228

00:08:47,740 --> 00:08:50,799

areas in which you feel that you need to

229
00:08:49,269 --> 00:08:52,179
form an opinion I'll move away from

230
00:08:50,799 --> 00:08:54,759
climate change for a little bit because

231
00:08:52,179 --> 00:08:58,000
I don't want anybody to I don't want to

232
00:08:54,759 --> 00:09:00,309
start a fight here but i'll start with

233
00:08:58,000 --> 00:09:02,440
simpler topics not also some of them

234
00:09:00,309 --> 00:09:03,939
will not be even from the from the realm

235
00:09:02,440 --> 00:09:06,240
of science let's start with rule number

236
00:09:03,940 --> 00:09:08,649
one the first rule is Occam's razor

237
00:09:06,240 --> 00:09:11,409
Occam's razor is a principle that says

238
00:09:08,649 --> 00:09:14,799
that it entities shall not be multiplied

239
00:09:11,409 --> 00:09:17,500
unnecessarily now a less 14th century

240
00:09:14,799 --> 00:09:20,649
way of saying that is that a simpler

241
00:09:17,500 --> 00:09:22,480
explanation takes precedence over a more

242
00:09:20,649 --> 00:09:25,480
complex one I'll give you an example

243
00:09:22,480 --> 00:09:28,360
there are errors errors of policy or

244
00:09:25,480 --> 00:09:30,430
neglect by governments you could take

245
00:09:28,360 --> 00:09:33,550
those to be the result of some grand

246
00:09:30,429 --> 00:09:36,448
conspiracy or you could say that they're

247
00:09:33,549 --> 00:09:40,838
the result of something like bad luck

248
00:09:36,448 --> 00:09:42,849
laziness toplessness in competence now

249
00:09:40,839 --> 00:09:47,699
the first the first one conspiracy

250
00:09:42,850 --> 00:09:50,000
requires you to assume some grand design

251
00:09:47,698 --> 00:09:52,699
long-term planning

252
00:09:50,000 --> 00:09:55,990
lawless execution and the ability to

253
00:09:52,700 --> 00:10:00,800
keep a secret for a very very long time

254
00:09:55,990 --> 00:10:03,470
by government the other one requires you

255
00:10:00,799 --> 00:10:04,939
to us to expect that people in

256
00:10:03,470 --> 00:10:06,920
government remember government is not

257

00:10:04,940 --> 00:10:09,050
some organization some body it's its

258
00:10:06,919 --> 00:10:11,089
people it's made out of people it

259
00:10:09,049 --> 00:10:14,389
requires people in government to have

260
00:10:11,090 --> 00:10:15,500
normal human frailties so I'm sure you

261
00:10:14,389 --> 00:10:18,259
all understand where I'm going with this

262
00:10:15,500 --> 00:10:20,330
but basically one is simple and

263
00:10:18,259 --> 00:10:22,429
straightforward and the other word the

264
00:10:20,330 --> 00:10:25,040
other one requires a much more elaborate

265
00:10:22,429 --> 00:10:26,689
explanation that probably requires us to

266
00:10:25,039 --> 00:10:29,089
go a little bit further and deeper and

267
00:10:26,690 --> 00:10:33,160
raises more questions another example is

268
00:10:29,090 --> 00:10:36,710
evolution vs creation evolution produces

269
00:10:33,159 --> 00:10:38,299
amazingly complex results people are you

270
00:10:36,710 --> 00:10:40,879
know capable of deciding to go to a pub

271
00:10:38,299 --> 00:10:42,829

on Thursday for example but despite the

272

00:10:40,879 --> 00:10:45,019

complex results the process itself is

273

00:10:42,830 --> 00:10:48,550

actually very simple all that's required

274

00:10:45,019 --> 00:10:51,860

to start evolution is some semi-stable

275

00:10:48,549 --> 00:10:54,409

replicators and this the likes of which

276

00:10:51,860 --> 00:10:56,690

were the precursors to the DNA in the in

277

00:10:54,409 --> 00:11:00,230

the cells of every living thing it

278

00:10:56,690 --> 00:11:03,980

creation requires one very very short

279

00:11:00,230 --> 00:11:05,659

word that is God now God is a very

280

00:11:03,980 --> 00:11:08,420

simple explanation if you're in a

281

00:11:05,659 --> 00:11:10,519

spelling contest but if you're actually

282

00:11:08,419 --> 00:11:12,529

trying to explain evolution it isn't

283

00:11:10,519 --> 00:11:14,539

simple at all it raises a whole host of

284

00:11:12,529 --> 00:11:17,059

new questions it is not a simple

285

00:11:14,539 --> 00:11:19,039

explanation it's a very large assumption

286
00:11:17,059 --> 00:11:20,989
that needs to be explained in its own

287
00:11:19,039 --> 00:11:22,730
right and is therefore therefore

288
00:11:20,990 --> 00:11:24,769
complicates matters quite significantly

289
00:11:22,730 --> 00:11:28,519
and is therefore not suitable

290
00:11:24,769 --> 00:11:30,740
explanation based on Occam's razor now

291
00:11:28,519 --> 00:11:32,809
obviously it is possible for the more

292
00:11:30,740 --> 00:11:36,080
complex explanation to be true as

293
00:11:32,809 --> 00:11:39,519
opposed to the simpler one but for that

294
00:11:36,080 --> 00:11:41,480
to happen requires quite extraordinary

295
00:11:39,519 --> 00:11:44,240
circumstances and we if we talk about

296
00:11:41,480 --> 00:11:46,639
extra extraordinary circumstances I have

297
00:11:44,240 --> 00:11:49,610
to quote Carl Sagan once again in what's

298
00:11:46,639 --> 00:11:51,399
called Sagan's balance because they can

299
00:11:49,610 --> 00:11:54,909
said that extraordinary claims require

300
00:11:51,399 --> 00:11:58,759
extraordinary evidence and that is our

301
00:11:54,909 --> 00:12:01,939
second rule an example of an

302
00:11:58,759 --> 00:12:03,350
extraordinary claim is that if you take

303
00:12:01,940 --> 00:12:07,370
a substance

304
00:12:03,350 --> 00:12:08,870
and you dilute it on water to such a

305
00:12:07,370 --> 00:12:11,000
degree where there's not even a single

306
00:12:08,870 --> 00:12:14,000
molecule left of the original material

307
00:12:11,000 --> 00:12:16,429
but you basically have water that

308
00:12:14,000 --> 00:12:18,850
material that that dilution will somehow

309
00:12:16,429 --> 00:12:20,599
cure the same symptoms that the original

310
00:12:18,850 --> 00:12:23,060
material would of course of course

311
00:12:20,600 --> 00:12:24,879
that's what homeopaths claim happens

312
00:12:23,059 --> 00:12:28,239
that's what homeopathy is all about and

313
00:12:24,879 --> 00:12:32,000
if that were true then for example

314

00:12:28,240 --> 00:12:34,370
caffeine diluted to that to such a

315
00:12:32,000 --> 00:12:37,460
degree to a mere pathak levels would

316
00:12:34,370 --> 00:12:40,370
cure insomnia and indeed that's what

317
00:12:37,460 --> 00:12:43,040
homeopaths a does but he doesn't now the

318
00:12:40,370 --> 00:12:46,340
reason that this claim is extraordinary

319
00:12:43,039 --> 00:12:48,349
is not just because it sounds funny it's

320
00:12:46,340 --> 00:12:50,269
because for it to be true requires

321
00:12:48,350 --> 00:12:53,899
almost everything we know about physics

322
00:12:50,269 --> 00:12:56,600
chemistry physiology and pharmacology to

323
00:12:53,899 --> 00:12:59,870
be wrong not just a little bit wrong but

324
00:12:56,600 --> 00:13:02,210
completely wrong which means that it's

325
00:12:59,870 --> 00:13:04,909
extremely implausible that homeopathy

326
00:13:02,210 --> 00:13:07,370
would be true now again that doesn't

327
00:13:04,909 --> 00:13:09,259
mean it's wrong it just means it's

328
00:13:07,370 --> 00:13:11,629

extremely implausible if you had a

329

00:13:09,259 --> 00:13:14,559

mountain of strong evidence showing that

330

00:13:11,629 --> 00:13:17,720

homeopathy is true then he would be true

331

00:13:14,559 --> 00:13:19,399

it just that obviously there is no such

332

00:13:17,720 --> 00:13:21,259

evidence all the evidence shows that

333

00:13:19,399 --> 00:13:25,819

homeopathy is not just implausible it's

334

00:13:21,259 --> 00:13:27,500

also false and doesn't work the most

335

00:13:25,820 --> 00:13:29,810

common type of evidence for the likes of

336

00:13:27,500 --> 00:13:32,480

homeopathy is in the form of

337

00:13:29,809 --> 00:13:36,079

testimonials another word for

338

00:13:32,480 --> 00:13:38,450

testimonials is anecdotes give an

339

00:13:36,080 --> 00:13:40,040

example of such an anecdote my son got

340

00:13:38,450 --> 00:13:42,190

the MMR vaccine and it caused him to

341

00:13:40,039 --> 00:13:44,719

become autistic it's a very common

342

00:13:42,190 --> 00:13:48,290

testimonial in the anti-vaccine movement

343
00:13:44,720 --> 00:13:49,879
and the problem is such an anecdote is

344
00:13:48,289 --> 00:13:51,949
that it doesn't take into account a lot

345
00:13:49,879 --> 00:13:53,509
of things that can happen for example

346
00:13:51,950 --> 00:13:55,220
one of the reasons that a lot of

347
00:13:53,509 --> 00:13:57,519
children that that link between autism

348
00:13:55,220 --> 00:13:59,930
and vaccines is made is because autism

349
00:13:57,519 --> 00:14:01,579
definitely profound autism is very often

350
00:13:59,929 --> 00:14:04,039
diagnosed around the age of two or three

351
00:14:01,580 --> 00:14:06,560
at a time when kids receive a lot of

352
00:14:04,039 --> 00:14:08,809
vaccines now the fact that two things

353
00:14:06,559 --> 00:14:12,739
happen at the same time doesn't mean

354
00:14:08,809 --> 00:14:14,989
that they're necessarily related and an

355
00:14:12,740 --> 00:14:16,850
anecdote doesn't have the ability to

356
00:14:14,990 --> 00:14:19,430
distinguish between

357
00:14:16,850 --> 00:14:21,019
two things happening together by chance

358
00:14:19,429 --> 00:14:24,258
or because there's a causal relationship

359
00:14:21,019 --> 00:14:27,129
between them millions of children

360
00:14:24,259 --> 00:14:29,600
receive millions of exceeds every year

361
00:14:27,129 --> 00:14:31,818
now some of them will be diagnosed as

362
00:14:29,600 --> 00:14:33,319
autistic at the same time so you could

363
00:14:31,818 --> 00:14:36,078
say oh well it was caused because of

364
00:14:33,318 --> 00:14:37,549
that but the reality is that some of the

365
00:14:36,078 --> 00:14:40,008
children will at the same time be

366
00:14:37,549 --> 00:14:41,750
diagnosed as being very bright some of

367
00:14:40,009 --> 00:14:43,759
them will be diagnosed as being

368
00:14:41,750 --> 00:14:45,708
short-sighted some of them will be

369
00:14:43,759 --> 00:14:48,350
diagnosed as being I don't know we'll

370
00:14:45,708 --> 00:14:50,419
have a weak leg or just or something

371

00:14:48,350 --> 00:14:53,269
else something some of them will have

372
00:14:50,419 --> 00:14:55,519
cancer around that time it happens the

373
00:14:53,269 --> 00:14:57,828
thing is that to show a relationship

374
00:14:55,519 --> 00:15:00,350
between them you need to do some

375
00:14:57,828 --> 00:15:02,599
statistics and statistics by its very

376
00:15:00,350 --> 00:15:04,730
nature cannot be done on one case in an

377
00:15:02,600 --> 00:15:05,750
anecdote is one case for example in the

378
00:15:04,730 --> 00:15:09,050
case of what we're talking about here

379
00:15:05,750 --> 00:15:10,909
autistic autism caused by vaccinations

380
00:15:09,049 --> 00:15:13,159
what you need is to compare large

381
00:15:10,909 --> 00:15:14,750
populations of vaccinate vaccinated

382
00:15:13,159 --> 00:15:16,429
children against non-vaccinated children

383
00:15:14,750 --> 00:15:18,649
and to see whether the prevalence or

384
00:15:16,429 --> 00:15:20,599
incidence of autism is different between

385
00:15:18,649 --> 00:15:24,409

the two groups the answer by the way is

386

00:15:20,600 --> 00:15:26,209

no it isn't the next rule is that it's

387

00:15:24,409 --> 00:15:28,879

based on that in that and that is the

388

00:15:26,208 --> 00:15:31,609

multiple of anecdote is not evidence and

389

00:15:28,879 --> 00:15:33,019

the corollary to that by the way is that

390

00:15:31,610 --> 00:15:34,579

a single anecdote is definitely not

391

00:15:33,019 --> 00:15:36,560

evidence so if somebody comes to you and

392

00:15:34,578 --> 00:15:39,049

says oh well but it happened to me say

393

00:15:36,559 --> 00:15:41,508

well good on you but I won't take that

394

00:15:39,049 --> 00:15:43,129

as evidence to anything because you

395

00:15:41,509 --> 00:15:44,899

might be completely true correct and it

396

00:15:43,129 --> 00:15:46,789

may even be true that there is a causal

397

00:15:44,899 --> 00:15:48,889

relationship there but your anecdote

398

00:15:46,789 --> 00:15:51,649

does not prove that the next rule the

399

00:15:48,889 --> 00:15:54,919

fourth rule is that experts do no more

400
00:15:51,649 --> 00:15:57,740
if you want to fix something electrical

401
00:15:54,919 --> 00:16:00,889
in your house you can go to somebody who

402
00:15:57,740 --> 00:16:04,818
has gone to take for a few years to

403
00:16:00,889 --> 00:16:07,009
study to be an electrician then did an

404
00:16:04,818 --> 00:16:10,278
apprenticeship for a few years and then

405
00:16:07,009 --> 00:16:12,889
spend the last ten years putting many

406
00:16:10,278 --> 00:16:14,809
kilometres of cables and and switch

407
00:16:12,889 --> 00:16:17,539
boxes and all kinds of things around

408
00:16:14,809 --> 00:16:21,969
houses everywhere or you can take some

409
00:16:17,539 --> 00:16:26,208
kind of handy man who can replace a

410
00:16:21,970 --> 00:16:27,889
faulty socket and I think everybody in

411
00:16:26,208 --> 00:16:29,479
this room would accept any not just in

412
00:16:27,889 --> 00:16:30,149
this room I think most people in the

413
00:16:29,480 --> 00:16:31,860
world will excel

414
00:16:30,149 --> 00:16:33,929
that the electrician knows a lot more

415
00:16:31,860 --> 00:16:37,320
about electricity and about electrical

416
00:16:33,929 --> 00:16:39,000
work than the handyman because he's an

417
00:16:37,320 --> 00:16:41,700
expert it's what he's been doing that's

418
00:16:39,000 --> 00:16:42,750
what he has learned is retained a lot of

419
00:16:41,700 --> 00:16:46,370
knowledge over the years that he's been

420
00:16:42,750 --> 00:16:50,129
doing it similarly a GP knows more about

421
00:16:46,370 --> 00:16:51,690
vaccinations then somebody who has a

422
00:16:50,129 --> 00:16:55,409
brain or claims to have a brain and it's

423
00:16:51,690 --> 00:16:58,890
been doing research on Google and an

424
00:16:55,409 --> 00:17:01,829
expert on infectious diseases knows more

425
00:16:58,889 --> 00:17:03,480
about vaccinations than the GP because

426
00:17:01,830 --> 00:17:05,789
it's his specialty that's what he's been

427
00:17:03,480 --> 00:17:08,309
doing or she's been doing and that's

428

00:17:05,789 --> 00:17:10,829
what they've been studying so experts do

429
00:17:08,309 --> 00:17:12,240
no more and by the way as if because

430
00:17:10,829 --> 00:17:14,220
I've already mentioned climate giant

431
00:17:12,240 --> 00:17:17,309
climate science I should mention that a

432
00:17:14,220 --> 00:17:19,559
veteran atmospheric scientist knows more

433
00:17:17,309 --> 00:17:21,838
about climate change than a geologist

434
00:17:19,559 --> 00:17:23,009
and it's not because geology doesn't

435
00:17:21,838 --> 00:17:24,659
have anything to do with climate change

436
00:17:23,009 --> 00:17:27,209
it's because it has a lot less to do

437
00:17:24,660 --> 00:17:30,120
with climate change then our atmospheric

438
00:17:27,209 --> 00:17:33,690
science listening to a specialist expert

439
00:17:30,119 --> 00:17:36,239
is not foolproof and we'll talk in a

440
00:17:33,690 --> 00:17:37,890
moment about the whole issue of argument

441
00:17:36,240 --> 00:17:39,809
from authority when you listen to us you

442
00:17:37,890 --> 00:17:42,480

choose your expert and you listen to

443

00:17:39,809 --> 00:17:44,909

just one person that's that's an issue

444

00:17:42,480 --> 00:17:46,769

in its own right but if you have to

445

00:17:44,910 --> 00:17:48,570

choose between listening to that guy I

446

00:17:46,769 --> 00:17:50,730

mentioned earlier or that girl in the

447

00:17:48,569 --> 00:17:52,559

case that we know very well it claims to

448

00:17:50,730 --> 00:17:55,470

have a brain and be doing research on on

449

00:17:52,559 --> 00:17:57,269

the internet choose the expert because

450

00:17:55,470 --> 00:18:00,180

the ex but is much more likely to lead

451

00:17:57,269 --> 00:18:02,639

you down the right path the fifth rule

452

00:18:00,180 --> 00:18:04,380

is a bit of an argument amalgamation of

453

00:18:02,640 --> 00:18:06,090

the previous rules and in particular

454

00:18:04,380 --> 00:18:08,550

it's something that takes care of the

455

00:18:06,089 --> 00:18:12,599

issue of argument from authority and if

456

00:18:08,549 --> 00:18:15,119

that is trust science not a scientist

457
00:18:12,599 --> 00:18:17,069
but science in general now obviously

458
00:18:15,119 --> 00:18:19,679
when I when I talk about science in in

459
00:18:17,069 --> 00:18:21,990
the context of this talk I'm referring

460
00:18:19,680 --> 00:18:23,370
not to the science of chemistry or the

461
00:18:21,990 --> 00:18:25,200
signs of physical I'm talking about the

462
00:18:23,369 --> 00:18:27,269
scientific method I'm talking about the

463
00:18:25,200 --> 00:18:30,450
process of science which is obviously a

464
00:18:27,269 --> 00:18:32,910
self-correcting process in which the

465
00:18:30,450 --> 00:18:34,500
ultimate goal of the participants is to

466
00:18:32,910 --> 00:18:36,990
determine whether something is true or

467
00:18:34,500 --> 00:18:39,240
not with what the evidence shows and the

468
00:18:36,990 --> 00:18:43,410
they are the final arbiter of what's

469
00:18:39,240 --> 00:18:44,038
true or not is the evidence not one one

470
00:18:43,410 --> 00:18:46,288
person

471
00:18:44,038 --> 00:18:48,898
things or another person things now

472
00:18:46,288 --> 00:18:52,319
since the participants in this process

473
00:18:48,898 --> 00:18:54,778
which we also know as scientists are

474
00:18:52,319 --> 00:18:56,788
human the process doesn't always run

475
00:18:54,778 --> 00:18:58,878
smoothly or flawlessly there's always

476
00:18:56,788 --> 00:19:01,349
problems along the way so you do find

477
00:18:58,878 --> 00:19:03,719
faulty argument you do find faulty

478
00:19:01,349 --> 00:19:05,898
papers you do find faulty research along

479
00:19:03,720 --> 00:19:09,058
the way but time and again this

480
00:19:05,898 --> 00:19:12,199
self-correcting method of principles of

481
00:19:09,058 --> 00:19:14,579
science ensure that over time and

482
00:19:12,200 --> 00:19:16,619
through a lot of research by many

483
00:19:14,579 --> 00:19:20,009
different people we actually get closer

484
00:19:16,618 --> 00:19:21,928
and closer to the truth an example a

485

00:19:20,009 --> 00:19:24,979
great example of that is the famous case

486
00:19:21,929 --> 00:19:27,809
of Barry Marshall and Robin Warren who

487
00:19:24,979 --> 00:19:29,308
despite what everybody knew for many

488
00:19:27,808 --> 00:19:34,138
years with that peptic ulcers were

489
00:19:29,308 --> 00:19:35,220
caused by stress found that peptic

490
00:19:34,138 --> 00:19:38,638
ulcers were actually caused by a

491
00:19:35,220 --> 00:19:41,399
bacterium called helicobacter pylori and

492
00:19:38,638 --> 00:19:43,469
that it can be treated by antibiotics it

493
00:19:41,398 --> 00:19:45,988
wasn't accepted straight away it took a

494
00:19:43,470 --> 00:19:48,960
while he was common knowledge it was a

495
00:19:45,989 --> 00:19:51,119
consensus that stress was causing ulcers

496
00:19:48,960 --> 00:19:53,720
and he took them a while to prove it but

497
00:19:51,118 --> 00:19:55,738
once they proved it once they proved it

498
00:19:53,720 --> 00:19:58,649
everybody changed their mind you will

499
00:19:55,739 --> 00:20:00,119

not find a single well maybe a single

500

00:19:58,648 --> 00:20:02,548

you will find you somebody who also

501

00:20:00,118 --> 00:20:04,678

doesn't vaccinate there but you'll find

502

00:20:02,548 --> 00:20:07,168

maybe a few doctors but the vast

503

00:20:04,679 --> 00:20:09,570

majority of scientists and doctors and

504

00:20:07,169 --> 00:20:11,759

medical professionals of various kinds

505

00:20:09,569 --> 00:20:14,519

will accept now that when you have

506

00:20:11,759 --> 00:20:16,319

ulcers you need to take antibiotics this

507

00:20:14,519 --> 00:20:18,839

and you get treatment and that's they

508

00:20:16,319 --> 00:20:20,428

will resolve the problem and these

509

00:20:18,839 --> 00:20:21,839

things happen you know you have some you

510

00:20:20,429 --> 00:20:24,419

have some idea you have some hypotheses

511

00:20:21,839 --> 00:20:27,138

you have some thought about the way

512

00:20:24,419 --> 00:20:29,549

things are like stress causes ulcers and

513

00:20:27,138 --> 00:20:31,108

it's you know and then the facts are

514
00:20:29,548 --> 00:20:34,558
shown the evidence is shown and that

515
00:20:31,108 --> 00:20:37,888
hypothesis that theory goes away th

516
00:20:34,558 --> 00:20:39,960
Huxley who was known as Darwin's bulldog

517
00:20:37,888 --> 00:20:41,908
once said something something that we

518
00:20:39,960 --> 00:20:44,358
like he said that the traded tragedy of

519
00:20:41,909 --> 00:20:47,940
science is a beautiful hypothesis

520
00:20:44,358 --> 00:20:49,739
destroyed by an ugly fact so obviously

521
00:20:47,940 --> 00:20:52,288
in this case there's no ugly and

522
00:20:49,739 --> 00:20:54,740
beautiful but but that's what what's

523
00:20:52,288 --> 00:20:58,670
important the facts are what's important

524
00:20:54,740 --> 00:21:00,650
now it's worth knowing or pointing out

525
00:20:58,670 --> 00:21:04,429
that science scientific knowledge

526
00:21:00,650 --> 00:21:06,440
doesn't evolve in a vacuum we know a lot

527
00:21:04,429 --> 00:21:08,179
about science we know we have a lot of

528

00:21:06,440 --> 00:21:10,519

signs when we start to interrogate a

529

00:21:08,179 --> 00:21:12,110

specific question and we have to rely on

530

00:21:10,519 --> 00:21:16,879

that I want to ask you a question here

531

00:21:12,109 --> 00:21:20,990

how do we know the moon okay we before

532

00:21:16,880 --> 00:21:25,840

69 how did we know the moon was not made

533

00:21:20,990 --> 00:21:28,460

of green cheese near the question before

534

00:21:25,839 --> 00:21:34,069

1969 how did we know the moon was not

535

00:21:28,460 --> 00:21:39,860

made of green cheese sorry spectroscopy

536

00:21:34,069 --> 00:21:44,058

okay yeah Ian theory okay what just a

537

00:21:39,859 --> 00:21:45,799

theory josh says he didn't taste good so

538

00:21:44,058 --> 00:21:49,339

we had three we had three answers here

539

00:21:45,799 --> 00:21:51,440

spectroscopy theory and that he didn't

540

00:21:49,339 --> 00:21:53,240

taste so good now I want to give you the

541

00:21:51,440 --> 00:21:56,350

answer and it will sound like I'm being

542

00:21:53,240 --> 00:21:58,339
facetious but I'm not the reason we knew

543
00:21:56,349 --> 00:22:00,919
very good somebody said it was

544
00:21:58,339 --> 00:22:02,779
implausible the reason we know it was

545
00:22:00,920 --> 00:22:04,550
not it's not it was not made of green

546
00:22:02,779 --> 00:22:06,769
cheese is because it's absurd to think

547
00:22:04,549 --> 00:22:08,889
that it's maybe a cheese we know that we

548
00:22:06,769 --> 00:22:10,970
know about we know enough about

549
00:22:08,890 --> 00:22:14,720
planetary formation we know about

550
00:22:10,970 --> 00:22:17,480
gravity we know enough about cheese yeah

551
00:22:14,720 --> 00:22:19,910
we know enough about cheese to know that

552
00:22:17,480 --> 00:22:21,259
it's so extremely unlikely that the moon

553
00:22:19,910 --> 00:22:25,009
is great made of green cheese that is

554
00:22:21,259 --> 00:22:28,970
not worth considering yeah absolutely

555
00:22:25,009 --> 00:22:30,980
true but you mentioned spectroscopy we

556
00:22:28,970 --> 00:22:33,319

had we knew the science of spectroscopy

557

00:22:30,980 --> 00:22:35,210

there was previous science that allowed

558

00:22:33,319 --> 00:22:38,299

us to assess the moon without actually

559

00:22:35,210 --> 00:22:42,049

going there now we 969 we went there we

560

00:22:38,299 --> 00:22:46,669

landed well not we Neil Neil landed and

561

00:22:42,049 --> 00:22:49,669

didn't get stuck into the cheesy surface

562

00:22:46,670 --> 00:22:51,860

of the moon so now we know for sure but

563

00:22:49,670 --> 00:22:55,850

we but just that you mentioned yourself

564

00:22:51,859 --> 00:22:57,769

there was this we had signs that it was

565

00:22:55,849 --> 00:22:59,959

available to us that allows us to assess

566

00:22:57,769 --> 00:23:01,308

it before we actually looked into it in

567

00:22:59,960 --> 00:23:02,600

more detail so we have a fairly good

568

00:23:01,308 --> 00:23:05,690

idea of what the cheese there with the

569

00:23:02,599 --> 00:23:07,369

moon is made of and it's not cheese yeah

570

00:23:05,690 --> 00:23:08,360

rachel was looking forward to the next

571
00:23:07,369 --> 00:23:10,609
trip to the moon

572
00:23:08,359 --> 00:23:12,379
for a non-scientist to evaluate the

573
00:23:10,609 --> 00:23:15,199
state of the ordinance on a specific

574
00:23:12,380 --> 00:23:18,740
scientific question requires to evaluate

575
00:23:15,200 --> 00:23:21,890
essentially two questions now one of

576
00:23:18,740 --> 00:23:24,410
them is has proper scientific process

577
00:23:21,890 --> 00:23:26,210
being followed and so in other words

578
00:23:24,410 --> 00:23:27,769
were there are no obvious failings in

579
00:23:26,210 --> 00:23:30,440
the process of arriving at a certain

580
00:23:27,769 --> 00:23:32,179
conclusion and the other one is whether

581
00:23:30,440 --> 00:23:34,670
there is a scientific consensus on the

582
00:23:32,179 --> 00:23:36,290
topic that we're discussing both

583
00:23:34,670 --> 00:23:38,750
questions need to be answered in the

584
00:23:36,289 --> 00:23:41,178
affirmative or at least not answered in

585
00:23:38,750 --> 00:23:43,220
the negative for us to say yes it looks

586
00:23:41,179 --> 00:23:45,980
like we know what the answer is about

587
00:23:43,220 --> 00:23:47,480
this about science at the moment I want

588
00:23:45,980 --> 00:23:50,929
to talk about scientific consensus it's

589
00:23:47,480 --> 00:23:53,990
a bit of a controversial term people

590
00:23:50,929 --> 00:23:57,259
very often think that it's something to

591
00:23:53,990 --> 00:24:00,710
do with democracy in science nothing

592
00:23:57,259 --> 00:24:03,558
like that at all scientific consensus

593
00:24:00,710 --> 00:24:06,048
arises when the majority of working

594
00:24:03,558 --> 00:24:08,750
scientists in a specific field or area

595
00:24:06,048 --> 00:24:12,319
and the majority of organizations in

596
00:24:08,750 --> 00:24:15,589
that specific field or area and the vast

597
00:24:12,319 --> 00:24:19,759
majority of scientific papers regarding

598
00:24:15,589 --> 00:24:21,829
that area all point in roughly the same

599

00:24:19,759 --> 00:24:24,169
direction and the world roughly is very

600
00:24:21,829 --> 00:24:26,869
important they don't all have to point

601
00:24:24,169 --> 00:24:30,820
do you know if it's okay if some of them

602
00:24:26,869 --> 00:24:34,159
point northeast some of them Northwest

603
00:24:30,819 --> 00:24:36,769
but very few but if they're very very

604
00:24:34,160 --> 00:24:39,710
few out of let's say thousands and only

605
00:24:36,769 --> 00:24:42,470
three points south and all the rest

606
00:24:39,710 --> 00:24:44,450
point between southeast northeast and

607
00:24:42,470 --> 00:24:47,419
northwest then we can be pretty sure

608
00:24:44,450 --> 00:24:49,190
that that's the general direction we're

609
00:24:47,419 --> 00:24:51,799
looking at if we talk about climate

610
00:24:49,190 --> 00:24:53,509
change as an as an example what we have

611
00:24:51,798 --> 00:24:56,690
here is something science that's being

612
00:24:53,509 --> 00:24:58,220
investigated for something like 50 some

613
00:24:56,690 --> 00:25:00,289

claim 75 years but definitely in the

614

00:24:58,220 --> 00:25:03,769
past 50 years it's been looked at and

615

00:25:00,289 --> 00:25:06,019
over that time it hasn't there was no

616

00:25:03,769 --> 00:25:07,819
consensus to begin with definitely no

617

00:25:06,019 --> 00:25:10,308
consensus the consensus really only

618

00:25:07,819 --> 00:25:13,460
started to emerge in the last 15 years

619

00:25:10,308 --> 00:25:15,230
or so maybe even you might even claim

620

00:25:13,460 --> 00:25:18,880
that it's just the last ten years but

621

00:25:15,230 --> 00:25:22,259
definitely 15 years it hasn't a reason

622

00:25:18,880 --> 00:25:23,670
easily or quickly it has taken time

623

00:25:22,259 --> 00:25:26,069
and that's the way it should be

624

00:25:23,670 --> 00:25:28,910
scientists are by their very nature

625

00:25:26,069 --> 00:25:31,589
skeptical when there's some new idea

626

00:25:28,910 --> 00:25:33,870
presented to them they will want to see

627

00:25:31,589 --> 00:25:36,209
the evidence and it's been a hard slog

628
00:25:33,869 --> 00:25:37,619
to find all the evidence first of all

629
00:25:36,210 --> 00:25:39,360
it's difficult to collect that evidence

630
00:25:37,619 --> 00:25:41,009
secondly it's difficult to analyze that

631
00:25:39,359 --> 00:25:42,539
evidence and then there were not that

632
00:25:41,009 --> 00:25:43,980
many scientists in the field and the

633
00:25:42,539 --> 00:25:46,049
number of scientists and number the

634
00:25:43,980 --> 00:25:48,360
amount of Science in the field has grown

635
00:25:46,049 --> 00:25:50,519
over time and more and more scientists

636
00:25:48,359 --> 00:25:52,949
came to appreciate that the evidence

637
00:25:50,519 --> 00:25:54,539
suggests a certain thing basically what

638
00:25:52,950 --> 00:25:56,670
we're saying here is that over time over

639
00:25:54,539 --> 00:25:59,639
the last 50 years more and more

640
00:25:56,670 --> 00:26:02,789
scientists who are experts in the field

641
00:25:59,640 --> 00:26:06,330
of climate became convinced by the

642

00:26:02,789 --> 00:26:08,309

evidence okay so that's what a

643

00:26:06,329 --> 00:26:10,559

scientific consensus means and that's a

644

00:26:08,309 --> 00:26:13,409

really important point the experts are

645

00:26:10,559 --> 00:26:15,659

convinced by the evidence that's a very

646

00:26:13,410 --> 00:26:18,720

strong point in favor of the scientific

647

00:26:15,660 --> 00:26:20,250

consensus now obviously we don't want to

648

00:26:18,720 --> 00:26:22,559

fall for something now whether it's

649

00:26:20,250 --> 00:26:23,910

something that's controversial we want

650

00:26:22,559 --> 00:26:25,349

to listen to what the scientists thought

651

00:26:23,910 --> 00:26:26,460

before the controversy and off the

652

00:26:25,349 --> 00:26:27,869

Conservancy and see whether there's the

653

00:26:26,460 --> 00:26:30,750

difference there but generally

654

00:26:27,869 --> 00:26:32,759

scientists tend to overall as a

655

00:26:30,750 --> 00:26:33,839

consensus get it right specifically with

656

00:26:32,759 --> 00:26:35,759
climate change i've mentioned i

657
00:26:33,839 --> 00:26:37,230
mentioned the process but i don't think

658
00:26:35,759 --> 00:26:39,029
there's any particular reason to suspect

659
00:26:37,230 --> 00:26:40,500
that due process hasn't been followed

660
00:26:39,029 --> 00:26:42,299
it's very difficult to assess the

661
00:26:40,500 --> 00:26:45,210
process when you hit without looking at

662
00:26:42,299 --> 00:26:47,579
specific specific papers a specific

663
00:26:45,210 --> 00:26:49,410
research and that as i mentioned is very

664
00:26:47,579 --> 00:26:51,839
difficult for most of us I know that if

665
00:26:49,410 --> 00:26:55,320
I had I tried to read some papers

666
00:26:51,839 --> 00:26:57,299
regarding ice cause ice core sampling it

667
00:26:55,319 --> 00:27:00,359
meant so little to me that I felt that I

668
00:26:57,299 --> 00:27:02,159
could easily be convinced either way by

669
00:27:00,359 --> 00:27:04,469
these papers you know if the papers the

670
00:27:02,160 --> 00:27:07,110

paper the same paper if the conclusion

671

00:27:04,470 --> 00:27:08,640

the abstract was when one way or the

672

00:27:07,109 --> 00:27:10,049

other I would be equally convinced

673

00:27:08,640 --> 00:27:11,580

because it just meant so little to me

674

00:27:10,049 --> 00:27:13,049

and I think most people are like that

675

00:27:11,579 --> 00:27:14,490

unless they are in specific field they

676

00:27:13,049 --> 00:27:17,220

can't assess the evidence for themselves

677

00:27:14,490 --> 00:27:18,870

basically we have I have to rely to sin

678

00:27:17,220 --> 00:27:20,730

extent on the science but we we can look

679

00:27:18,869 --> 00:27:22,679

at the way the research was done and

680

00:27:20,730 --> 00:27:25,289

tried to Steve this obvious holes in the

681

00:27:22,680 --> 00:27:26,940

way it was in the way was conducted in

682

00:27:25,289 --> 00:27:29,480

the case of climate change their climate

683

00:27:26,940 --> 00:27:32,160

science there is a bit of a kind of an

684

00:27:29,480 --> 00:27:34,589

idea that there's maybe either a mass

685
00:27:32,160 --> 00:27:36,150
delusion or a conspiracy among climate

686
00:27:34,589 --> 00:27:39,089
climate scientists to

687
00:27:36,150 --> 00:27:41,910
suggest the climate change by human

688
00:27:39,089 --> 00:27:44,639
causes is actually happening but that is

689
00:27:41,910 --> 00:27:46,320
a huge claim in its own right and to say

690
00:27:44,640 --> 00:27:48,090
that there is such a conspiracy or mass

691
00:27:46,319 --> 00:27:49,349
delusion you need to present evidence

692
00:27:48,089 --> 00:27:51,259
and I don't believe that there's

693
00:27:49,349 --> 00:27:53,759
evidence that's being presented for that

694
00:27:51,259 --> 00:27:57,059
despite quite a few attempt to do that

695
00:27:53,759 --> 00:27:58,890
and also remember that suggesting a

696
00:27:57,059 --> 00:28:01,799
conspiracy contradicts at least two of

697
00:27:58,890 --> 00:28:03,780
the previous rules so just be aware of

698
00:28:01,799 --> 00:28:05,639
that since both questions in the case of

699

00:28:03,779 --> 00:28:08,609

climate change have been answered in the

700

00:28:05,640 --> 00:28:11,490

affirmative the theory of climates are

701

00:28:08,609 --> 00:28:15,059

changed by human induced carbon forcing

702

00:28:11,490 --> 00:28:16,549

is likely to be correct to the best of

703

00:28:15,059 --> 00:28:18,809

the current scientific knowledge and

704

00:28:16,549 --> 00:28:21,359

I've chosen these words very carefully

705

00:28:18,809 --> 00:28:23,009

it's that's the current knowledge it

706

00:28:21,359 --> 00:28:24,689

doesn't mean it's necessarily true

707

00:28:23,009 --> 00:28:27,180

doesn't mean that it will always hold

708

00:28:24,690 --> 00:28:30,570

true but it means that we have to grant

709

00:28:27,180 --> 00:28:34,830

it provisional acceptance if we are

710

00:28:30,569 --> 00:28:37,200

skeptics the last rule and that's a very

711

00:28:34,829 --> 00:28:39,210

important rule without which all the

712

00:28:37,200 --> 00:28:42,000

rest are not important is that you have

713

00:28:39,210 --> 00:28:43,500
to be willing to change your mind if you

714
00:28:42,000 --> 00:28:45,119
come into this process of trying to

715
00:28:43,500 --> 00:28:47,039
assess the evidence and you're not

716
00:28:45,119 --> 00:28:49,319
willing to change your mind what will

717
00:28:47,039 --> 00:28:51,690
happen is that you will find all the

718
00:28:49,319 --> 00:28:53,730
evidence to support your position that's

719
00:28:51,690 --> 00:28:55,920
what people do it's natural there's

720
00:28:53,730 --> 00:28:59,009
nothing strange about that that's what

721
00:28:55,920 --> 00:29:03,390
most people will do naturally the thing

722
00:28:59,009 --> 00:29:06,059
is you have to try to be completely open

723
00:29:03,390 --> 00:29:09,509
minded to evidence but not obviously

724
00:29:06,059 --> 00:29:11,549
open minded to just any claim and that's

725
00:29:09,509 --> 00:29:14,309
not an easy thing to do I've thought

726
00:29:11,549 --> 00:29:15,930
long and hard about times that I have

727
00:29:14,309 --> 00:29:17,669

changed my mind about something that was

728

00:29:15,930 --> 00:29:19,860

important to me something that I felt

729

00:29:17,670 --> 00:29:21,660

strongly about and I came up with one

730

00:29:19,859 --> 00:29:23,699

example but I'd like you all to think

731

00:29:21,660 --> 00:29:24,660

about examples of your own whether

732

00:29:23,700 --> 00:29:26,190

you've changed your mind about something

733

00:29:24,660 --> 00:29:28,500

that you felt very strongly about and

734

00:29:26,190 --> 00:29:30,900

then contrary evidence came to light and

735

00:29:28,500 --> 00:29:34,980

you change your mind my example is to do

736

00:29:30,900 --> 00:29:37,470

with pain research on rats I strongly

737

00:29:34,980 --> 00:29:41,430

believe that pain research on rats was

738

00:29:37,470 --> 00:29:43,799

both an ethical and useless because the

739

00:29:41,430 --> 00:29:46,140

rat brain is so different to ours that I

740

00:29:43,799 --> 00:29:48,119

I just felt that it was just why would

741

00:29:46,140 --> 00:29:49,230

you hurt rats when you can you can't

742
00:29:48,119 --> 00:29:50,079
find anything about the human brain

743
00:29:49,230 --> 00:29:52,298
because of it

744
00:29:50,079 --> 00:29:54,759
that but that was the way I've thought

745
00:29:52,298 --> 00:29:55,990
about it for four years that was my my

746
00:29:54,759 --> 00:29:57,609
view and I felt that he was strongly

747
00:29:55,990 --> 00:30:01,210
supported by science actually knew what

748
00:29:57,609 --> 00:30:03,579
was happening in in labs with rats I

749
00:30:01,210 --> 00:30:05,769
knew how do in order to study pain in

750
00:30:03,579 --> 00:30:07,898
rats strangely enough you have to hurt

751
00:30:05,769 --> 00:30:09,970
them and which is something that I felt

752
00:30:07,898 --> 00:30:13,028
was not you know you have to only do it

753
00:30:09,970 --> 00:30:15,190
if it's absolutely but if the results of

754
00:30:13,028 --> 00:30:17,440
the study the studies are very valuable

755
00:30:15,190 --> 00:30:21,340
to you and I felt that that wasn't the

756
00:30:17,440 --> 00:30:23,380
case one day we had dinner with friends

757
00:30:21,339 --> 00:30:25,388
and done one of the friends brought her

758
00:30:23,380 --> 00:30:27,460
parents with her and they're both

759
00:30:25,388 --> 00:30:30,369
professors of biology and I somehow the

760
00:30:27,460 --> 00:30:32,490
conversation turned to pain and then to

761
00:30:30,369 --> 00:30:36,250
rats and I said what I thought about

762
00:30:32,490 --> 00:30:38,970
pain research in rats and one of the

763
00:30:36,250 --> 00:30:42,069
professors said I think the wording was

764
00:30:38,970 --> 00:30:44,589
everything we know about pain comes from

765
00:30:42,069 --> 00:30:47,500
research on rats and I kind of smiled

766
00:30:44,589 --> 00:30:48,759
smugly and debated it for a while and it

767
00:30:47,500 --> 00:30:51,609
became quite clear that the professor

768
00:30:48,759 --> 00:30:52,808
knew what he was talking about and I

769
00:30:51,609 --> 00:30:54,579
went to need some more research and

770

00:30:52,808 --> 00:30:56,048
looked at it looked at looks at the

771
00:30:54,579 --> 00:30:59,259
volume of papers looked at what some of

772
00:30:56,048 --> 00:31:00,609
the papers said and became quite clear

773
00:30:59,259 --> 00:31:02,440
that it was simply wrong I wasn't a

774
00:31:00,609 --> 00:31:04,898
little bit wrong I wasn't you know just

775
00:31:02,440 --> 00:31:07,179
maybe not looking at it the right way

776
00:31:04,898 --> 00:31:09,638
the right way exactly I was completely

777
00:31:07,179 --> 00:31:12,009
wrong indeed as the professor said

778
00:31:09,638 --> 00:31:15,908
everything we know about pain in humans

779
00:31:12,009 --> 00:31:18,148
is it comes from research on rats I've

780
00:31:15,909 --> 00:31:20,980
changed my mind and it's something that

781
00:31:18,148 --> 00:31:23,168
was a very strong very strong point for

782
00:31:20,980 --> 00:31:25,480
me being able to actually have an

783
00:31:23,169 --> 00:31:27,519
example like that and I urge you to all

784
00:31:25,480 --> 00:31:29,470

find an example like that first of all

785

00:31:27,519 --> 00:31:31,058

so when somebody challenges you to say

786

00:31:29,470 --> 00:31:32,429

oh yeah so when did you ever change your

787

00:31:31,058 --> 00:31:35,079

mind you can have something in your

788

00:31:32,429 --> 00:31:37,149

toolkit for that but also because i

789

00:31:35,079 --> 00:31:39,339

think it's an empowering an empowering

790

00:31:37,148 --> 00:31:40,658

thing personally to know that you can

791

00:31:39,339 --> 00:31:42,519

change your mind about something you

792

00:31:40,659 --> 00:31:44,649

feel strongly about when evidence is

793

00:31:42,519 --> 00:31:49,388

presented that contradicts you previous

794

00:31:44,648 --> 00:31:50,739

knowledge and finally there's there's a

795

00:31:49,388 --> 00:31:52,479

couple of things I want to say that I'm

796

00:31:50,740 --> 00:31:53,740

not directly related but first of all

797

00:31:52,480 --> 00:31:56,110

with regards to climate change I want to

798

00:31:53,740 --> 00:31:57,669

emphasize that accepting the science

799
00:31:56,109 --> 00:31:59,648
does not mean that you also accept the

800
00:31:57,669 --> 00:32:02,230
carbon tax it's a political question

801
00:31:59,648 --> 00:32:04,329
it's got nothing to do with the signs

802
00:32:02,230 --> 00:32:06,640
and all I talked about here today was to

803
00:32:04,329 --> 00:32:08,289
do with evaluating evidence it has

804
00:32:06,640 --> 00:32:09,610
nothing to do with a political system I

805
00:32:08,289 --> 00:32:11,798
don't believe the political system is

806
00:32:09,609 --> 00:32:14,949
subject to evidence now because it can't

807
00:32:11,798 --> 00:32:18,009
be just because it isn't and finally

808
00:32:14,950 --> 00:32:21,340
remember you don't have to form an

809
00:32:18,009 --> 00:32:22,919
opinion if you don't know enough if you

810
00:32:21,339 --> 00:32:25,928
don't feel that you know enough to

811
00:32:22,919 --> 00:32:28,419
assess the evidence then the best thing

812
00:32:25,929 --> 00:32:31,269
to do is to not have an opinion say I

813
00:32:28,419 --> 00:32:33,610
don't have an opinion when I am able to

814
00:32:31,269 --> 00:32:35,259
assess the evidence when I'm when I have

815
00:32:33,609 --> 00:32:37,418
assessed when I've properly assess the

816
00:32:35,259 --> 00:32:40,359
evidence then I will form an opinion

817
00:32:37,419 --> 00:32:55,600
until then I simply don't have one thank

818
00:32:40,359 --> 00:32:57,459
you very much hi this is Tim Farley you

819
00:32:55,599 --> 00:33:00,369
probably know me from what's the harm

820
00:32:57,460 --> 00:33:03,100
net a catalog of the real world harm

821
00:33:00,369 --> 00:33:06,039
caused by lack of critical thinking but

822
00:33:03,099 --> 00:33:09,009
that's not my only project i present at

823
00:33:06,039 --> 00:33:11,349
skeptical events I post a daily skeptic

824
00:33:09,009 --> 00:33:14,109
history fact on Twitter and Facebook and

825
00:33:11,349 --> 00:33:17,230
I blog about using new techniques on the

826
00:33:14,109 --> 00:33:20,409
internet to advance skepticism come over

827

00:33:17,230 --> 00:33:23,860
to skip tools com and check out my

828
00:33:20,410 --> 00:33:26,759
latest ideas but first enjoy the rest of

829
00:33:23,859 --> 00:33:26,759
the skeptic zone

830
00:33:29,180 --> 00:33:36,160
his main art spooky action at a distance

831
00:33:37,339 --> 00:33:42,389
look we here at skeptics at the pub and

832
00:33:40,169 --> 00:33:44,040
tonight the question is um how do you

833
00:33:42,390 --> 00:33:45,690
defend being a skeptic because when you

834
00:33:44,039 --> 00:33:47,940
eventually come out and tell people

835
00:33:45,690 --> 00:33:48,929
you're a skeptic after they try and

836
00:33:47,940 --> 00:33:50,429
figure out what it is they're going to

837
00:33:48,929 --> 00:33:53,009
ask you what's that all about what do

838
00:33:50,429 --> 00:33:55,980
you say all my friends know already but

839
00:33:53,009 --> 00:33:57,900
basically I tell them that it's not

840
00:33:55,980 --> 00:34:00,058
necessarily denying things it's just

841
00:33:57,900 --> 00:34:01,620

requiring evidence required requiring

842

00:34:00,058 --> 00:34:03,869

evidence before you believe something

843

00:34:01,619 --> 00:34:05,308

and ever find yourself a bit of the butt

844

00:34:03,869 --> 00:34:07,918

of the joke I'll he won't believe that

845

00:34:05,308 --> 00:34:11,159

he's a skeptic that kind of stuff I'm

846

00:34:07,919 --> 00:34:13,440

not really no okay good frenzy although

847

00:34:11,159 --> 00:34:15,210

I did give a Jehovah visiting Jehovah's

848

00:34:13,440 --> 00:34:17,250

Witness a good pissing last Saturday so

849

00:34:15,210 --> 00:34:18,898

no did you invite them in then had a

850

00:34:17,250 --> 00:34:20,730

debate but then I know i arguing with

851

00:34:18,898 --> 00:34:23,339

her about three-quarters of an area

852

00:34:20,730 --> 00:34:24,840

outside the front door so no and how do

853

00:34:23,340 --> 00:34:27,659

you think it went my ultimate life goal

854

00:34:24,840 --> 00:34:29,669

is to convert one well look I have heard

855

00:34:27,659 --> 00:34:31,590

of it happening and basically he

856
00:34:29,668 --> 00:34:34,079
reverted to God is magic and does can't

857
00:34:31,590 --> 00:34:35,669
the explained by science so did you beat

858
00:34:34,079 --> 00:34:37,079
them to a standstill them then they look

859
00:34:35,668 --> 00:34:38,908
at the watch and said we should be

860
00:34:37,079 --> 00:34:41,759
somewhere else pretty much you had to

861
00:34:38,909 --> 00:34:43,320
move on okay I bet you must look forward

862
00:34:41,760 --> 00:34:44,970
to religious representatives coming to

863
00:34:43,320 --> 00:34:46,859
your house I quite enjoy it actually

864
00:34:44,969 --> 00:34:49,289
yeah I'd like I said to my ultimate goal

865
00:34:46,858 --> 00:34:50,819
is to convert one sir well look let us

866
00:34:49,289 --> 00:34:52,949
know put that up on the website yeah

867
00:34:50,820 --> 00:34:56,280
that one mill little bit yeah we'll be

868
00:34:52,949 --> 00:34:58,079
okay thank you i'm here with steve and

869
00:34:56,280 --> 00:34:59,850
move up the wonder dog sniffing at me

870
00:34:58,079 --> 00:35:02,400
because he can smell my dad's cat on me

871
00:34:59,849 --> 00:35:04,858
or something anyway maybe I've been

872
00:35:02,400 --> 00:35:06,869
rolling in bacon again but Steve how do

873
00:35:04,858 --> 00:35:08,639
you defend being a skeptic when when you

874
00:35:06,869 --> 00:35:10,200
eventually come out or you let people

875
00:35:08,639 --> 00:35:11,879
know that you're a part of it people ask

876
00:35:10,199 --> 00:35:13,679
what's that all about and like what'd

877
00:35:11,880 --> 00:35:16,410
you do that for what do you say I

878
00:35:13,679 --> 00:35:19,849
haven't had too much trouble with people

879
00:35:16,409 --> 00:35:21,929
sort of getting aggressive about it but

880
00:35:19,849 --> 00:35:24,779
usually I just tell people the main

881
00:35:21,929 --> 00:35:27,629
reason I'm a skeptic is I'd like to know

882
00:35:24,780 --> 00:35:31,030
how things work and I want to have a

883
00:35:27,630 --> 00:35:34,300
correct understanding of how things work

884

00:35:31,030 --> 00:35:39,930
the main criticism I've ever really had

885
00:35:34,300 --> 00:35:43,330
is not so much at my skepticism but at

886
00:35:39,929 --> 00:35:46,329
how I poopoo things that other people

887
00:35:43,329 --> 00:35:48,039
like I'm told should just let leave

888
00:35:46,329 --> 00:35:50,380
people alone let them think what they

889
00:35:48,039 --> 00:35:53,670
want and that's about being accused of

890
00:35:50,380 --> 00:35:56,110
harshing people's mellow every yes and

891
00:35:53,670 --> 00:35:58,659
that that's probably the only thing I've

892
00:35:56,110 --> 00:36:02,950
really been put on the spot to try and

893
00:35:58,659 --> 00:36:05,319
defend and my defense of that is those

894
00:36:02,949 --> 00:36:07,989
people are allowed to vote so I care

895
00:36:05,320 --> 00:36:12,330
what they believe in I want if people

896
00:36:07,989 --> 00:36:15,969
are going to be able to influence the

897
00:36:12,329 --> 00:36:19,179
government the world around me that I I

898
00:36:15,969 --> 00:36:22,739

want them to be thinking rationally I

899

00:36:19,179 --> 00:36:26,909

don't want to be living in a world where

900

00:36:22,739 --> 00:36:29,139

I'm oppressed because of silly beliefs

901

00:36:26,909 --> 00:36:31,659

that's a tough call I mean for goodness

902

00:36:29,139 --> 00:36:34,029

sake lara bingle has a TV show I mean

903

00:36:31,659 --> 00:36:36,219

really I mean it's an ugly world that

904

00:36:34,030 --> 00:36:39,100

evidence is not often given the way it

905

00:36:36,219 --> 00:36:42,849

should have no it isn't that that's just

906

00:36:39,099 --> 00:36:45,219

how it goes and I'm certainly not in the

907

00:36:42,849 --> 00:36:47,199

camp of saying these people should have

908

00:36:45,219 --> 00:36:50,349

to take an IQ test before they can vote

909

00:36:47,199 --> 00:36:53,949

I think everyone needs to be able to

910

00:36:50,349 --> 00:36:56,079

vote and have their voices heard that I

911

00:36:53,949 --> 00:36:58,480

think it's important to make sure that

912

00:36:56,079 --> 00:37:03,009

those voices speaking the truth is often

913
00:36:58,480 --> 00:37:04,719
as possible how do you defend being a

914
00:37:03,010 --> 00:37:07,030
skeptical when you came out as a skeptic

915
00:37:04,719 --> 00:37:09,730
and it went off what what did you say

916
00:37:07,030 --> 00:37:11,230
when I came out oh my god look she's

917
00:37:09,730 --> 00:37:14,409
she's causing enough trouble as it is

918
00:37:11,230 --> 00:37:15,380
now she's a skeptic well actually it's

919
00:37:14,409 --> 00:37:18,500
really in

920
00:37:15,380 --> 00:37:20,960
because when I discovered skepticism it

921
00:37:18,500 --> 00:37:23,539
was a real revelation to me and I took

922
00:37:20,960 --> 00:37:27,380
to it like a religion and I was very

923
00:37:23,539 --> 00:37:29,960
evangelical and it really didn't go down

924
00:37:27,380 --> 00:37:31,670
well so you know just looking at

925
00:37:29,960 --> 00:37:34,940
people's reactions so that people call

926
00:37:31,670 --> 00:37:36,619
you a Dawkins botherer today no no not

927

00:37:34,940 --> 00:37:38,690
at all it was just you could see the

928

00:37:36,619 --> 00:37:41,269
eyes you know drifting away you can see

929

00:37:38,690 --> 00:37:44,389
them disconnecting you can see that that

930

00:37:41,268 --> 00:37:47,929
they were really engaged in the way I

931

00:37:44,389 --> 00:37:49,670
was and you know we're always talking in

932

00:37:47,929 --> 00:37:51,768
the skeptical community how the win

933

00:37:49,670 --> 00:37:54,470
hearts and minds so it was actually a

934

00:37:51,768 --> 00:37:57,649
really good on the front line example of

935

00:37:54,469 --> 00:38:00,768
how not to do it yo homie evangelical so

936

00:37:57,650 --> 00:38:03,410
I think when people ask me about being a

937

00:38:00,768 --> 00:38:05,298
skeptic I just give them a very straight

938

00:38:03,409 --> 00:38:09,170
explanation of what we do what the

939

00:38:05,298 --> 00:38:14,420
Australian skeptics do I give

940

00:38:09,170 --> 00:38:17,510
a very calm and measured explanation and

941

00:38:14,420 --> 00:38:20,480
I explained also what fun it is and how

942
00:38:17,510 --> 00:38:22,250
interesting it is and you know how we

943
00:38:20,480 --> 00:38:27,949
have a ball and have a really good time

944
00:38:22,250 --> 00:38:29,510
and how we try and do good and in the

945
00:38:27,949 --> 00:38:32,389
health sphere and consumer protection

946
00:38:29,510 --> 00:38:34,309
and what have you and people people are

947
00:38:32,389 --> 00:38:36,529
much more receptive to that I find at

948
00:38:34,309 --> 00:38:39,079
least they listen they take it on board

949
00:38:36,530 --> 00:38:41,180
and I think they're more likely to go

950
00:38:39,079 --> 00:38:42,950
away and look into it do you think maybe

951
00:38:41,179 --> 00:38:44,779
the skeptics need a mascot I mean most

952
00:38:42,949 --> 00:38:46,368
football teams have a mascot I'm not

953
00:38:44,780 --> 00:38:48,859
talking about a cheerleader some sort of

954
00:38:46,369 --> 00:38:50,780
like a big hypodermic or something I

955
00:38:48,858 --> 00:38:53,058

don't know oh I think that would be too

956

00:38:50,780 --> 00:38:55,339

scary I would scare the children even

957

00:38:53,059 --> 00:38:57,140

more yeah I don't know yet look I think

958

00:38:55,338 --> 00:38:59,599

all will work on the issue of a mascot

959

00:38:57,139 --> 00:39:04,159

at a later date yeah good idea it's a

960

00:38:59,599 --> 00:39:06,380

deal well I became a skeptic by wanting

961

00:39:04,159 --> 00:39:08,899

to learn debating techniques and I

962

00:39:06,380 --> 00:39:11,869

googled how to argue and I found the

963

00:39:08,900 --> 00:39:13,910

article written by steven available from

964

00:39:11,869 --> 00:39:15,920

the skeptics guide and it's the articles

965

00:39:13,909 --> 00:39:18,409

been up there for a long time and it's

966

00:39:15,920 --> 00:39:21,289

titled how to argue and that's where I

967

00:39:18,409 --> 00:39:23,838

discovered logical fallacies and that

968

00:39:21,289 --> 00:39:28,730

led me on to reading more and more about

969

00:39:23,838 --> 00:39:30,739

skepticism so to defend the reason i

970
00:39:28,730 --> 00:39:33,019
would say i'm a skip why I'm a skeptic

971
00:39:30,739 --> 00:39:36,649
now is simply I just want to know what's

972
00:39:33,019 --> 00:39:39,409
going on okay my first year at

973
00:39:36,650 --> 00:39:41,570
university i got i went to the

974
00:39:39,409 --> 00:39:45,969
university of new england and

975
00:39:41,570 --> 00:39:49,430
at the age of 16 and the the University

976
00:39:45,969 --> 00:39:53,299
newspaper newspaper that's either a

977
00:39:49,429 --> 00:39:55,190
welcome from the chaplain in which he

978
00:39:53,300 --> 00:39:57,410
said all the usual sort of chaplain

979
00:39:55,190 --> 00:40:02,090
evenings and I instantly wrote in

980
00:39:57,409 --> 00:40:04,190
response okay saying I can't remember

981
00:40:02,090 --> 00:40:06,039
what I said I've let it again decently

982
00:40:04,190 --> 00:40:08,389
and it was quite intelligent our

983
00:40:06,039 --> 00:40:10,610
questioning queering the whole religious

984
00:40:08,389 --> 00:40:15,949
thing this in the University of England

985
00:40:10,610 --> 00:40:18,320
in 1959 was quite startling actually I

986
00:40:15,949 --> 00:40:20,869
think so yeah did I came out quite early

987
00:40:18,320 --> 00:40:22,070
and how did you explain your position to

988
00:40:20,869 --> 00:40:23,539
people then where they're going I'll

989
00:40:22,070 --> 00:40:25,760
look do you have to make so much trouble

990
00:40:23,539 --> 00:40:28,789
was probably something you've got no

991
00:40:25,760 --> 00:40:31,280
actually people don't in Australian

992
00:40:28,789 --> 00:40:35,119
would like to challenge questions and

993
00:40:31,280 --> 00:40:37,610
topics are certainly not there I did

994
00:40:35,119 --> 00:40:39,529
start a nationalist society with the

995
00:40:37,610 --> 00:40:41,870
benefit of it we didn't get very far

996
00:40:39,530 --> 00:40:44,690
with it but I must say the castle ward

997
00:40:41,869 --> 00:40:47,389
who was professor of history noted us

998

00:40:44,690 --> 00:40:49,490
alien historian I'm stopped in the code

999
00:40:47,389 --> 00:40:50,960
in the going down the aisle in the

1000
00:40:49,489 --> 00:40:52,729
history lecture and said were you the

1001
00:40:50,960 --> 00:40:54,889
one who got that and I said yes he said

1002
00:40:52,730 --> 00:40:56,900
good on you and you can do history

1003
00:40:54,889 --> 00:40:58,909
honors even though I failed I should've

1004
00:40:56,900 --> 00:41:01,099
tailed test you seek approval from

1005
00:40:58,909 --> 00:41:03,078
authority it was day two people because

1006
00:41:01,099 --> 00:41:04,788
they view people there

1007
00:41:03,079 --> 00:41:06,589
we're able to say that sort of thing I

1008
00:41:04,789 --> 00:41:08,569
think and what is the best way to sum up

1009
00:41:06,588 --> 00:41:14,509
things skeptic when people do ask you in

1010
00:41:08,568 --> 00:41:16,699
one sentence is there one just using

1011
00:41:14,509 --> 00:41:19,909
your intelligence to question the sort

1012
00:41:16,699 --> 00:41:24,379

of things that other people are very

1013

00:41:19,909 --> 00:41:26,358

definite about given the in the case of

1014

00:41:24,380 --> 00:41:29,630

religion for example given the fact that

1015

00:41:26,358 --> 00:41:32,150

I think God has got a real problem with

1016

00:41:29,630 --> 00:41:33,499

PR with public relations because he

1017

00:41:32,150 --> 00:41:36,528

hasn't actually made it quite clear

1018

00:41:33,498 --> 00:41:39,108

which version of God that every so many

1019

00:41:36,528 --> 00:41:41,630

people are so fundamentally sure about

1020

00:41:39,108 --> 00:41:43,608

is actually the accurate one so i think

1021

00:41:41,630 --> 00:41:47,329

an Almighty God who can't actually get

1022

00:41:43,608 --> 00:41:51,588

his message out there clearly isn't what

1023

00:41:47,329 --> 00:41:52,999

we were very convincing yet yes well as

1024

00:41:51,588 --> 00:41:55,849

considerable difference between the

1025

00:41:52,998 --> 00:41:59,088

Lutheran Church and Islam for example

1026

00:41:55,849 --> 00:42:00,469

precisely that and so you know I mean an

1027
00:41:59,088 --> 00:42:02,268
Almighty God ought to be able to at

1028
00:42:00,469 --> 00:42:04,880
least be fairly clear about what his

1029
00:42:02,268 --> 00:42:07,098
messages and he's not so that's in the

1030
00:42:04,880 --> 00:42:11,630
terms of religion but father subjects to

1031
00:42:07,099 --> 00:42:13,609
I think you know there's just and I

1032
00:42:11,630 --> 00:42:16,608
understand that people want to hang on

1033
00:42:13,608 --> 00:42:19,518
opinions out of that feelings out of

1034
00:42:16,608 --> 00:42:21,798
emotions and some but when there's so

1035
00:42:19,518 --> 00:42:23,988
many contradictions going I've got a

1036
00:42:21,798 --> 00:42:27,318
brain I want to use it and I want to be

1037
00:42:23,989 --> 00:42:28,400
able to work it out for myself look

1038
00:42:27,318 --> 00:42:30,139
we've got a visitor from Melbourne here

1039
00:42:28,400 --> 00:42:31,309
who's enjoying our skeptics in the pub

1040
00:42:30,139 --> 00:42:33,798
it's all happening at the coronation

1041
00:42:31,309 --> 00:42:34,910
hotel here right now we've got little

1042
00:42:33,798 --> 00:42:37,099
sorts of things happening that I can't

1043
00:42:34,909 --> 00:42:39,139
describe jus cuz radio best you imagine

1044
00:42:37,099 --> 00:42:41,329
it with the theater of your mind John

1045
00:42:39,139 --> 00:42:42,920
how do you defend being a skeptic when

1046
00:42:41,329 --> 00:42:47,710
people when you come out to people about

1047
00:42:42,920 --> 00:42:51,099
being one I don't know that actually

1048
00:42:47,710 --> 00:42:53,470
I've never really get challenged by it I

1049
00:42:51,099 --> 00:42:57,820
think largely most of the people i

1050
00:42:53,469 --> 00:42:59,500
associated with of a similar bent I'm a

1051
00:42:57,820 --> 00:43:01,900
geek so I hang out with other geeks and

1052
00:42:59,500 --> 00:43:03,719
most geeks are while they're highly

1053
00:43:01,900 --> 00:43:06,338
opinionated they generally respect

1054
00:43:03,719 --> 00:43:08,379
critical thinking they might not have

1055

00:43:06,338 --> 00:43:10,119
put all the time I don't know it all the

1056
00:43:08,380 --> 00:43:13,059
time but when they see it in action

1057
00:43:10,119 --> 00:43:14,619
though generally appreciate it okay is

1058
00:43:13,059 --> 00:43:15,880
there a simple way you could sum it up

1059
00:43:14,619 --> 00:43:22,809
when people ask you what it's all about

1060
00:43:15,880 --> 00:43:27,309
I usually avoid the question like I'm

1061
00:43:22,809 --> 00:43:29,289
doing right now but you get quite and

1062
00:43:27,309 --> 00:43:32,529
it's understandable it can just link it

1063
00:43:29,289 --> 00:43:36,639
can lead to like awkward silences or you

1064
00:43:32,530 --> 00:43:41,349
know value judgments hmm yes I do that a

1065
00:43:36,639 --> 00:43:42,879
lot mmm yes right now now when when you

1066
00:43:41,349 --> 00:43:45,519
tell people are skeptical you come out

1067
00:43:42,880 --> 00:43:47,260
as a skeptic and people go what's that

1068
00:43:45,519 --> 00:43:49,960
it's been strange and he defended oh and

1069
00:43:47,260 --> 00:43:51,910

your drinks behind you by the way our

1070

00:43:49,960 --> 00:43:55,780

interviewee is now getting in a glass of

1071

00:43:51,909 --> 00:43:57,730

red wine yes I don't actually really

1072

00:43:55,780 --> 00:44:01,170

have to defend it very much I mean I'm

1073

00:43:57,730 --> 00:44:04,960

very obviously a skeptic all the time so

1074

00:44:01,170 --> 00:44:07,800

I've really become a lot more aggressive

1075

00:44:04,960 --> 00:44:10,659

about not putting up with any

1076

00:44:07,800 --> 00:44:13,210

and what is the common bullcrap that you

1077

00:44:10,659 --> 00:44:15,309

are confronted with on a regular basis

1078

00:44:13,210 --> 00:44:17,559

mainly religious crap but that you know

1079

00:44:15,309 --> 00:44:19,630

you do get the climate science crap and

1080

00:44:17,559 --> 00:44:23,349

then you know a bit of the vaccination

1081

00:44:19,630 --> 00:44:25,930

breck quite a lot of arm acupuncture

1082

00:44:23,349 --> 00:44:27,460

crap now is lot of us in the workplace

1083

00:44:25,929 --> 00:44:31,899

at all I even a workplace where this

1084
00:44:27,460 --> 00:44:33,820
happen no I go to uni and so you would

1085
00:44:31,900 --> 00:44:35,680
be surprised how many people leave their

1086
00:44:33,820 --> 00:44:37,210
brains at the gauge of the universe

1087
00:44:35,679 --> 00:44:39,068
but it's how you normally get a high

1088
00:44:37,210 --> 00:44:42,210
distinction in an essay isn't it i know

1089
00:44:39,068 --> 00:44:46,989
i know i'm finding quite quite difficult

1090
00:44:42,210 --> 00:44:49,960
rationalizing there being in university

1091
00:44:46,989 --> 00:44:51,129
in training and and all this extra

1092
00:44:49,960 --> 00:44:52,809
knowledge that they should be gaining

1093
00:44:51,130 --> 00:44:55,390
and then they still believe all this

1094
00:44:52,809 --> 00:44:56,890
stupid stuff you think it's because this

1095
00:44:55,389 --> 00:44:58,598
knowledge is being sort of enforced upon

1096
00:44:56,889 --> 00:45:00,279
them and they're thinking that there's

1097
00:44:58,599 --> 00:45:03,269
some alternative that isn't as

1098
00:45:00,280 --> 00:45:05,950
regimented that they've seek yeah not

1099
00:45:03,269 --> 00:45:07,989
boy have to be used to think of that

1100
00:45:05,949 --> 00:45:10,480
sentence okay it was beautiful sentence

1101
00:45:07,989 --> 00:45:13,929
too but no no I think what happens

1102
00:45:10,480 --> 00:45:16,780
especially in the gain of religion is in

1103
00:45:13,929 --> 00:45:19,690
particular is the training sort of seats

1104
00:45:16,780 --> 00:45:22,059
engine and so young that they just can't

1105
00:45:19,690 --> 00:45:23,889
think of any think in any other manner

1106
00:45:22,059 --> 00:45:26,319
and they really they really have a hard

1107
00:45:23,889 --> 00:45:27,578
time sort of thinking rationally about

1108
00:45:26,318 --> 00:45:30,279
it they can think rationally about

1109
00:45:27,579 --> 00:45:32,140
everything else in life but that is a

1110
00:45:30,280 --> 00:45:33,460
one-sentence it explained skepticism

1111
00:45:32,139 --> 00:45:42,269
when you've got to explain to people

1112

00:45:33,460 --> 00:45:46,358
quickly um it oh let me think using

1113
00:45:42,269 --> 00:45:48,730
science and rationality to figure out

1114
00:45:46,358 --> 00:45:50,000
the world place but it's would be one

1115
00:45:48,730 --> 00:45:53,240
way

1116
00:45:50,000 --> 00:45:55,190
okay look things are having this

1117
00:45:53,239 --> 00:45:56,539
controversial action at the bar some

1118
00:45:55,190 --> 00:45:58,250
people are having vodka Norns other

1119
00:45:56,539 --> 00:45:59,869
having vodka and cranberry in fact

1120
00:45:58,250 --> 00:46:02,210
there's a vodka schism going on at the

1121
00:45:59,869 --> 00:46:03,829
bar as we talk but look how you do not

1122
00:46:02,210 --> 00:46:05,659
you enjoying skeptic to the pub very

1123
00:46:03,829 --> 00:46:09,289
much say yes now when people come up to

1124
00:46:05,659 --> 00:46:10,549
you and you come out as a skeptic what

1125
00:46:09,289 --> 00:46:12,800
know how do you explain it when you had

1126
00:46:10,550 --> 00:46:13,789

to defend it the biggest challenge is

1127

00:46:12,800 --> 00:46:15,830

actually saying that it's not about

1128

00:46:13,789 --> 00:46:17,750

denying everything not about doubting

1129

00:46:15,829 --> 00:46:19,069

everything it's actually about looking

1130

00:46:17,750 --> 00:46:20,179

for the things that might be true and

1131

00:46:19,070 --> 00:46:21,620

that's the thing it really interested me

1132

00:46:20,179 --> 00:46:25,039

I enjoyed science fiction if they think

1133

00:46:21,619 --> 00:46:27,619

what could be true and one thing to look

1134

00:46:25,039 --> 00:46:29,300

at could be true but isn't it amazing to

1135

00:46:27,619 --> 00:46:31,400

think about what actually is true and

1136

00:46:29,300 --> 00:46:34,430

what the end of the day you can have

1137

00:46:31,400 --> 00:46:37,309

things that are potentials and you could

1138

00:46:34,429 --> 00:46:38,929

back up a tree and deal yeah happy with

1139

00:46:37,309 --> 00:46:40,250

that or you can actually find something

1140

00:46:38,929 --> 00:46:42,019

it is true and it's just so much more

1141
00:46:40,250 --> 00:46:43,789
fascinating because often the things

1142
00:46:42,019 --> 00:46:45,889
that go into making that up is so much

1143
00:46:43,789 --> 00:46:47,509
more intricate and the details are just

1144
00:46:45,889 --> 00:46:48,980
where your mind away well what's an

1145
00:46:47,510 --> 00:46:52,010
example you give people go on for

1146
00:46:48,980 --> 00:46:54,530
example this and they'll go home I had

1147
00:46:52,010 --> 00:46:56,420
an argument the other day about the

1148
00:46:54,530 --> 00:46:59,660
effect the moon can have on people and

1149
00:46:56,420 --> 00:47:00,980
it was a big moon in the left of work

1150
00:46:59,659 --> 00:47:03,349
and I said I had a headache and someone

1151
00:47:00,980 --> 00:47:04,550
said I it's that damn moon and I will

1152
00:47:03,349 --> 00:47:06,170
show you in a lift you when I got about

1153
00:47:04,550 --> 00:47:08,480
a minute at the most if second elevator

1154
00:47:06,170 --> 00:47:12,260
talk about to say it's interesting by

1155
00:47:08,480 --> 00:47:13,820
what mechanism and I set up yeah gravity

1156
00:47:12,260 --> 00:47:16,820
and tides and all that was like yeah

1157
00:47:13,820 --> 00:47:19,640
well don't you think it would be a bit

1158
00:47:16,820 --> 00:47:21,860
of trouble considering the volume of the

1159
00:47:19,639 --> 00:47:24,739
earth the fact that moves about and meet

1160
00:47:21,860 --> 00:47:26,660
us at tide times whatever that would

1161
00:47:24,739 --> 00:47:28,789
have on your cellular level of your body

1162
00:47:26,659 --> 00:47:31,039
I think it's much more likely that I've

1163
00:47:28,789 --> 00:47:33,139
got no light in my office the fact that

1164
00:47:31,039 --> 00:47:34,789
I had a very poor night's sleep and that

1165
00:47:33,139 --> 00:47:36,769
I actually was sick three days ago that

1166
00:47:34,789 --> 00:47:37,789
I've got a headache and you're out too

1167
00:47:36,769 --> 00:47:40,579
late in the morning and you came

1168
00:47:37,789 --> 00:47:42,079
straight from the bar exactly those are

1169

00:47:40,579 --> 00:47:43,579
things that you've got to factor into

1170
00:47:42,079 --> 00:47:45,559
this and then how do you describe

1171
00:47:43,579 --> 00:47:47,119
skepticism in one sentence when people

1172
00:47:45,559 --> 00:47:50,509
ask you what's it all about and you've

1173
00:47:47,119 --> 00:47:52,539
got a one cent oh that's a toughy a lot

1174
00:47:50,510 --> 00:47:55,280
of people use the word evidence comes up

1175
00:47:52,539 --> 00:47:56,989
rationality science all those words come

1176
00:47:55,280 --> 00:47:59,840
up but what's the one you use

1177
00:47:56,989 --> 00:48:03,618
trying to figure out what's the right

1178
00:47:59,840 --> 00:48:07,730
thing to believe and when to stop

1179
00:48:03,619 --> 00:48:09,619
believing that's good god I'm just here

1180
00:48:07,730 --> 00:48:11,389
with dr. hu in a quieter area of the pub

1181
00:48:09,619 --> 00:48:12,650
how are you I'm good may not how are you

1182
00:48:11,389 --> 00:48:15,170
how do you find look a lot of people ask

1183
00:48:12,650 --> 00:48:16,940

me that Maynard what is what's going on

1184

00:48:15,170 --> 00:48:18,889

inside your head ok here this is this is

1185

00:48:16,940 --> 00:48:20,720

most people most people's most people's

1186

00:48:18,889 --> 00:48:23,980

head it's kind of like this my head's

1187

00:48:20,719 --> 00:48:23,980

like this it's like opening this door

1188

00:48:26,199 --> 00:48:30,500

that was like a journey into my mind for

1189

00:48:28,460 --> 00:48:32,300

a moment so that was like um when a

1190

00:48:30,500 --> 00:48:34,340

pinball machine has one pinball that's

1191

00:48:32,300 --> 00:48:36,890

going bing-bong bing-bong bing-bong yeah

1192

00:48:34,340 --> 00:48:38,180

or in the Simpsons when the monkey just

1193

00:48:36,889 --> 00:48:40,219

banging the cymbals together in their

1194

00:48:38,179 --> 00:48:42,500

spanks Spanish fleas playing it on his

1195

00:48:40,219 --> 00:48:44,449

head that's what's going on here dr.

1196

00:48:42,500 --> 00:48:46,039

Reggie when people when you come out as

1197

00:48:44,449 --> 00:48:47,359

a skeptic when you originally did when

1198
00:48:46,039 --> 00:48:48,529
you mention you're a skeptic and people

1199
00:48:47,360 --> 00:48:49,910
get on one side about what are you dare

1200
00:48:48,530 --> 00:48:52,000
for it what do you know how to use only

1201
00:48:49,909 --> 00:48:54,319
defend or mention explain it to people

1202
00:48:52,000 --> 00:48:56,480
well I don't know I guess I mean I'm a

1203
00:48:54,320 --> 00:48:58,160
scientist as well so actually I'm

1204
00:48:56,480 --> 00:49:00,170
professionally a skeptic if you like

1205
00:48:58,159 --> 00:49:01,759
because what I'm trained to do and what

1206
00:49:00,170 --> 00:49:05,090
I do every day is analyze information

1207
00:49:01,760 --> 00:49:07,790
and look for the evidence and that's the

1208
00:49:05,090 --> 00:49:09,289
same as what I do as a skeptic so I

1209
00:49:07,789 --> 00:49:11,920
don't really have to defend it because

1210
00:49:09,289 --> 00:49:15,409
that's what I rely on for my profession

1211
00:49:11,920 --> 00:49:17,329
and in terms of I guess with respect to

1212
00:49:15,409 --> 00:49:19,759
doing it in my spare time it's more

1213
00:49:17,329 --> 00:49:22,909
about consumer protection and just being

1214
00:49:19,760 --> 00:49:25,340
aware of scams and people getting ripped

1215
00:49:22,909 --> 00:49:27,469
off and that sort of thing so being able

1216
00:49:25,340 --> 00:49:30,740
to differentiate between what is maybe a

1217
00:49:27,469 --> 00:49:33,079
scam and what is true and just to avoid

1218
00:49:30,739 --> 00:49:34,759
getting ripped off basically and where

1219
00:49:33,079 --> 00:49:36,230
does it happen with when you get the

1220
00:49:34,760 --> 00:49:37,790
politics around into it because I ramas

1221
00:49:36,230 --> 00:49:39,710
talking today about you know evidence

1222
00:49:37,789 --> 00:49:41,869
and he mentioned that politics is not

1223
00:49:39,710 --> 00:49:43,550
evidence-based and their outcomes are

1224
00:49:41,869 --> 00:49:46,190
certainly not based on what is right or

1225
00:49:43,550 --> 00:49:48,019
scientifically proven that's where you

1226

00:49:46,190 --> 00:49:49,550
know I'm various it about conspiracies

1227
00:49:48,019 --> 00:49:53,599
and things like that because they are

1228
00:49:49,550 --> 00:49:56,210
generated from non-scientific thinking

1229
00:49:53,599 --> 00:49:57,440
mmm because species are so much fun you

1230
00:49:56,210 --> 00:49:59,088
know I think that's that's the

1231
00:49:57,440 --> 00:50:02,269
difference because

1232
00:49:59,088 --> 00:50:04,548
I mean it's so I think it's just a human

1233
00:50:02,268 --> 00:50:07,399
trait it's a human frailty thing to love

1234
00:50:04,548 --> 00:50:08,690
conspiracies until of gossip and to love

1235
00:50:07,400 --> 00:50:10,278
the idea that there's something weird

1236
00:50:08,690 --> 00:50:11,838
going on and I you know even though I am

1237
00:50:10,278 --> 00:50:13,789
a scientist a skeptic it doesn't mean

1238
00:50:11,838 --> 00:50:15,978
I'm completely immune to that stuff I

1239
00:50:13,789 --> 00:50:18,920
love that stuff to you know I mean I I

1240
00:50:15,978 --> 00:50:20,239

watched the the lunar the partial lunar

1241
00:50:18,920 --> 00:50:21,650
eclipse the other night and I thought it

1242
00:50:20,239 --> 00:50:22,969
was cool and maybe there's aliens up

1243
00:50:21,650 --> 00:50:25,130
there and they probably aren't but you

1244
00:50:22,969 --> 00:50:26,809
know be nice if there were and look I

1245
00:50:25,130 --> 00:50:28,489
like that spaceship that's as big as a

1246
00:50:26,809 --> 00:50:31,160
planet that keeps popping around the Sun

1247
00:50:28,489 --> 00:50:32,269
that NASA refuses to admits there do you

1248
00:50:31,159 --> 00:50:34,969
mean the one that went around the Sun

1249
00:50:32,268 --> 00:50:37,038
just yesterday may not be that one look

1250
00:50:34,969 --> 00:50:38,869
no nothing to do with banana Rama's

1251
00:50:37,039 --> 00:50:41,479
anniversary of Venus that's right

1252
00:50:38,869 --> 00:50:44,479
because because it's 30 years since

1253
00:50:41,478 --> 00:50:46,728
Bananarama formed and produced their

1254
00:50:44,478 --> 00:50:48,399
first beautiful album deep-sea skiving

1255
00:50:46,728 --> 00:50:51,348
which I have a vinyl copy of at home

1256
00:50:48,400 --> 00:50:53,568
Venus went past the Sun wasn't that

1257
00:50:51,349 --> 00:50:54,979
convenient and how lovely of Venus to do

1258
00:50:53,568 --> 00:50:56,298
that for us although that's not my

1259
00:50:54,978 --> 00:50:57,618
favorite song that I want you back is

1260
00:50:56,298 --> 00:51:02,179
actually my favorite song from but I

1261
00:50:57,619 --> 00:51:04,099
want you back to have to do back top

1262
00:51:02,179 --> 00:51:05,778
it's been it's better than anything that

1263
00:51:04,099 --> 00:51:08,298
buddy Howard Jones did and I know you

1264
00:51:05,778 --> 00:51:10,548
many gnarly look this is where we we

1265
00:51:08,298 --> 00:51:12,949
have to part ways baby kids city and

1266
00:51:10,548 --> 00:51:15,498
there's no way we can we can prove by

1267
00:51:12,949 --> 00:51:16,818
using evidence-based science that no

1268
00:51:15,498 --> 00:51:18,439
banana Rama is actually better than

1269
00:51:16,818 --> 00:51:20,088
Howard Jones we can't do that no there's

1270
00:51:18,440 --> 00:51:22,548
no way except I could say you're wrong

1271
00:51:20,088 --> 00:51:24,170
unequivocally there we go okay and for

1272
00:51:22,548 --> 00:51:25,849
people to ask you in one sentence what

1273
00:51:24,170 --> 00:51:27,170
skepticism about and why you're part of

1274
00:51:25,849 --> 00:51:28,969
it what do you tell people dr. Wright

1275
00:51:27,170 --> 00:51:31,519
use it to give them a big glass of shut

1276
00:51:28,969 --> 00:51:32,929
up juice to give them shut up juice no I

1277
00:51:31,518 --> 00:51:34,518
don't want them to have shot juice I

1278
00:51:32,929 --> 00:51:38,239
want them to know it's about looking at

1279
00:51:34,518 --> 00:51:41,088
ghosties and aliens and big cats that

1280
00:51:38,239 --> 00:51:43,670
walk around the hunter and haunted

1281
00:51:41,088 --> 00:51:45,949
houses and stuff that's really fantastic

1282
00:51:43,670 --> 00:51:47,778
and fascinating and working out how it

1283

00:51:45,949 --> 00:51:51,318
actually works it's about how things

1284
00:51:47,778 --> 00:51:53,748
work which is cool and fun and I got

1285
00:51:51,318 --> 00:51:55,960
sent a paw print from Cessnock I've just

1286
00:51:53,748 --> 00:51:58,218
been examining that today may not and I

1287
00:51:55,960 --> 00:52:00,829
passed some comment on that looks like

1288
00:51:58,219 --> 00:52:02,420
it may be a canine print well I don't

1289
00:52:00,829 --> 00:52:04,039
know if you saw the thread but there was

1290
00:52:02,420 --> 00:52:05,389
a few people discussing that because

1291
00:52:04,039 --> 00:52:07,849
Richard forwarded it to the committee

1292
00:52:05,389 --> 00:52:09,288
and it was amazing how people analyze

1293
00:52:07,849 --> 00:52:10,850
that there was someone from the

1294
00:52:09,289 --> 00:52:12,260
Australian Museum you had a look at

1295
00:52:10,849 --> 00:52:17,179
and said well it's not a cat because

1296
00:52:12,260 --> 00:52:18,800
cats can I eccentric their claws that's

1297
00:52:17,179 --> 00:52:21,230

the way the clear the claw was extended

1298

00:52:18,800 --> 00:52:22,880

the claw is extended and cats don't run

1299

00:52:21,230 --> 00:52:27,230

like that the only thing that can't

1300

00:52:22,880 --> 00:52:28,760

retract Klaus is is it a Jaguar or well

1301

00:52:27,230 --> 00:52:30,409

it's going to be on the website next

1302

00:52:28,760 --> 00:52:31,940

week but where is that photo at the

1303

00:52:30,409 --> 00:52:34,099

moment with the skipper well it's it's

1304

00:52:31,940 --> 00:52:36,260

on flickr I just we just looked at on

1305

00:52:34,099 --> 00:52:37,610

flickr don't you look when you win when

1306

00:52:36,260 --> 00:52:38,780

we release this to the public even

1307

00:52:37,610 --> 00:52:40,130

though the guy himself doesn't think

1308

00:52:38,780 --> 00:52:42,500

it's a big caddy they get some sort of

1309

00:52:40,130 --> 00:52:43,670

been told know anything's to be dog well

1310

00:52:42,500 --> 00:52:45,139

I thought it was fun I mean it was

1311

00:52:43,670 --> 00:52:47,480

really fascinating but the thing is it

1312
00:52:45,139 --> 00:52:50,000
was a paw print in the sand in isolation

1313
00:52:47,480 --> 00:52:51,800
so it's really difficult to know i mean

1314
00:52:50,000 --> 00:52:53,659
if there was a cat you would expect to

1315
00:52:51,800 --> 00:52:55,190
see like a big cat you spent to see a

1316
00:52:53,659 --> 00:52:57,859
few of them so you can see what it was

1317
00:52:55,190 --> 00:53:00,710
moving maybe some poo would be nice

1318
00:52:57,860 --> 00:53:02,059
maybe a dead carcass because apparently

1319
00:53:00,710 --> 00:53:04,400
these reports have been circulating for

1320
00:53:02,059 --> 00:53:05,449
more than 20 years now so if that's true

1321
00:53:04,400 --> 00:53:07,550
there must be a breeding population

1322
00:53:05,449 --> 00:53:09,710
somewhere main are so where's the dead

1323
00:53:07,550 --> 00:53:11,630
cats and of course at this state I

1324
00:53:09,710 --> 00:53:14,420
must mention that I was handing out like

1325
00:53:11,630 --> 00:53:16,519
crazy a DVD i made it skeptic camp which

1326
00:53:14,420 --> 00:53:18,050
featured a scottish science program for

1327
00:53:16,519 --> 00:53:20,239
children called Nina and the neurons

1328
00:53:18,050 --> 00:53:22,039
which did have a lot of poo in it and

1329
00:53:20,239 --> 00:53:23,599
just got the Scottish accent because it

1330
00:53:22,039 --> 00:53:25,730
was a lot of all about the digestion

1331
00:53:23,599 --> 00:53:29,719
system and they demonstrated fiber by

1332
00:53:25,730 --> 00:53:31,340
trying to go down a ski ramp with a

1333
00:53:29,719 --> 00:53:33,319
rubber mat and it didn't go and they put

1334
00:53:31,340 --> 00:53:34,730
one with a fibrous mat and they are slid

1335
00:53:33,320 --> 00:53:36,740
down there and that's how they explain

1336
00:53:34,730 --> 00:53:38,240
it and hook ship you she said it was

1337
00:53:36,739 --> 00:53:39,529
Scottish action so if you watched it yet

1338
00:53:38,239 --> 00:53:41,179
because that's science education you

1339
00:53:39,530 --> 00:53:43,070
know I haven't I haven't seen as I've

1340

00:53:41,179 --> 00:53:45,049
told people I reckon dr. Rach you could

1341
00:53:43,070 --> 00:53:46,280
host need it in the neurons you got to

1342
00:53:45,050 --> 00:53:48,620
put your head into pigtails and away you

1343
00:53:46,280 --> 00:53:50,900
go I haven't watched it yet but perhaps

1344
00:53:48,619 --> 00:53:52,489
I can over this weekend which is going

1345
00:53:50,900 --> 00:53:54,440
to be the Queen's birthday weekend I'll

1346
00:53:52,489 --> 00:53:56,209
have some time Maynard look I'm going to

1347
00:53:54,440 --> 00:53:58,240
watch a drag show just to celebrate it

1348
00:53:56,210 --> 00:54:00,230
look thank for your time dr. Reggie and

1349
00:53:58,239 --> 00:54:01,819
the question I have been asking people

1350
00:54:00,230 --> 00:54:03,289
here tonight is how do you defend you

1351
00:54:01,820 --> 00:54:05,059
feel yourself as a skeptic when you

1352
00:54:03,289 --> 00:54:07,610
mention you're a skeptic and you come

1353
00:54:05,059 --> 00:54:08,960
out as a skeptic until you are then how

1354
00:54:07,610 --> 00:54:11,240

do you normally I'm being the president

1355

00:54:08,960 --> 00:54:14,510

this is going to come up fairly often it

1356

00:54:11,239 --> 00:54:16,039

comes up very often yes I must admit and

1357

00:54:14,510 --> 00:54:17,840

don't feel a need to defend myself

1358

00:54:16,039 --> 00:54:21,469

people ask questions people are usually

1359

00:54:17,840 --> 00:54:23,840

very respectful they ask questions they

1360

00:54:21,469 --> 00:54:27,409

might you know sneak a

1361

00:54:23,840 --> 00:54:30,200

bit of a you know smile or something you

1362

00:54:27,409 --> 00:54:31,519

know they okay then what do you think

1363

00:54:30,199 --> 00:54:33,649

about homeopathy or what do you think

1364

00:54:31,519 --> 00:54:35,000

about the moon landing and the way they

1365

00:54:33,650 --> 00:54:36,920

say that does that does that mean

1366

00:54:35,000 --> 00:54:38,449

they're thinking he's a troublemaker oh

1367

00:54:36,920 --> 00:54:39,980

they definitely think I'm a troublemaker

1368

00:54:38,449 --> 00:54:42,829

and they'd be absolutely right about

1369
00:54:39,980 --> 00:54:44,929
that of course but I don't generally

1370
00:54:42,829 --> 00:54:47,869
feel I need to defend myself people are

1371
00:54:44,929 --> 00:54:50,989
more often curious about what it means

1372
00:54:47,869 --> 00:54:53,509
and what I'm the most the question I get

1373
00:54:50,989 --> 00:54:55,699
most is what are you skeptical about and

1374
00:54:53,510 --> 00:54:57,830
I really have to explain that I'm not

1375
00:54:55,699 --> 00:54:59,960
skeptical about anything that it's a

1376
00:54:57,829 --> 00:55:02,090
more matter of approach about seeking

1377
00:54:59,960 --> 00:55:05,000
the evidence and about making decisions

1378
00:55:02,090 --> 00:55:06,170
based based on that evidence and also

1379
00:55:05,000 --> 00:55:09,079
not forming an opinion without

1380
00:55:06,170 --> 00:55:11,750
sufficient evidence so I don't feel very

1381
00:55:09,079 --> 00:55:14,179
often that i'm attacked except when we

1382
00:55:11,750 --> 00:55:16,159
actually speak to water or what i would

1383
00:55:14,179 --> 00:55:17,059
call our cultural adversaries things

1384
00:55:16,159 --> 00:55:20,960
like you know people like the

1385
00:55:17,059 --> 00:55:22,880
anti-vaxxers and what about tom there

1386
00:55:20,960 --> 00:55:25,550
have been a few cases in scientific

1387
00:55:22,880 --> 00:55:26,840
study where and this is quite a serious

1388
00:55:25,550 --> 00:55:29,450
one I've got here which doesn't usually

1389
00:55:26,840 --> 00:55:31,430
come from me you're talking about a lot

1390
00:55:29,449 --> 00:55:35,299
of research into pain has come from rats

1391
00:55:31,429 --> 00:55:36,500
yes and there was a lot done by German

1392
00:55:35,300 --> 00:55:38,480
scientists during the Second World War

1393
00:55:36,500 --> 00:55:40,599
on Jewish prisoners which did advance

1394
00:55:38,480 --> 00:55:42,889
science to a certain level because those

1395
00:55:40,599 --> 00:55:44,900
experiments are so unthinkable you could

1396
00:55:42,889 --> 00:55:47,329
never do them on people ethically and

1397

00:55:44,900 --> 00:55:49,130
that knowledge had to be absorbed into

1398
00:55:47,329 --> 00:55:50,420
the science literature now how do you

1399
00:55:49,130 --> 00:55:52,400
feel about that because there has been

1400
00:55:50,420 --> 00:55:53,809
some done on people and should that

1401
00:55:52,400 --> 00:55:55,400
knowledge be locked out because it was

1402
00:55:53,809 --> 00:55:59,750
just because the ethical way it was done

1403
00:55:55,400 --> 00:56:01,700
unethical I was done it's I this is a

1404
00:55:59,750 --> 00:56:05,289
bit of a personal matter for me mo had

1405
00:56:01,699 --> 00:56:07,509
family who were killed by the Germans I

1406
00:56:05,289 --> 00:56:09,920
don't know that any of them had

1407
00:56:07,510 --> 00:56:12,320
experiments done on them but they were

1408
00:56:09,920 --> 00:56:15,110
definitely perished in the Holocaust

1409
00:56:12,320 --> 00:56:17,059
murdered in the Holocaust it's a

1410
00:56:15,110 --> 00:56:19,039
difficult one you know I think you know

1411
00:56:17,059 --> 00:56:20,599

in one sense you might say the

1412
00:56:19,039 --> 00:56:23,210
information is already there not to use

1413
00:56:20,599 --> 00:56:25,369
it would be contrary to the would be

1414
00:56:23,210 --> 00:56:28,340
disrespectful to the victims on the

1415
00:56:25,369 --> 00:56:30,940
other hand if you use it it's it's

1416
00:56:28,340 --> 00:56:32,840
almost like it's dirty information so i

1417
00:56:30,940 --> 00:56:35,990
don't know it's a difficult one i must

1418
00:56:32,840 --> 00:56:36,390
say i don't have a clear opinion on that

1419
00:56:35,989 --> 00:56:40,139
I'd

1420
00:56:36,389 --> 00:56:43,048
no that a clear opinion is actually

1421
00:56:40,139 --> 00:56:44,548
possible except me to say I'm sorry more

1422
00:56:43,048 --> 00:56:45,690
than you know I apologize to pop it on

1423
00:56:44,548 --> 00:56:47,730
you because because when you mentioned

1424
00:56:45,690 --> 00:56:49,829
pain I remembered back to those

1425
00:56:47,730 --> 00:56:51,710
experiments are read about and how a lot

1426
00:56:49,829 --> 00:56:54,539
of that has been used in high altitude

1427
00:56:51,710 --> 00:56:56,278
theory particularly post the war when

1428
00:56:54,539 --> 00:56:57,839
the Americans were going up high and I

1429
00:56:56,278 --> 00:56:59,518
just think it that there's an

1430
00:56:57,838 --> 00:57:02,940
interesting quandary for science because

1431
00:56:59,518 --> 00:57:05,129
it's it's it's not bad science but it is

1432
00:57:02,940 --> 00:57:06,838
bad behavior yeah but a lot of a lot of

1433
00:57:05,130 --> 00:57:08,068
fez oily was a lot of it was also bad

1434
00:57:06,838 --> 00:57:09,679
science because they believed for

1435
00:57:08,068 --> 00:57:11,759
example the jews were different

1436
00:57:09,679 --> 00:57:13,348
biologically and you know that certain

1437
00:57:11,760 --> 00:57:15,180
things some of their science was simply

1438
00:57:13,349 --> 00:57:17,250
crap science because of because of their

1439
00:57:15,179 --> 00:57:19,618
ideology and we've seen that where I

1440
00:57:17,250 --> 00:57:21,239
ideology or we will always kill science

1441
00:57:19,619 --> 00:57:23,640
and I just mentioned that you talk and

1442
00:57:21,239 --> 00:57:25,318
that politics is not evidence-based we

1443
00:57:23,639 --> 00:57:27,150
see that where Pollock politician will

1444
00:57:25,318 --> 00:57:30,449
generally ignore evidence when it suits

1445
00:57:27,150 --> 00:57:32,400
them so I politics is its own problem in

1446
00:57:30,449 --> 00:57:34,108
terms of what you've just mentioned

1447
00:57:32,400 --> 00:57:36,139
which is very difficult question I think

1448
00:57:34,108 --> 00:57:38,190
after the war there were a lot of

1449
00:57:36,139 --> 00:57:40,078
scientists and scientific organizations

1450
00:57:38,190 --> 00:57:43,679
that made a conscious decision not to

1451
00:57:40,079 --> 00:57:45,329
use this this data so it's not like you

1452
00:57:43,679 --> 00:57:47,518
know some information was used some of

1453
00:57:45,329 --> 00:57:49,380
the data was used but a lot of it wasn't

1454

00:57:47,518 --> 00:57:51,808
and never will be you know a lot of it

1455
00:57:49,380 --> 00:57:53,369
was lost but you also have to how do you

1456
00:57:51,809 --> 00:57:55,410
distinguish between water was bad

1457
00:57:53,369 --> 00:57:56,849
science based on ideology and what

1458
00:57:55,409 --> 00:57:58,739
wasn't a so there are all kinds of

1459
00:57:56,849 --> 00:58:01,650
practical questions about that as well

1460
00:57:58,739 --> 00:58:03,149
as the legitimate moral questions about

1461
00:58:01,650 --> 00:58:06,450
whether you use the results of such

1462
00:58:03,150 --> 00:58:09,539
heinous heinous crimes and and again

1463
00:58:06,449 --> 00:58:11,219
this comes up with questions like leaps

1464
00:58:09,539 --> 00:58:12,720
like the atomic bomb and the choice to

1465
00:58:11,219 --> 00:58:14,189
make that weapon where the if the

1466
00:58:12,719 --> 00:58:15,659
science made it possible and the

1467
00:58:14,190 --> 00:58:17,670
decision to make it was a political one

1468
00:58:15,659 --> 00:58:19,078

you know science makes a lot of things

1469

00:58:17,670 --> 00:58:21,659

possible the fact that something is

1470

00:58:19,079 --> 00:58:23,849

possible does not mean that it has to be

1471

00:58:21,659 --> 00:58:25,980

resistance in a certain way in the end

1472

00:58:23,849 --> 00:58:28,079

for example with with the atomic bomb

1473

00:58:25,980 --> 00:58:30,929

the decision was made by politicians the

1474

00:58:28,079 --> 00:58:33,359

decision to drop the bomb on Japan

1475

00:58:30,929 --> 00:58:34,919

that's definitely the second one well or

1476

00:58:33,358 --> 00:58:37,130

both of them but definitely the second

1477

00:58:34,920 --> 00:58:40,170

one that was made by politicians

1478

00:58:37,130 --> 00:58:42,450

scientists did create the possibility

1479

00:58:40,170 --> 00:58:44,250

for politicians to make that decision on

1480

00:58:42,449 --> 00:58:46,199

the other hand they also created nuclear

1481

00:58:44,250 --> 00:58:47,460

power which or did a lot of good things

1482

00:58:46,199 --> 00:58:49,529

and you know what in we

1483
00:58:47,460 --> 00:58:51,360
have rat poison which kills rats but you

1484
00:58:49,530 --> 00:58:54,690
know what it also kills people if they

1485
00:58:51,360 --> 00:58:59,370
take it z you know you can't science at

1486
00:58:54,690 --> 00:59:00,720
its purest has to be without morals ok

1487
00:58:59,369 --> 00:59:02,549
pure science it doesn't mean that the

1488
00:59:00,719 --> 00:59:03,929
scientists have to work without morals

1489
00:59:02,550 --> 00:59:06,570
that that is absolutely not what I'm

1490
00:59:03,929 --> 00:59:07,799
saying but science itself has to be free

1491
00:59:06,570 --> 00:59:09,990
of morals you just want to know whether

1492
00:59:07,800 --> 00:59:12,450
something is true or not an advanced

1493
00:59:09,989 --> 00:59:14,489
knowledge now the read the good thing

1494
00:59:12,449 --> 00:59:15,779
about the fact that science does not

1495
00:59:14,489 --> 00:59:18,059
live in a vacuum in today's society

1496
00:59:15,780 --> 00:59:20,310
around it the society can take care of

1497
00:59:18,059 --> 00:59:22,259
making sure that bad things don't happen

1498
00:59:20,309 --> 00:59:23,699
or the bet you know sometimes society

1499
00:59:22,260 --> 00:59:25,860
obviously makes bad decisions a bad

1500
00:59:23,699 --> 00:59:27,839
things do happen but in general I don't

1501
00:59:25,860 --> 00:59:29,789
think it's the role of science per se of

1502
00:59:27,840 --> 00:59:31,470
scientific investigation to make

1503
00:59:29,789 --> 00:59:33,029
decisions about moral questions about

1504
00:59:31,469 --> 00:59:35,429
what neat what what should or should not

1505
00:59:33,030 --> 00:59:37,050
be done and you mentioned that you had a

1506
00:59:35,429 --> 00:59:38,609
big comeuppance yourself when you were

1507
00:59:37,050 --> 00:59:40,530
talking about the rats in the pain and

1508
00:59:38,610 --> 00:59:42,059
you met a professor who knew all about

1509
00:59:40,530 --> 00:59:43,500
this and it was his field and he

1510
00:59:42,059 --> 00:59:46,199
convinced you very quickly that you were

1511

00:59:43,500 --> 00:59:48,480
wrong and that's something that people

1512
00:59:46,199 --> 00:59:49,949
can't learn to a bet okay I've been

1513
00:59:48,480 --> 00:59:51,809
wrong about a change a lot of people

1514
00:59:49,949 --> 00:59:54,509
can't do that easily I didn't do that

1515
00:59:51,809 --> 00:59:57,179
easily he wasn't easy it was it was it

1516
00:59:54,510 --> 01:00:00,000
was fairly quick but he wasn't easy

1517
00:59:57,179 --> 01:00:03,569
because I i had that belief for a very

1518
01:00:00,000 --> 01:00:04,860
very long time and I was very convinced

1519
01:00:03,570 --> 01:00:06,570
of it you know anybody who knows me

1520
01:00:04,860 --> 01:00:08,640
knows I have strong opinions you know

1521
01:00:06,570 --> 01:00:10,230
but the thing is I have strong opinions

1522
01:00:08,639 --> 01:00:11,879
but I'm willing to change them when

1523
01:00:10,230 --> 01:00:13,199
presented with contrary evidence and

1524
01:00:11,880 --> 01:00:15,480
that was one such case there are other

1525
01:00:13,199 --> 01:00:17,819

cases I chose to tell that story but

1526

01:00:15,480 --> 01:00:19,170

there are the stories and and just one

1527

01:00:17,820 --> 01:00:21,750

last question when people ask you to

1528

01:00:19,170 --> 01:00:22,860

explain in one sentence what being a

1529

01:00:21,750 --> 01:00:24,840

skeptic is all about what i normally

1530

01:00:22,860 --> 01:00:27,180

confront them with or what you offer to

1531

01:00:24,840 --> 01:00:29,130

them I say that it's about seeking the

1532

01:00:27,179 --> 01:00:31,819

evidence and forming your opinions based

1533

01:00:29,130 --> 01:00:31,820

on the available evidence

1534

01:00:50,199 --> 01:00:54,259

astronomy cast it takes a fact space

1535

01:00:52,550 --> 01:00:56,330

journey through the costumes as it

1536

01:00:54,260 --> 01:00:59,000

offers listeners weekly discussions on

1537

01:00:56,329 --> 01:01:01,880

astronomical topics ranging from planets

1538

01:00:59,000 --> 01:01:04,369

to cosmology hosted by Fraser Cain of

1539

01:01:01,880 --> 01:01:05,240

Universe Today and myself dr. Pamela gay

1540
01:01:04,369 --> 01:01:07,909
of southern illinois university

1541
01:01:05,239 --> 01:01:09,769
edwardsville this show brings the

1542
01:01:07,909 --> 01:01:12,199
questions of an avid astronomy lover

1543
01:01:09,769 --> 01:01:14,300
directly to an astronomer together

1544
01:01:12,199 --> 01:01:15,829
Fraser and I explore what is known and

1545
01:01:14,300 --> 01:01:18,590
being discovered about the universe

1546
01:01:15,829 --> 01:01:20,690
around us join us each week as we take a

1547
01:01:18,590 --> 01:01:24,220
fax space journey through the cosmos at

1548
01:01:20,690 --> 01:01:24,220
astronomy cast calm

1549
01:01:31,920 --> 01:01:33,950
Oh

1550
01:01:36,018 --> 01:01:41,728
okay saunders in 21 thank you for

1551
01:01:39,809 --> 01:01:44,220
listening to the skeptic zone may not

1552
01:01:41,728 --> 01:01:46,919
thank you for maintaining station here

1553
01:01:44,219 --> 01:01:49,018
with me in the corridor outside the pub

1554
01:01:46,920 --> 01:01:50,999
and i just wanna remind people to when i

1555
01:01:49,018 --> 01:01:52,768
go to tam i'll also be throwing in an

1556
01:01:50,998 --> 01:01:55,259
extra question to most people about what

1557
01:01:52,768 --> 01:01:57,868
music they like and creating a podcast

1558
01:01:55,259 --> 01:02:00,028
called the music of tam 10 and if you

1559
01:01:57,869 --> 01:02:02,190
wonder what that might sound like just

1560
01:02:00,028 --> 01:02:03,719
google the music of town australia i did

1561
01:02:02,190 --> 01:02:06,119
a podcast or i spoke to the whole bunch

1562
01:02:03,719 --> 01:02:07,439
of skeptics at australia's tam and asked

1563
01:02:06,119 --> 01:02:09,298
them what my kind of music they like and

1564
01:02:07,440 --> 01:02:10,950
I put that music into the podcast so

1565
01:02:09,298 --> 01:02:12,929
google that and you'll you'll hear might

1566
01:02:10,949 --> 01:02:14,909
hear someone you know you might you

1567
01:02:12,929 --> 01:02:16,469
might i did enjoy that may note i really

1568

01:02:14,909 --> 01:02:18,989
enjoyed your interviews from cam

1569
01:02:16,469 --> 01:02:22,078
australia and surely that's just a taste

1570
01:02:18,989 --> 01:02:24,239
of what's to come in town las vegas just

1571
01:02:22,079 --> 01:02:26,190
the taste until next week listeners

1572
01:02:24,239 --> 01:02:27,869
thank you again may nod this is Richard

1573
01:02:26,190 --> 01:02:30,960
Saunders signing off from a strange

1574
01:02:27,869 --> 01:02:32,700
little corridor outside a pub in Sydney

1575
01:02:30,960 --> 01:02:39,028
Australia it's funny everyone seems to

1576
01:02:32,699 --> 01:02:43,248
know Richards name you've been listening

1577
01:02:39,028 --> 01:02:47,909
to the skeptic zone visit her website at

1578
01:02:43,248 --> 01:02:51,768
www skeptics on TV for comments contacts

1579
01:02:47,909 --> 01:02:51,768
and extra video reports