

Show 515

THE
**SKEPTIC
ZONE**
PODCAST

www.skepticzone.tv

2 September 2018

Michelle Franklin



Prof. Paul Willis
Creationism in decline

Michelle Franklin
and Maggie the Moggie

Speed Meet the Scientists #3

The Skeptic Zone Podcast
Show 515 - 2 September 2018



1
00:00:09,080 --> 00:00:05,920

[Music]

2
00:00:11,830 --> 00:00:09,090

welcome to the skeptic zone the podcast

3
00:00:13,910 --> 00:00:11,840

from Australia for science and reason

4
00:00:16,840 --> 00:00:13,920

[Music]

5
00:00:22,870 --> 00:00:16,850

[Applause]

6
00:00:25,609 --> 00:00:22,880

[Music]

7
00:00:28,730 --> 00:00:25,619

hello and welcome to the skeptics on

8
00:00:32,570 --> 00:00:28,740

episode number 515 for the 2nd of

9
00:00:34,580 --> 00:00:32,580

September 2018 richardsaunders here with

10
00:00:38,090 --> 00:00:34,590

you from Sydney Australia a little bit

11
00:00:39,410 --> 00:00:38,100

cold for spring and I know the rest of

12
00:00:41,630 --> 00:00:39,420

the world saying hang on a minute the

13
00:00:43,790 --> 00:00:41,640

seasons haven't changed yet but for some

14

00:00:45,619 --> 00:00:43,800

reason here in Australia we regard the

15

00:00:49,640 --> 00:00:45,629

first day of September as the first day

16

00:00:52,189 --> 00:00:49,650

of spring even if the real first day of

17

00:00:53,990 --> 00:00:52,199

spring isn't until a bit later go figure

18

00:00:55,450 --> 00:00:54,000

that one out quite frankly I wouldn't

19

00:00:58,040 --> 00:00:55,460

mind if the first day of spring was

20

00:00:59,990 --> 00:00:58,050

delayed until next year but that's just

21

00:01:02,899 --> 00:01:00,000

me coming up on this week's episode of

22

00:01:04,640 --> 00:01:02,909

the skeptic zone we chat to associate

23

00:01:07,580 --> 00:01:04,650

adjunct hang on answer that egg junk

24

00:01:11,120 --> 00:01:07,590

professor ptosis professor ed JA we

25

00:01:13,399 --> 00:01:11,130

procedure them associate adjunct

26

00:01:15,550 --> 00:01:13,409

associate we chat the poor Willis a

27

00:01:18,830 --> 00:01:15,560

longtime friend of the sceptic zone

28

00:01:21,770 --> 00:01:18,840

dating way back to the early days Paul

29

00:01:23,600 --> 00:01:21,780

used to work at our I oz as the director

30

00:01:25,820 --> 00:01:23,610

there and that's when we were bringing

31

00:01:27,770 --> 00:01:25,830

you a week in science for many years

32

00:01:29,960 --> 00:01:27,780

Paul's gonna be talking to us about a

33

00:01:34,550 --> 00:01:29,970

recent survey that came out that shows a

34

00:01:37,010 --> 00:01:34,560

decline in the belief of or the belief

35

00:01:38,750 --> 00:01:37,020

in creationism amongst university

36

00:01:42,710 --> 00:01:38,760

students which must be a good thing and

37

00:01:44,870 --> 00:01:42,720

his take on the secular outlook a piece

38

00:01:46,910 --> 00:01:44,880

of his mind with Paul Willis coming up

39

00:01:49,130 --> 00:01:46,920

at the top of the show following that

40

00:01:50,740 --> 00:01:49,140

it's our new reporter Michele Franklin

41

00:01:54,350 --> 00:01:50,750

from Darwin in the Northern Territory

42

00:01:56,450 --> 00:01:54,360

with her segment life is wild and

43

00:01:59,710 --> 00:01:56,460

Michelle segments are going to be

44

00:02:02,630 --> 00:01:59,720

focusing on wildlife and animal issues

45

00:02:05,810 --> 00:02:02,640

very interesting this week to kick off

46

00:02:10,729 --> 00:02:05,820

she's going to be looking at our cats in

47

00:02:11,630 --> 00:02:10,739

danger of being eaten by snakes B that's

48

00:02:14,690 --> 00:02:11,640

an interesting one

49

00:02:16,640 --> 00:02:14,700

the story of Maggie the moggy bent

50

00:02:19,280 --> 00:02:16,650

around off the show the last part of our

51
00:02:21,979 --> 00:02:19,290
speed meet the scientists that was a

52
00:02:24,830 --> 00:02:21,989
wonderful night here in Sydney a couple

53
00:02:27,470 --> 00:02:24,840
of weeks ago during science week this

54
00:02:30,709 --> 00:02:27,480
week we're going to speed meet a marine

55
00:02:34,309 --> 00:02:30,719
archeologist and evolutionary biologist

56
00:02:37,429 --> 00:02:34,319
a behavioral neuroscientist a linguist

57
00:02:41,119 --> 00:02:37,439
and an astronomer well that's enough for

58
00:02:43,280 --> 00:02:41,129
me I'm gonna run downstairs try out some

59
00:02:44,990 --> 00:02:43,290
sweet potato pasta eat that very quickly

60
00:02:51,650 --> 00:02:45,000
come back and bring you the rest of the

61
00:03:15,730 --> 00:03:13,460
a piece of his mind with Professor Paul

62
00:03:22,360 --> 00:03:15,740
Willis

63
00:03:25,449 --> 00:03:22,370

[Music]

64

00:03:28,089 --> 00:03:25,459

and joining me now all the way from

65

00:03:30,160 --> 00:03:28,099

Adelaide from media engagement services

66

00:03:32,920 --> 00:03:30,170

is none other than professor Paul Willis

67

00:03:34,960 --> 00:03:32,930

hello Paul oh thank you very much for

68

00:03:37,360 --> 00:03:34,970

the promotion it's actually only an

69

00:03:39,250 --> 00:03:37,370

adjunct asana see a professor but I'll

70

00:03:41,350 --> 00:03:39,260

gladly take the professorship thank you

71

00:03:42,670 --> 00:03:41,360

very much well not many people go to the

72

00:03:46,229 --> 00:03:42,680

bother of saying all the other things

73

00:03:53,380 --> 00:03:49,030

technically no I am only an adjunct

74

00:03:57,369 --> 00:03:55,390

nicely catch up with you Paul long time

75

00:03:59,830 --> 00:03:57,379

listeners to the skipping zone we'll rim

76
00:04:00,910 --> 00:03:59,840
well remember the contributions you've

77
00:04:03,220 --> 00:04:00,920
made to the show over the years

78
00:04:05,170 --> 00:04:03,230
especially with a week in science some

79
00:04:07,720 --> 00:04:05,180
years ago when you were at our IR s are

80
00:04:10,509 --> 00:04:07,730
good times you've moved on since then

81
00:04:13,599 --> 00:04:10,519
tell us a little bit about this meteor

82
00:04:16,390 --> 00:04:13,609
engagement look basically our main

83
00:04:19,810 --> 00:04:16,400
proposition is we can show researchers

84
00:04:22,540 --> 00:04:19,820
how to communicate their research using

85
00:04:25,390 --> 00:04:22,550
social media basically they can take

86
00:04:28,270 --> 00:04:25,400
control of their message and by doing so

87
00:04:32,560 --> 00:04:28,280
they can actually increase the impact of

88
00:04:35,469 --> 00:04:32,570

their research so we've worked out how

89

00:04:39,070 --> 00:04:35,479

to string together various social media

90

00:04:41,260 --> 00:04:39,080

platforms so that you create a network

91

00:04:43,540 --> 00:04:41,270

that reaches out specifically to the

92

00:04:45,640 --> 00:04:43,550

people who are actually interested in

93

00:04:48,100 --> 00:04:45,650

your research I think the basic

94

00:04:50,529 --> 00:04:48,110

proposition is you know a lot of people

95

00:04:53,080 --> 00:04:50,539

go into research communication and they

96

00:04:55,390 --> 00:04:53,090

think I want to tell the world about my

97

00:04:58,719 --> 00:04:55,400

research and it's like now why bother

98

00:05:00,460 --> 00:04:58,729

why bother going on television talking

99

00:05:02,320 --> 00:05:00,470

to a million people who couldn't really

100

00:05:05,260 --> 00:05:02,330

give a toss about what you're doing a

101
00:05:08,050 --> 00:05:05,270
much better value proposition is to set

102
00:05:09,969 --> 00:05:08,060
up a dedicated audience it might only be

103
00:05:11,350 --> 00:05:09,979
a couple of dozen people but if those

104
00:05:13,600 --> 00:05:11,360
people are actually going to take your

105
00:05:15,159 --> 00:05:13,610
research and do something with it that's

106
00:05:18,700 --> 00:05:15,169
the audience you need to be talking to

107
00:05:20,710 --> 00:05:18,710
so that's my basics pitch yeah and very

108
00:05:23,080 --> 00:05:20,720
interesting and just before we get on

109
00:05:25,719 --> 00:05:23,090
with the rest of the chat how can people

110
00:05:28,810 --> 00:05:25,729
look at that information online media

111
00:05:31,380 --> 00:05:28,820
engagement services.com do it's all

112
00:05:35,529 --> 00:05:31,390
there on our website we can produce

113
00:05:36,070 --> 00:05:35,539

seminars or workshops video tutorials

114

00:05:38,469 --> 00:05:36,080

and

115

00:05:41,170 --> 00:05:38,479

way to get this this kind of information

116

00:05:43,240 --> 00:05:41,180

across to researchers and folks of

117

00:05:45,219 --> 00:05:43,250

course Paul Willis has the runs on the

118

00:05:48,070 --> 00:05:45,229

board with long experience in the media

119

00:05:50,589 --> 00:05:48,080

and on TV and many Australians will

120

00:05:52,179 --> 00:05:50,599

remember but right now Paul I'm very

121

00:05:54,850 --> 00:05:52,189

interested in the story that I think you

122

00:05:58,420 --> 00:05:54,860

brought to my attention via a Twitter or

123

00:06:01,119 --> 00:05:58,430

Facebook a couple of weeks ago and it

124

00:06:02,950 --> 00:06:01,129

seems fewer Australian University

125

00:06:05,860 --> 00:06:02,960

students than ever believed in

126

00:06:07,869 --> 00:06:05,870

creationism and this is sort of research

127

00:06:11,080 --> 00:06:07,879

done by our mutual friend professor Mike

128

00:06:13,839 --> 00:06:11,090

Archer yeah who is actually my former

129

00:06:16,209 --> 00:06:13,849

supervisor and in fact in the very year

130

00:06:22,379 --> 00:06:16,219

that I started with him as a research

131

00:06:26,800 --> 00:06:22,389

student 1986 he started a regular annual

132

00:06:29,409 --> 00:06:26,810

survey of first year students asking

133

00:06:31,899 --> 00:06:29,419

which of four positions they actually

134

00:06:33,909 --> 00:06:31,909

hold true so these are students at the

135

00:06:37,119 --> 00:06:33,919

beginning of their university career in

136

00:06:40,809 --> 00:06:37,129

science in biological sciences and the

137

00:06:43,360 --> 00:06:40,819

four options are evolution without any

138

00:06:45,459 --> 00:06:43,370

kind of supernatural interference the

139

00:06:47,529 --> 00:06:45,469

second is that evolution has occurred

140

00:06:50,320 --> 00:06:47,539

but there has been a god or some other

141

00:06:54,309 --> 00:06:50,330

supernatural influence in over the whole

142

00:06:57,850 --> 00:06:54,319

process then there's adherence to

143

00:07:02,290 --> 00:06:57,860

creationism and the fourth category is

144

00:07:05,290 --> 00:07:02,300

don't really know and he's conducted

145

00:07:07,629 --> 00:07:05,300

that now for what thirty two years so

146

00:07:10,379 --> 00:07:07,639

he's got a really interesting set of

147

00:07:13,230 --> 00:07:10,389

data now which shows some very

148

00:07:17,230 --> 00:07:13,240

intriguing trend lines basically

149

00:07:18,730 --> 00:07:17,240

creationism amongst first year biology

150

00:07:24,399 --> 00:07:18,740

students at the University of New South

151

00:07:26,469 --> 00:07:24,409

Wales has dropped from about 12% down to

152

00:07:29,070 --> 00:07:26,479

just a few percent mmm but there is

153

00:07:32,829 --> 00:07:29,080

there is a significant decline in

154

00:07:36,010 --> 00:07:32,839

first-year students who are committed

155

00:07:41,920 --> 00:07:36,020

creationists but the most interesting

156

00:07:45,100 --> 00:07:41,930

drop is a very large drop in the number

157

00:07:48,189 --> 00:07:45,110

of theistic evolutionists so those are

158

00:07:49,660 --> 00:07:48,199

the the ones who tick the box saying

159

00:07:53,980 --> 00:07:49,670

evolution has occurred but

160

00:07:56,560 --> 00:07:53,990

being guided by God and commensurate

161

00:08:01,750 --> 00:07:56,570

with the drop in theistic evolution has

162

00:08:05,650 --> 00:08:01,760

been the rise of non theistic evolution

163

00:08:08,020 --> 00:08:05,660

of straight no God involved scientific

164

00:08:11,650 --> 00:08:08,030

evolution the grass that are generated

165

00:08:14,530 --> 00:08:11,660

and I can recommend that the listeners

166

00:08:17,850 --> 00:08:14,540

go and chase up these reports on this

167

00:08:21,640 --> 00:08:17,860

particular study because the grass

168

00:08:25,900 --> 00:08:21,650

generated there's a clear X with the

169

00:08:29,740 --> 00:08:25,910

decline of theistic evolution and the

170

00:08:31,600 --> 00:08:29,750

rise of plain evolutionary biology it's

171

00:08:33,490 --> 00:08:31,610

interesting because I mean ever since I

172

00:08:35,590 --> 00:08:33,500

have known you Paul that's been one of

173

00:08:38,500 --> 00:08:35,600

the major issues you've certainly been

174

00:08:41,200 --> 00:08:38,510

concerned with and if I hark back to the

175

00:08:43,750 --> 00:08:41,210

the origins of the Australian skeptics

176

00:08:45,970 --> 00:08:43,760

apart from spoon bending in UFOs and all

177

00:08:48,490 --> 00:08:45,980

the good stuff from the 1970s one of the

178

00:08:50,530 --> 00:08:48,500

huge issues that the Australians the

179

00:08:53,980 --> 00:08:50,540

Australian skeptics tackled in the early

180

00:08:56,830 --> 00:08:53,990

days was creationism and these days it

181

00:08:58,630 --> 00:08:56,840

hardly registers on the radar at all is

182

00:09:02,520 --> 00:08:58,640

that what you're you're finding is as

183

00:09:06,150 --> 00:09:02,530

well yeah I might my introduction to

184

00:09:10,030 --> 00:09:06,160

skepticism was through my work with

185

00:09:11,860 --> 00:09:10,040

creationism or against creationism I was

186

00:09:14,850 --> 00:09:11,870

arguing in primary school against

187

00:09:18,430 --> 00:09:14,860

teachers who were putting forward

188

00:09:21,970 --> 00:09:18,440

creationist message and yes there does

189

00:09:25,150 --> 00:09:21,980

seem to be a drop-off in Australia of

190

00:09:27,340 --> 00:09:25,160

the creationist message it doesn't seem

191

00:09:30,580 --> 00:09:27,350

to be as widespread or as pervasive as

192

00:09:33,310 --> 00:09:30,590

it was even 10 years ago when we had the

193

00:09:36,190 --> 00:09:33,320

whole intelligent design debacle yes

194

00:09:38,590 --> 00:09:36,200

which are reported on that for catalyst

195

00:09:43,240 --> 00:09:38,600

and you know we went went out to a

196

00:09:46,530 --> 00:09:43,250

school a Christian school in the hill

197

00:09:48,760 --> 00:09:46,540

suburbs of Sydney and they were

198

00:09:50,860 --> 00:09:48,770

presenting intelligent design in the

199

00:09:52,900 --> 00:09:50,870

classroom as look this is a possible

200

00:09:54,910 --> 00:09:52,910

alternative you know makes you think

201
00:09:57,190 --> 00:09:54,920
doesn't it no it it only makes you think

202
00:10:00,760 --> 00:09:57,200
if you don't know what the subject is

203
00:10:03,220 --> 00:10:00,770
you know it's it was adequately

204
00:10:08,530 --> 00:10:03,230
described as the lipstick on

205
00:10:11,050 --> 00:10:08,540
Pig of creations you know we it looks

206
00:10:13,420 --> 00:10:11,060
like from the data that's come in that

207
00:10:14,410 --> 00:10:13,430
that creationist influent has dropped

208
00:10:18,690 --> 00:10:14,420
off hmm

209
00:10:23,560 --> 00:10:18,700
but more importantly the whole

210
00:10:26,650 --> 00:10:23,570
abandoning of theistic evolution that's

211
00:10:30,190 --> 00:10:26,660
really well reflected in the census data

212
00:10:34,390 --> 00:10:30,200
which shows the rise of secularism of

213
00:10:38,020 --> 00:10:34,400

people choosing no religion as their

214

00:10:42,880 --> 00:10:38,030

first option on the census yeah yeah so

215

00:10:45,160 --> 00:10:42,890

this this rise in not simply the

216

00:10:48,580 --> 00:10:45,170

rejection of God but just moving away

217

00:10:50,800 --> 00:10:48,590

from the whole religious question I

218

00:10:52,900 --> 00:10:50,810

think that's what we're actually seeing

219

00:10:54,820 --> 00:10:52,910

reflected in this data refers to your

220

00:10:56,530 --> 00:10:54,830

students yes let's pick up on that

221

00:10:58,930 --> 00:10:56,540

subject in a moment but before we do

222

00:11:01,480 --> 00:10:58,940

that I wonder Paul if you remember about

223

00:11:04,420 --> 00:11:01,490

10 11 years ago you and I in a merry

224

00:11:07,660 --> 00:11:04,430

band of skeptics set off and we attended

225

00:11:10,570 --> 00:11:07,670

a creationist lecture complete with a

226

00:11:15,750 --> 00:11:10,580

model a scale model of Noah's Ark here

227

00:11:20,560 --> 00:11:15,760

in Sydney to so many of them they're all

228

00:11:22,650 --> 00:11:20,570

pulling as each other and you know as

229

00:11:29,020 --> 00:11:22,660

with virtually any subject that

230

00:11:30,790 --> 00:11:29,030

scepticism tackles I maintain that we're

231

00:11:33,430 --> 00:11:30,800

never going to win the battle you're

232

00:11:36,070 --> 00:11:33,440

never going to convince the the the

233

00:11:38,380 --> 00:11:36,080

other side that they're wrong but if you

234

00:11:40,570 --> 00:11:38,390

don't get in there and battle they will

235

00:11:45,160 --> 00:11:40,580

win and we can't afford that

236

00:11:47,830 --> 00:11:45,170

the object isn't a skeptical challenge

237

00:11:49,570 --> 00:11:47,840

to any supernatural proposition the

238

00:11:51,490 --> 00:11:49,580

object isn't to convince the other

239

00:11:53,170 --> 00:11:51,500

person that they're wrong as I said

240

00:11:55,360 --> 00:11:53,180

you're never going to do that they're

241

00:11:57,550 --> 00:11:55,370

committed but because of the online

242

00:11:59,980 --> 00:11:57,560

environment there is a large audience

243

00:12:02,560 --> 00:11:59,990

out there who are watching and they're

244

00:12:06,840 --> 00:12:02,570

the ones whose minds you can change mmm

245

00:12:11,380 --> 00:12:06,850

they're the ones who are looking for the

246

00:12:15,490 --> 00:12:11,390

most reasonable and passionate argument

247

00:12:16,840 --> 00:12:15,500

so you know my tip on arguing against

248

00:12:19,449 --> 00:12:16,850

creationism or

249

00:12:22,210 --> 00:12:19,459

anything that you want to argue online

250

00:12:25,840 --> 00:12:22,220

there's three basic rules take the high

251
00:12:28,240 --> 00:12:25,850
moral ground always be polite and always

252
00:12:31,480 --> 00:12:28,250
bring it back to the evidence mmm if you

253
00:12:34,269 --> 00:12:31,490
take those three then the audience

254
00:12:35,980 --> 00:12:34,279
that's watching that discussion are more

255
00:12:39,999 --> 00:12:35,990
likely to accept what you're going to

256
00:12:41,559 --> 00:12:40,009
say rather than someone who's probably

257
00:12:44,110 --> 00:12:41,569
going to start ranting and name-calling

258
00:12:47,620 --> 00:12:44,120
and obfuscating now let's look at this

259
00:12:50,829 --> 00:12:47,630
whole area of secularism and it just

260
00:12:52,870 --> 00:12:50,839
occurred to me that even though you we

261
00:12:54,579 --> 00:12:52,880
can't convince the hardcore believers on

262
00:12:56,949 --> 00:12:54,589
the other side there are certainly less

263
00:12:58,629 --> 00:12:56,959

of them do you think that's partly

264

00:13:03,939 --> 00:12:58,639

because simply and to put it simply

265

00:13:08,259 --> 00:13:03,949

they're dying out yeah I think that

266

00:13:10,480 --> 00:13:08,269

there's also because now Society allows

267

00:13:14,009 --> 00:13:10,490

more debate and discussion and

268

00:13:17,590 --> 00:13:14,019

questioning of religious propositions

269

00:13:18,850 --> 00:13:17,600

each successive generation is doing

270

00:13:21,490 --> 00:13:18,860

exactly that they're actually

271

00:13:23,759 --> 00:13:21,500

questioning religious propositions and

272

00:13:30,220 --> 00:13:23,769

that they don't simply don't measure up

273

00:13:34,870 --> 00:13:30,230

to the expectations that people require

274

00:13:39,069 --> 00:13:34,880

for a code of living now you throw into

275

00:13:40,569 --> 00:13:39,079

that the abysmal track record of some of

276

00:13:45,400 --> 00:13:40,579

the churches when it comes to things

277

00:13:50,170 --> 00:13:45,410

like pedophilia in the ranks and the

278

00:13:53,980 --> 00:13:50,180

whole same-sex marriage debate that it's

279

00:13:56,800 --> 00:13:53,990

incongruous for many people to think

280

00:13:59,920 --> 00:13:56,810

that these are organizations that are

281

00:14:03,579 --> 00:13:59,930

promising to give you a moral code yeah

282

00:14:06,970 --> 00:14:03,589

and yet they're behaving so immoral and

283

00:14:11,110 --> 00:14:06,980

so all of these factors I think come

284

00:14:15,400 --> 00:14:11,120

together to have people abandoning faith

285

00:14:18,129 --> 00:14:15,410

and belief as a process to knowledge yes

286

00:14:21,309 --> 00:14:18,139

it's interesting so and of course this

287

00:14:22,960 --> 00:14:21,319

is led to in part I guess to the rise of

288

00:14:27,639 --> 00:14:22,970

what we might call the broader secular

289

00:14:31,329 --> 00:14:27,649

outlook yeah you know we have you can

290

00:14:33,490 --> 00:14:31,339

say maybe it's the rise of eighth

291

00:14:35,860 --> 00:14:33,500

but I I think it actually goes beyond

292

00:14:38,740 --> 00:14:35,870

that because you know I've been surfing

293

00:14:42,250 --> 00:14:38,750

along on the whole rise of atheism over

294

00:14:43,750 --> 00:14:42,260

the last decade or more but I've never

295

00:14:47,519 --> 00:14:43,760

really felt comfortable there

296

00:14:52,540 --> 00:14:47,529

because essentially as a proposition

297

00:14:56,620 --> 00:14:52,550

it's not stating what you accept its

298

00:14:59,620 --> 00:14:56,630

stating what you reject mmm and you know

299

00:15:01,000 --> 00:14:59,630

we don't define ourselves as well I'm

300

00:15:03,639 --> 00:15:01,010

not a stamp collector

301

00:15:06,400 --> 00:15:03,649

I mean tell you about me you don't

302

00:15:08,710 --> 00:15:06,410

expect the Catholic to say I'm not a

303

00:15:12,790 --> 00:15:08,720

Protestant that doesn't really tell you

304

00:15:17,050 --> 00:15:12,800

what they are and so by taking a

305

00:15:20,620 --> 00:15:17,060

rejection statement as the your position

306

00:15:23,110 --> 00:15:20,630

statement for what you accept in the

307

00:15:26,740 --> 00:15:23,120

world that that doesn't make sense to me

308

00:15:29,940 --> 00:15:26,750

but also there is an underlying thing

309

00:15:34,180 --> 00:15:29,950

that really it's not that I reject God

310

00:15:37,780 --> 00:15:34,190

it's that I reject belief as a knowledge

311

00:15:41,139 --> 00:15:37,790

system right and if you reject belief as

312

00:15:44,500 --> 00:15:41,149

a knowledge system then you can't accept

313

00:15:48,940 --> 00:15:44,510

the God because a God is only exists as

314

00:15:50,920 --> 00:15:48,950

a belief proposition you cannot provide

315

00:15:54,240 --> 00:15:50,930

evidence that there is a God and

316

00:15:58,269 --> 00:15:54,250

therefore it's a it's a belief statement

317

00:16:00,220 --> 00:15:58,279

so I think that more and more people are

318

00:16:02,980 --> 00:16:00,230

coming around to this it's not a

319

00:16:08,310 --> 00:16:02,990

rejection of God it's a rejection of

320

00:16:11,079 --> 00:16:08,320

belief and that's why I've switched from

321

00:16:14,740 --> 00:16:11,089

identifying as an atheist so identifying

322

00:16:17,470 --> 00:16:14,750

as a secular humanist you know I've now

323

00:16:20,829 --> 00:16:17,480

actually become a an ambassador for the

324

00:16:24,880 --> 00:16:20,839

National Secular Lobby and the basic

325

00:16:27,730 --> 00:16:24,890

proposition is look let's have a truly

326

00:16:30,730 --> 00:16:27,740

secular society where we have the

327

00:16:32,800 --> 00:16:30,740

religious freedom for you to believe and

328

00:16:36,430 --> 00:16:32,810

accept whatever you want

329

00:16:38,560 --> 00:16:36,440

I won't challenge that that you must

330

00:16:42,250 --> 00:16:38,570

play by the rules and there are three

331

00:16:43,870 --> 00:16:42,260

simple rules for a secular society you

332

00:16:46,600 --> 00:16:43,880

must not do any harm

333

00:16:49,060 --> 00:16:46,610

to yourself to your parishioners or to

334

00:16:50,340 --> 00:16:49,070

anybody else through your religious

335

00:16:53,890 --> 00:16:50,350

beliefs or practices

336

00:16:57,970 --> 00:16:53,900

you must not inflict your beliefs on

337

00:17:01,350 --> 00:16:57,980

anybody else in across society and you

338

00:17:04,090 --> 00:17:01,360

must act within the laws of that society

339

00:17:06,670 --> 00:17:04,100

if you stick within those three rules I

340

00:17:09,250 --> 00:17:06,680

don't give a damn what you believe you

341

00:17:12,550 --> 00:17:09,260

know you can go away and believe what

342

00:17:15,150 --> 00:17:12,560

you like but you must maintain that

343

00:17:17,380 --> 00:17:15,160

within the bounds of those three rules

344

00:17:19,720 --> 00:17:17,390

that's interesting and I couldn't help

345

00:17:21,939 --> 00:17:19,730

and I wonder if listeners felt the same

346

00:17:24,040 --> 00:17:21,949

way I couldn't help thinking of Isaac

347

00:17:26,949 --> 00:17:24,050

Asimov's robotic rules when you're

348

00:17:29,620 --> 00:17:26,959

reading those out well maybe with the

349

00:17:32,170 --> 00:17:29,630

rise of in artificial intelligence and

350

00:17:35,410 --> 00:17:32,180

maybe that's the way we do need to to

351

00:17:37,630 --> 00:17:35,420

phrase the laws of secularism maybe

352

00:17:40,780 --> 00:17:37,640

maybe we do oh so you're an ambassador

353

00:17:43,890 --> 00:17:40,790

for the National Secular Lobby and what

354

00:17:47,410 --> 00:17:43,900

else does that entail well let's see

355

00:17:52,120 --> 00:17:47,420

among our ranks are a Christian other--

356

00:17:55,930 --> 00:17:52,130

ambassador Jane Caro Philip Adams and

357

00:17:59,550 --> 00:17:55,940

basically we've been set up to provide

358

00:18:03,640 --> 00:17:59,560

an alternative to groups like the

359

00:18:06,130 --> 00:18:03,650

Australian Christian Lobby so in Paula

360

00:18:09,520 --> 00:18:06,140

in the political arena there is a

361

00:18:13,420 --> 00:18:09,530

secular voice that can be heard above

362

00:18:15,220 --> 00:18:13,430

all of the religious voices that are

363

00:18:17,920 --> 00:18:15,230

injected in there through various other

364

00:18:19,780 --> 00:18:17,930

lobby groups that's interesting because

365

00:18:21,670 --> 00:18:19,790

that's been a particular theme

366

00:18:23,590 --> 00:18:21,680

especially I think here in New South

367

00:18:25,360 --> 00:18:23,600

Wales for a long time with a hardcore

368

00:18:30,280 --> 00:18:25,370

Christian group in their New South Wales

369

00:18:34,030 --> 00:18:30,290

Parliament yeah look I think when you

370

00:18:35,530 --> 00:18:34,040

look across every state and indeed at

371

00:18:37,960 --> 00:18:35,540

the federal level particularly at the

372

00:18:40,810 --> 00:18:37,970

federal level look at this debacle

373

00:18:44,200 --> 00:18:40,820

that's just occurred with the the

374

00:18:48,160 --> 00:18:44,210

leadership of the nation yeah and a

375

00:18:51,780 --> 00:18:48,170

large chunk of that can be shaded home

376

00:18:55,000 --> 00:18:51,790

to the Conservatives who are basically

377

00:18:57,430 --> 00:18:55,010

most of them are extremely religious

378

00:19:01,060 --> 00:18:57,440

people and they're conservative

379

00:19:06,430 --> 00:19:01,070

Vijender is closely allied to their

380

00:19:10,029 --> 00:19:06,440

religious beliefs and so how can we have

381

00:19:14,169 --> 00:19:10,039

a different conversation one that is not

382

00:19:18,549 --> 00:19:14,179

hijacked by religious beliefs on the

383

00:19:22,600 --> 00:19:18,559

political stage one that gives a secular

384

00:19:25,210 --> 00:19:22,610

voice so that all beliefs and non belief

385

00:19:28,210 --> 00:19:25,220

systems have a right to be represented

386

00:19:30,999 --> 00:19:28,220

with equal merit on the political stage

387

00:19:35,169 --> 00:19:31,009

and how can people find out more about

388

00:19:39,330 --> 00:19:35,179

the national secular Lobby how do you

389

00:19:43,710 --> 00:19:39,340

find out about anything rounded Googler

390

00:19:45,700 --> 00:19:43,720

I have I have to ask Paul you know

391

00:19:49,990 --> 00:19:45,710

national secular Lobby

392

00:19:52,509 --> 00:19:50,000

we've got facebook page website Twitter

393

00:19:53,350 --> 00:19:52,519

account Instagram you name it all the

394

00:19:56,289 --> 00:19:53,360

bells and whistles

395

00:19:59,289 --> 00:19:56,299

just plug national secular Lobby into

396

00:20:02,139 --> 00:19:59,299

your favorite browser and and you will

397

00:20:04,690 --> 00:20:02,149

find more than you need to know about us

398

00:20:06,669 --> 00:20:04,700

well adjunct associate professor Paul

399

00:20:08,409 --> 00:20:06,679

Willis I keep promising or threatening

400

00:20:10,690 --> 00:20:08,419

to come down to Adelaide to visit you

401

00:20:12,639 --> 00:20:10,700

I'm sure I'll do it one day but for now

402

00:20:15,430 --> 00:20:12,649

thank you for appearing on the sceptic

403

00:20:17,200 --> 00:20:15,440

zone always a pleasure and yeah there's

404

00:20:22,130 --> 00:20:17,210

a cellar full of red wine here waiting

405

00:20:34,890 --> 00:20:31,520

[Music]

406

00:20:37,440 --> 00:20:34,900

calling all skeptics or listeners the

407

00:20:39,780 --> 00:20:37,450

you live and or near Glasgow are are you

408

00:20:42,060 --> 00:20:39,790

planning to visit sometime then you're

409

00:20:45,540 --> 00:20:42,070

in luck because the Glasgow skeptics

410

00:20:46,830 --> 00:20:45,550

have got your Monday nights sorted we

411

00:20:49,500 --> 00:20:46,840

are committed to filling up every

412

00:20:52,230 --> 00:20:49,510

available Monday night talks on science

413

00:20:54,360 --> 00:20:52,240

and skepticism past speakers include

414

00:20:56,820 --> 00:20:54,370

Eugenie Scott Jerry Coyne make up

415

00:20:59,280 --> 00:20:56,830

Marshall Nate Phelps torment Cecil from

416

00:21:02,370 --> 00:20:59,290

cognitive dissonance PZ Myers Richard

417

00:21:04,650 --> 00:21:02,380

Wiseman EC drilling Noah Heath and Eli

418

00:21:07,650 --> 00:21:04,660

from the scathing atheist Simon Singh

419

00:21:10,560 --> 00:21:07,660

Rebecca Watson and a multitude of local

420

00:21:12,900 --> 00:21:10,570

academics and skeptics there's literally

421

00:21:13,620 --> 00:21:12,910

nothing better you can do on a Monday in

422

00:21:15,450 --> 00:21:13,630

Glasgow

423

00:21:18,390 --> 00:21:15,460

it doesn't involve taking your clothes

424

00:21:20,640 --> 00:21:18,400

off so come join us we've also got a

425

00:21:22,740 --> 00:21:20,650

vibrant online community you can find us

426
00:21:25,230 --> 00:21:22,750
on Facebook Twitter and get involved

427
00:21:29,250 --> 00:21:25,240
with the discussion glasgow skeptics

428
00:21:29,260 --> 00:21:41,300
[Music]

429
00:21:41,310 --> 00:21:54,080
life is wild with Michelle Franklin

430
00:21:57,720 --> 00:21:56,790
hello from Darwin's in the top end of

431
00:21:59,790 --> 00:21:57,730
the Northern Territory

432
00:22:01,860 --> 00:21:59,800
this is Michelle Franklin reporting in

433
00:22:04,470 --> 00:22:01,870
with questions and maybe even some

434
00:22:15,150 --> 00:22:04,480
answers about our environment and the

435
00:22:17,250 --> 00:22:15,160
creatures that we share away so a friend

436
00:22:20,160 --> 00:22:17,260
of a friend asked me recently whether

437
00:22:23,720 --> 00:22:20,170
her pet cat was in danger of being eaten

438
00:22:27,810 --> 00:22:23,730

by the local wildlife or vice versa

439

00:22:29,660 --> 00:22:27,820

Maggie is a Maine [h__h] moggy and she

440

00:22:32,370 --> 00:22:29,670

recently moved here from South Africa

441

00:22:35,340 --> 00:22:32,380

she's been through quarantine and she's

442

00:22:37,740 --> 00:22:35,350

moved into a suburban house in Brisbane

443

00:22:38,490 --> 00:22:37,750

and all seems to be going pretty well so

444

00:22:41,460 --> 00:22:38,500

far

445

00:22:44,160 --> 00:22:41,470

except that one day recently Maggie's

446

00:22:47,450 --> 00:22:44,170

owners discovered that they have a new

447

00:22:51,000 --> 00:22:47,460

housemate a very large and non-venomous

448

00:22:54,690 --> 00:22:51,010

coastal carpet python I'm going to call

449

00:22:57,060 --> 00:22:54,700

her Sally the snake now of course

450

00:23:00,090 --> 00:22:57,070

Sally's owner is concerned for her pets

451

00:23:02,250 --> 00:23:00,100

welfare she has been thinking for a

452

00:23:04,770 --> 00:23:02,260

while now that she might build an

453

00:23:07,110 --> 00:23:04,780

outdoor enclosure so that Maggie can

454

00:23:09,830 --> 00:23:07,120

enjoyed the sunshine without any

455

00:23:13,170 --> 00:23:09,840

unwanted wildlife related incidents and

456

00:23:15,450 --> 00:23:13,180

the recent addition of Sally to the

457

00:23:17,390 --> 00:23:15,460

household has raised a couple of

458

00:23:20,730 --> 00:23:17,400

questions that I'd like to explore here

459

00:23:23,730 --> 00:23:20,740

question number one being is Maggie in

460

00:23:26,640 --> 00:23:23,740

danger and the short answer is yes

461

00:23:29,670 --> 00:23:26,650

carpet snakes do eat cats but how often

462

00:23:33,480 --> 00:23:29,680

does this happen and how much danger is

463

00:23:36,030 --> 00:23:33,490

Maggie actually in now I'm not a cat

464

00:23:38,370 --> 00:23:36,040

person so I had to google Maine [h__\h] and

465

00:23:40,920 --> 00:23:38,380

it turns out that they're a pretty big

466

00:23:42,600 --> 00:23:40,930

breed of cat but the thing is carpet

467

00:23:45,720 --> 00:23:42,610

snakes can get pretty big too and

468

00:23:50,980 --> 00:23:45,730

reports are that Sally is a pretty big

469

00:23:54,010 --> 00:23:50,990

girl so according to a 2001 study

470

00:23:57,520 --> 00:23:54,020

published in wildlife research that

471

00:23:59,440 --> 00:23:57,530

looked at the stomach contents of 258

472

00:24:03,160 --> 00:23:59,450

carpet snakes which were removed from

473

00:24:05,380 --> 00:24:03,170

houses in Brisbane and Ipswich only two

474

00:24:08,080 --> 00:24:05,390

of those snakes actually had recently

475

00:24:10,630 --> 00:24:08,090

eaten a cat the rest of the prey items

476
00:24:14,590 --> 00:24:10,640
listed were various birds mammals and

477
00:24:17,919 --> 00:24:14,600
reptiles including 17 rats 8 mice for

478
00:24:20,740 --> 00:24:17,929
chickens 8 budgies 12 lovebirds a guinea

479
00:24:23,710 --> 00:24:20,750
pig and a fruit bat and the majority of

480
00:24:25,600 --> 00:24:23,720
the prey appeared to be birds so this in

481
00:24:27,820 --> 00:24:25,610
general seems to tell us that carpet

482
00:24:30,250 --> 00:24:27,830
snakes are far more likely to eat the

483
00:24:33,520 --> 00:24:30,260
local wildlife or the pest rats and mice

484
00:24:35,020 --> 00:24:33,530
rather than the pet cats but there's one

485
00:24:38,140 --> 00:24:35,030
small detail that makes a big difference

486
00:24:40,180 --> 00:24:38,150
here the size of the snake was

487
00:24:42,730 --> 00:24:40,190
correlated really strongly with the size

488
00:24:45,100 --> 00:24:42,740

of the prey item so the smaller snakes

489

00:24:47,680 --> 00:24:45,110

were eating mostly mice and rats and

490

00:24:49,360 --> 00:24:47,690

parrots while the really big snakes were

491

00:24:52,330 --> 00:24:49,370

eating the opossums and chickens and

492

00:24:52,720 --> 00:24:52,340

cats so not good news for Maggie the

493

00:24:55,210 --> 00:24:52,730

moggy

494

00:24:58,799 --> 00:24:55,220

and I think it's probably safe to say

495

00:25:01,870 --> 00:24:58,809

that Sally is in danger of being eaten

496

00:25:04,419 --> 00:25:01,880

question number two is Sally actually a

497

00:25:06,240 --> 00:25:04,429

benefit to have around and there's a

498

00:25:09,669 --> 00:25:06,250

couple of aspects to this question

499

00:25:11,710 --> 00:25:09,679

generally it's well accepted that having

500

00:25:13,750 --> 00:25:11,720

a carpet snake on your roof is good for

501
00:25:15,669 --> 00:25:13,760
rodent control they the rats and the

502
00:25:18,820 --> 00:25:15,679
sometimes opossums and things like that

503
00:25:21,010 --> 00:25:18,830
and this is supported by the 2001

504
00:25:22,690 --> 00:25:21,020
stomach contents research that showed a

505
00:25:25,870 --> 00:25:22,700
large number of rodents being eaten by

506
00:25:28,299 --> 00:25:25,880
carpet snakes but what about other

507
00:25:31,030 --> 00:25:28,309
snakes there's lots of venomous snakes

508
00:25:33,190 --> 00:25:31,040
that share our suburbs and sometimes our

509
00:25:35,200 --> 00:25:33,200
homes and one of the common arguments

510
00:25:37,720 --> 00:25:35,210
for keeping harmless snakes around is

511
00:25:40,930 --> 00:25:37,730
that they displace the venomous snakes

512
00:25:43,600 --> 00:25:40,940
and make our environment safer for us so

513
00:25:45,610 --> 00:25:43,610

is Sally the snake going to protect her

514

00:25:49,840 --> 00:25:45,620

new housemates from her less cuddly

515

00:25:53,799 --> 00:25:49,850

cousins and is the risk of Sally the

516

00:25:55,810 --> 00:25:53,809

snake eating Maggie the moggy offset by

517

00:25:58,620 --> 00:25:55,820

her presence reducing the risk of maybe

518

00:26:01,480 --> 00:25:58,630

encountering say Barry the brown snake

519

00:26:03,220 --> 00:26:01,490

now I've heard this claim before it

520

00:26:04,180 --> 00:26:03,230

seems fairly reasonable to think that

521

00:26:06,789 --> 00:26:04,190

snakes might be

522

00:26:09,249 --> 00:26:06,799

afraid of each other but when I went

523

00:26:11,529 --> 00:26:09,259

searching for evidence to back this up I

524

00:26:13,539 --> 00:26:11,539

couldn't find any there were studies

525

00:26:15,970 --> 00:26:13,549

that listed different types of benefits

526
00:26:17,710 --> 00:26:15,980
from having copper snakes around but

527
00:26:20,409 --> 00:26:17,720
none that I could find said anything

528
00:26:22,869 --> 00:26:20,419
about them deterring venomous snakes so

529
00:26:25,840 --> 00:26:22,879
I turned to an expert dr. Roger asam

530
00:26:28,210 --> 00:26:25,850
aware is a herpetologist who specializes

531
00:26:31,090 --> 00:26:28,220
in behavioral and evolutionary ecology

532
00:26:33,279 --> 00:26:31,100
of reptiles he said that he doesn't know

533
00:26:34,810 --> 00:26:33,289
of any scientific evidence supporting

534
00:26:38,470 --> 00:26:34,820
the idea that carpet snakes keep

535
00:26:39,940 --> 00:26:38,480
venomous snakes away and in fact for

536
00:26:42,070 --> 00:26:39,950
many of the large venomous snakes

537
00:26:45,100 --> 00:26:42,080
pythons are actually a source of food

538
00:26:47,649 --> 00:26:45,110

and since pythons generally don't eat

539

00:26:49,629 --> 00:26:47,659

other snakes there really isn't any

540

00:26:52,869 --> 00:26:49,639

reason for them to be worried about a

541

00:26:55,060 --> 00:26:52,879

carpet snake in the area now absence of

542

00:26:58,090 --> 00:26:55,070

evidence is not necessarily evidence of

543

00:27:00,759 --> 00:26:58,100

absence but I feel pretty confident that

544

00:27:02,409 --> 00:27:00,769

if this was a real thing someone would

545

00:27:04,629 --> 00:27:02,419

have found evidence and written about it

546

00:27:08,320 --> 00:27:04,639

so I'm going to assume that in this case

547

00:27:10,960 --> 00:27:08,330

it's an urban myth and while Maggie the

548

00:27:13,629 --> 00:27:10,970

moggy is in danger of being eaten by

549

00:27:16,149 --> 00:27:13,639

Sally the snake it's probably reasonable

550

00:27:18,070 --> 00:27:16,159

to assume that berry the brown snake is

551
00:27:21,310 --> 00:27:18,080
not concerned about Sally being there

552
00:27:22,740 --> 00:27:21,320
and he's going to show up regardless but

553
00:27:25,450 --> 00:27:22,750
now the plot thickens

554
00:27:27,669 --> 00:27:25,460
Sally's only been basking intermittently

555
00:27:30,340 --> 00:27:27,679
in the mornings and then disappearing

556
00:27:32,830 --> 00:27:30,350
for the rest of the day this behavior is

557
00:27:34,840 --> 00:27:32,840
common in snakes that are incubating

558
00:27:37,149 --> 00:27:34,850
eggs what they'll do is they'll go out

559
00:27:39,610 --> 00:27:37,159
in the mornings absorb a bunch of heat

560
00:27:41,560 --> 00:27:39,620
take that back to their nest and use it

561
00:27:43,419 --> 00:27:41,570
to incubate the eggs because they can't

562
00:27:45,789 --> 00:27:43,429
produce the heat themselves they use the

563
00:27:48,639 --> 00:27:45,799

the sunlight energy to to warm their

564

00:27:49,960 --> 00:27:48,649

eggs up for the sake of this story we're

565

00:27:52,240 --> 00:27:49,970

going to assume that this is what's

566

00:27:54,580 --> 00:27:52,250

happening here and Sally is about to

567

00:27:56,950 --> 00:27:54,590

become a new mum this introduces some

568

00:27:59,230 --> 00:27:56,960

complications to the situation if

569

00:28:01,960 --> 00:27:59,240

there's going to be new baby snakes

570

00:28:05,350 --> 00:28:01,970

around soon we're gonna land on question

571

00:28:08,830 --> 00:28:05,360

number three is Maggie going to eat the

572

00:28:11,470 --> 00:28:08,840

baby snakes so according to Maggie's

573

00:28:13,470 --> 00:28:11,480

owner she's not a killer and this is why

574

00:28:16,690 --> 00:28:13,480

she's been allowed outside up until now

575

00:28:17,930 --> 00:28:16,700

when I hear this my immediate response

576

00:28:20,600 --> 00:28:17,940

is to claim

577

00:28:22,669 --> 00:28:20,610

yes I've grown up with the ingrained

578

00:28:24,999 --> 00:28:22,679

understanding that cats are not to be

579

00:28:27,200 --> 00:28:25,009

allowed outside no matter what because

580

00:28:29,930 --> 00:28:27,210

no matter what their owners think

581

00:28:32,090 --> 00:28:29,940

they're all killers and it occurs to me

582

00:28:34,480 --> 00:28:32,100

now that I actually have no idea if this

583

00:28:36,619 --> 00:28:34,490

is true so I started digging around

584

00:28:39,440 --> 00:28:36,629

trying to find some research that

585

00:28:41,899 --> 00:28:39,450

confirm my preconceived ideas about cat

586

00:28:43,789 --> 00:28:41,909

behavior and yeah I know that's not how

587

00:28:46,659 --> 00:28:43,799

you're supposed to do it but the thing

588

00:28:48,950 --> 00:28:46,669

is I didn't find what I was looking for

589

00:28:51,590 --> 00:28:48,960

there's stacks of resources out there

590

00:28:53,690 --> 00:28:51,600

that explain the devastating impact of

591

00:28:55,789 --> 00:28:53,700

stray cats and feral cats on the native

592

00:28:57,799 --> 00:28:55,799

wildlife in Australia but when you

593

00:29:00,350 --> 00:28:57,809

narrow it down specifically to pet cats

594

00:29:03,110 --> 00:29:00,360

that are well cared for and fed daily

595

00:29:06,019 --> 00:29:03,120

the research becomes pretty sketchy

596

00:29:06,649 --> 00:29:06,029

there were several studies that looked

597

00:29:09,590 --> 00:29:06,659

promising

598

00:29:11,659 --> 00:29:09,600

that stated numbers of different species

599

00:29:14,360 --> 00:29:11,669

that were killed and percentages of cats

600

00:29:16,610 --> 00:29:14,370

that actually did the killing but the

601
00:29:18,950 --> 00:29:16,620
studies suggested that there's a large

602
00:29:21,350 --> 00:29:18,960
subset of cats that actually don't kill

603
00:29:23,210 --> 00:29:21,360
my mind was blonde for about four

604
00:29:25,730 --> 00:29:23,220
seconds until I scrolled down to the

605
00:29:27,799 --> 00:29:25,740
methodology and learned that a lot of

606
00:29:31,159 --> 00:29:27,809
this research is based on data that was

607
00:29:32,600 --> 00:29:31,169
gathered by asking cat owners how many

608
00:29:34,310 --> 00:29:32,610
times they remembered they're kept

609
00:29:37,159 --> 00:29:34,320
bringing dead things home in the past

610
00:29:38,779 --> 00:29:37,169
year thanks for trying guys but I'm

611
00:29:40,460 --> 00:29:38,789
looking for something a bit more solid

612
00:29:43,310 --> 00:29:40,470
than what the cat owners say they

613
00:29:47,090 --> 00:29:43,320

remember there was some research that

614

00:29:49,639 --> 00:29:47,100

used cat mounted video cameras and that

615

00:29:52,100 --> 00:29:49,649

suggested higher predation rates than

616

00:29:54,529 --> 00:29:52,110

what the surveys reported but I couldn't

617

00:29:56,810 --> 00:29:54,539

find much solid evidence for or against

618

00:29:59,899 --> 00:29:56,820

the claim that some cats kill and some

619

00:30:03,230 --> 00:29:59,909

cats don't so once again I turned to an

620

00:30:05,509 --> 00:30:03,240

expert for some guidance ranae piccolo

621

00:30:07,669 --> 00:30:05,519

is an honors student at Griffith

622

00:30:10,360 --> 00:30:07,679

University and her research looks

623

00:30:13,759 --> 00:30:10,370

specifically at well cared for pet cats

624

00:30:16,369 --> 00:30:13,769

she's gathering up two samples from cats

625

00:30:18,619 --> 00:30:16,379

that have been allowed to roam free but

626

00:30:21,830 --> 00:30:18,629

were also fed daily and she's checking

627

00:30:24,049 --> 00:30:21,840

the samples for DNA to identify what

628

00:30:26,840 --> 00:30:24,059

species are actually being eaten by the

629

00:30:28,940 --> 00:30:26,850

cats this is good because it doesn't

630

00:30:31,009 --> 00:30:28,950

rely on humans seeing what's going on

631

00:30:31,430 --> 00:30:31,019

and it doesn't interfere with the cats

632

00:30:33,710 --> 00:30:31,440

purr

633

00:30:36,230 --> 00:30:33,720

in order to collect the data now the

634

00:30:36,860 --> 00:30:36,240

research isn't complete yet but once

635

00:30:38,690 --> 00:30:36,870

it's finished

636

00:30:40,460 --> 00:30:38,700

Rene should be able to tell us a lot

637

00:30:42,710 --> 00:30:40,470

more about what cats are actually

638

00:30:44,480 --> 00:30:42,720

killing and consuming above and beyond

639

00:30:47,060 --> 00:30:44,490

what their owners tell us that they

640

00:30:49,249 --> 00:30:47,070

remember seeing in the meantime

641

00:30:50,600 --> 00:30:49,259

Rene was kind enough to send me some of

642

00:30:52,930 --> 00:30:50,610

the background reading that she's

643

00:30:56,090 --> 00:30:52,940

gathered in preparing her research and

644

00:30:58,190 --> 00:30:56,100

overall it seems pretty clear that well

645

00:31:01,190 --> 00:30:58,200

cared-for pet cats are killing wildlife

646

00:31:03,889 --> 00:31:01,200

what isn't clear is the extent to which

647

00:31:06,470 --> 00:31:03,899

it's happening and the impact that it's

648

00:31:08,990 --> 00:31:06,480

happening on wildlife populations so to

649

00:31:12,759 --> 00:31:09,000

work out what to do I looked at an

650

00:31:17,659 --> 00:31:12,769

argument by Calvert Oh was published in

651
00:31:20,299 --> 00:31:17,669
2011 in biological conservation and it

652
00:31:21,919 --> 00:31:20,309
argues that the situation warrants the

653
00:31:25,220 --> 00:31:21,929
application of the precautionary

654
00:31:27,409 --> 00:31:25,230
principle so this mandates action to

655
00:31:29,840 --> 00:31:27,419
protect the environment when there is a

656
00:31:32,889 --> 00:31:29,850
scientifically plausible but unproven

657
00:31:34,970 --> 00:31:32,899
risk so this provides a rationale for

658
00:31:37,779 --> 00:31:34,980
immediate intervention to protect

659
00:31:41,450 --> 00:31:37,789
wildlife from pet cats while we await

660
00:31:43,340 --> 00:31:41,460
definitive studies so at the end of the

661
00:31:45,590 --> 00:31:43,350
day we've got a lot of things to

662
00:31:47,539 --> 00:31:45,600
consider and moving forward we need to

663
00:31:50,060 --> 00:31:47,549

make a decision about how to manage the

664

00:31:53,600 --> 00:31:50,070

situation of Maggie and Sally house

665

00:31:55,850 --> 00:31:53,610

sharing and decide what to do there are

666

00:31:57,889 --> 00:31:55,860

four main perspectives to consider here

667

00:32:00,529 --> 00:31:57,899

and you can choose your course of action

668

00:32:03,680 --> 00:32:00,539

depending on whether you value highest

669

00:32:07,009 --> 00:32:03,690

the needs of the snake the cat the human

670

00:32:09,289 --> 00:32:07,019

or the ecosystem and there's four

671

00:32:13,190 --> 00:32:09,299

possible courses of action that I can

672

00:32:15,320 --> 00:32:13,200

think of which are one do nothing to

673

00:32:19,129 --> 00:32:15,330

call the snake capture I have the snake

674

00:32:23,960 --> 00:32:19,139

and her eggs removed three rehome the

675

00:32:26,749 --> 00:32:23,970

cat or four contain the cat so I made up

676

00:32:29,450 --> 00:32:26,759

a punnett square of actions versus

677

00:32:32,149 --> 00:32:29,460

impacts to see if I could come up with

678

00:32:34,940 --> 00:32:32,159

an optimal solution might not be the

679

00:32:38,149 --> 00:32:34,950

best way to communicate through an audio

680

00:32:40,460 --> 00:32:38,159

medium but I'll do my best so I've put

681

00:32:43,039 --> 00:32:40,470

the four possible actions down the left

682

00:32:45,200 --> 00:32:43,049

side and the four points of view along

683

00:32:46,909 --> 00:32:45,210

the top and you can choose

684

00:32:49,730 --> 00:32:46,919

which action you want to consider and

685

00:32:52,669 --> 00:32:49,740

then cross-check that against each of

686

00:32:55,669 --> 00:32:52,679

the four perspectives and decide which

687

00:32:57,740 --> 00:32:55,679

one has the most positive outcomes if

688

00:33:00,799 --> 00:32:57,750

you choose option number one and do

689

00:33:01,399 --> 00:33:00,809

nothing all four perspectives are taking

690

00:33:04,039 --> 00:33:01,409

a risk

691

00:33:07,039 --> 00:33:04,049

the snake risks losing her babies the

692

00:33:10,190 --> 00:33:07,049

cat risks being eaten human risks losing

693

00:33:13,340 --> 00:33:10,200

her pet and the ecosystem risks the

694

00:33:15,320 --> 00:33:13,350

unknown impacts of a foreign predator if

695

00:33:17,720 --> 00:33:15,330

you choose option two and have the snake

696

00:33:20,419 --> 00:33:17,730

and her eggs removed the cat and the

697

00:33:22,220 --> 00:33:20,429

human are both benefited while the snake

698

00:33:24,080 --> 00:33:22,230

and the ecosystem are disadvantaged

699

00:33:26,269 --> 00:33:24,090

because removing the snake will

700

00:33:28,370 --> 00:33:26,279

essentially reduce the available habitat

701
00:33:30,230 --> 00:33:28,380
for snakes to inhabit meaning that

702
00:33:32,450 --> 00:33:30,240
there'll be increased competition for

703
00:33:35,870 --> 00:33:32,460
resources in their spaces that are left

704
00:33:37,970 --> 00:33:35,880
available to them according to a 2001

705
00:33:40,460 --> 00:33:37,980
study published in biological

706
00:33:43,700 --> 00:33:40,470
conservation over a ten-year period

707
00:33:45,620 --> 00:33:43,710
leading up to the study 11,000 snakes

708
00:33:48,680 --> 00:33:45,630
were removed from people's homes in New

709
00:33:52,100 --> 00:33:48,690
South Wales alone 20% of these were

710
00:33:55,190 --> 00:33:52,110
carpet snakes on top of this 11,000

711
00:33:57,799 --> 00:33:55,200
lizards were also removed and most of

712
00:34:01,250 --> 00:33:57,809
them looked a bit like snakes that's

713
00:34:05,350 --> 00:34:01,260

over 2,000 removals per year or roughly

714

00:34:07,610 --> 00:34:05,360

6 per day now I wasn't able to find any

715

00:34:09,440 --> 00:34:07,620

translocation research specific to

716

00:34:12,050 --> 00:34:09,450

carpet snakes but there was a

717

00:34:15,470 --> 00:34:12,060

comprehensive report by dr. Jeff short

718

00:34:18,260 --> 00:34:15,480

in 2009 that looked at a whole range of

719

00:34:22,909 --> 00:34:18,270

australian vertebrates and it suggested

720

00:34:25,280 --> 00:34:22,919

that 28% of translocations failed due to

721

00:34:28,940 --> 00:34:25,290

a whole range of reasons like being

722

00:34:32,629 --> 00:34:28,950

eaten at the release site for 40% of

723

00:34:36,349 --> 00:34:32,639

cases the outcome wasn't known and for

724

00:34:39,320 --> 00:34:36,359

32 percent of cases the outcome was

725

00:34:42,589 --> 00:34:39,330

actually known to be successful so this

726

00:34:44,930 --> 00:34:42,599

seems like a fairly high risk for poor

727

00:34:48,500 --> 00:34:44,940

Sally and her babies if you choose

728

00:34:50,510 --> 00:34:48,510

option 3 and remove the cat Sally the

729

00:34:52,310 --> 00:34:50,520

snake will benefit from a safer home

730

00:34:55,730 --> 00:34:52,320

although she may miss out on one decent

731

00:34:57,859 --> 00:34:55,740

meal I'm sure she'll be fine but it's

732

00:34:59,000 --> 00:34:57,869

not a good outcome for Maggie who loses

733

00:35:02,570 --> 00:34:59,010

her home or

734

00:35:04,700 --> 00:35:02,580

Maggie's owner who loses her pet and the

735

00:35:09,050 --> 00:35:04,710

impact on the ecosystem depends very

736

00:35:11,000 --> 00:35:09,060

much on what happens to Maggie if she

737

00:35:13,070 --> 00:35:11,010

moves to a different home but she's

738

00:35:15,740 --> 00:35:13,080

still allowed to roam then her impact is

739

00:35:18,350 --> 00:35:15,750

just shifted elsewhere this leaves us

740

00:35:20,350 --> 00:35:18,360

with option four which is the only one

741

00:35:24,110 --> 00:35:20,360

that ticks all the boxes containing

742

00:35:26,480 --> 00:35:24,120

Maggie either inside the house or in a

743

00:35:28,880 --> 00:35:26,490

purpose-built outdoor enclosure will

744

00:35:31,280 --> 00:35:28,890

ensure the safety of the cat the snake

745

00:35:33,500 --> 00:35:31,290

and the rest of the Wildlife one

746

00:35:35,540 --> 00:35:33,510

possible downside here is that if

747

00:35:37,820 --> 00:35:35,550

Maggie's not happy being kept inside the

748

00:35:39,850 --> 00:35:37,830

house then building a large enough

749

00:35:42,830 --> 00:35:39,860

outdoor enclosure to keep her happy is

750

00:35:45,290 --> 00:35:42,840

possibly going to be expensive so this

751

00:35:47,570 --> 00:35:45,300

decision really would depend on the

752

00:35:50,200 --> 00:35:47,580

behavior of the individual cat and the

753

00:35:52,130 --> 00:35:50,210

resources available to the owner so

754

00:35:53,930 --> 00:35:52,140

given what we've learned here today I

755

00:35:56,150 --> 00:35:53,940

think it's fairly clear that the best

756

00:35:59,180 --> 00:35:56,160

choice to benefit all involved is to

757

00:36:01,700 --> 00:35:59,190

confine the cat indoors or if you can

758

00:36:03,890 --> 00:36:01,710

build an outdoor enclosure where the cat

759

00:36:06,950 --> 00:36:03,900

is not able to interact with the

760

00:36:08,930 --> 00:36:06,960

wildlife this option also provides the

761

00:36:10,730 --> 00:36:08,940

added benefit of protecting Maggie from

762

00:36:16,520 --> 00:36:10,740

all the nebulous risks that are

763

00:36:18,920 --> 00:36:16,530

associated with roaming outside thank

764

00:36:21,260 --> 00:36:18,930

you to retire and Renee for sharing your

765

00:36:23,840 --> 00:36:21,270

knowledge and experience and also to

766

00:36:25,520 --> 00:36:23,850

Joanne who asked the question and who

767

00:36:27,980 --> 00:36:25,530

cared enough about her local wildlife

768

00:36:31,790 --> 00:36:27,990

and her pet to want the best answer for

769

00:36:34,580 --> 00:36:31,800

all involved link to the references that

770

00:36:36,710 --> 00:36:34,590

I used will be in the show notes and I'm

771

00:36:39,140 --> 00:36:36,720

looking forward to hearing the outcomes

772

00:36:41,390 --> 00:36:39,150

of Renee's research which shall be

773

00:36:43,190 --> 00:36:41,400

complete in the next few months but keep

774

00:36:46,250 --> 00:36:43,200

you all updated if there's any new

775

00:36:46,910 --> 00:36:46,260

information that comes to light and good

776

00:36:49,160 --> 00:36:46,920

luck to Maggie

777

00:36:51,890 --> 00:36:49,170

I hope you find a way to live in harmony

778

00:36:53,450 --> 00:36:51,900

with your new housemate also best of

779

00:36:56,030 --> 00:36:53,460

luck to Sally with your new brood of

780

00:36:58,850 --> 00:36:56,040

babies I hope they all find homes where

781

00:37:00,310 --> 00:36:58,860

the owner is as caring and conscientious

782

00:37:12,260 --> 00:37:00,320

as your landlord is

783

00:37:15,120 --> 00:37:12,270

[Music]

784

00:37:18,270 --> 00:37:15,130

the skeptic magazine the journal from

785

00:37:20,460 --> 00:37:18,280

Australian skeptics subscribe online to

786

00:37:21,240 --> 00:37:20,470

the world's second oldest skeptical

787

00:37:27,510 --> 00:37:21,250

magazine

788

00:37:35,850 --> 00:37:32,360

[Music]

789

00:37:54,090 --> 00:37:35,860

free to download the skeptic magazine

790

00:37:56,430 --> 00:37:54,100

from Australian skeptics and now we

791

00:37:58,230 --> 00:37:56,440

bring you part three of speed meet the

792

00:38:06,930 --> 00:37:58,240

scientists held the Powerhouse Museum

793

00:38:09,090 --> 00:38:06,940

here in Sydney during science week give

794

00:38:11,820 --> 00:38:09,100

me that old fashioned archaeology who do

795

00:38:12,690 --> 00:38:11,830

we have here my name is James hunter I'm

796

00:38:16,070 --> 00:38:12,700

with the Australian National Maritime

797

00:38:19,380 --> 00:38:16,080

Museum and what's your area of expertise

798

00:38:21,330 --> 00:38:19,390

i straddle two things one is maritime

799

00:38:23,940 --> 00:38:21,340

archaeology any other is naval history

800

00:38:25,290 --> 00:38:23,950

so I'm the museum's naval curator and

801
00:38:27,840 --> 00:38:25,300
we're talking about the museum which is

802
00:38:28,110 --> 00:38:27,850
just down the way Zinedine Darling

803
00:38:29,490 --> 00:38:28,120
Harbour

804
00:38:30,920 --> 00:38:29,500
that's correct yep we're the ones down

805
00:38:33,120 --> 00:38:30,930
at the end of the end of the road there

806
00:38:34,950 --> 00:38:33,130
yeah I'm just here representing the

807
00:38:36,960 --> 00:38:34,960
museum man talking a bit about maritime

808
00:38:39,780 --> 00:38:36,970
archaeology so I'm hoping people will

809
00:38:41,550 --> 00:38:39,790
come along and ask me what I do and I

810
00:38:43,620 --> 00:38:41,560
will tell them and hopefully not put

811
00:38:46,230 --> 00:38:43,630
them to sleep well that's that's always

812
00:38:49,140 --> 00:38:46,240
a good idea I think now there must be

813
00:38:50,820 --> 00:38:49,150

quite a very rich history of this in the

814

00:38:53,880 --> 00:38:50,830

Sydney area just alone I would imagine

815

00:38:56,430 --> 00:38:53,890

that is correct yes there are several

816

00:38:58,080 --> 00:38:56,440

shipwrecks in the harbour and just

817

00:38:59,680 --> 00:38:58,090

outside the harbour some of them quite

818

00:39:02,049 --> 00:38:59,690

significant

819

00:39:04,000 --> 00:39:02,059

in fact only about two weeks ago we were

820

00:39:07,390 --> 00:39:04,010

doing a dive on the Dunbar which is

821

00:39:10,770 --> 00:39:07,400

wrecked just outside the heads and it

822

00:39:13,359 --> 00:39:10,780

wrecked in 1857 it was an immigrant ship

823

00:39:16,150 --> 00:39:13,369

that came to Sydney at the beginning of

824

00:39:19,210 --> 00:39:16,160

the gold rush in Australia and it

825

00:39:21,309 --> 00:39:19,220

wrecked and everyone save one person

826

00:39:24,130 --> 00:39:21,319

perished all right so it was one of

827

00:39:26,289 --> 00:39:24,140

Sydney's largest loss of life in a

828

00:39:29,380 --> 00:39:26,299

single maritime event when you say just

829

00:39:31,750 --> 00:39:29,390

outside the heads how far outside if you

830

00:39:34,089 --> 00:39:31,760

go out the heads hang a right to go

831

00:39:37,450 --> 00:39:34,099

south and you go down probably about a

832

00:39:39,339 --> 00:39:37,460

kilometre that's how close I'm very

833

00:39:42,039 --> 00:39:39,349

close to the shore incredibly close to

834

00:39:44,470 --> 00:39:42,049

shore in fact parts of that wreck site

835

00:39:46,900 --> 00:39:44,480

are up against the cliff that's close

836

00:39:49,690 --> 00:39:46,910

yeah and what was the major problem the

837

00:39:51,000 --> 00:39:49,700

the dangerous area it sank or the fact

838

00:39:54,130 --> 00:39:51,010

that people couldn't swim

839

00:39:55,450 --> 00:39:54,140

well the wreck itself was a result of

840

00:39:57,520 --> 00:39:55,460

the fact that ship was caught in a gale

841

00:39:59,819 --> 00:39:57,530

they were trying to get in through the

842

00:40:03,160 --> 00:39:59,829

heads and the weather was really bad and

843

00:40:05,589 --> 00:40:03,170

the captain of the ship thought that he

844

00:40:07,089 --> 00:40:05,599

had he had tact at the right time to go

845

00:40:09,849 --> 00:40:07,099

through the heads and in fact he missed

846

00:40:11,440 --> 00:40:09,859

it because of the conditions and he had

847

00:40:13,240 --> 00:40:11,450

tact and put the ship right into the

848

00:40:15,640 --> 00:40:13,250

cliffs he basically drove the ship into

849

00:40:19,210 --> 00:40:15,650

the cliffs and it broke up very quickly

850

00:40:21,039 --> 00:40:19,220

you know high seas ship broke up people

851

00:40:25,120 --> 00:40:21,049

couldn't swim they were wearing heavy

852

00:40:26,109 --> 00:40:25,130

clothing and people drowned the one who

853

00:40:28,630 --> 00:40:26,119

survived

854

00:40:30,279 --> 00:40:28,640

the reason he survives was because he

855

00:40:31,930 --> 00:40:30,289

was up in the rigging he'd climbed up

856

00:40:34,210 --> 00:40:31,940

into the rigging as the ship started to

857

00:40:36,430 --> 00:40:34,220

break up and a wave basically caught him

858

00:40:39,430 --> 00:40:36,440

and just slammed him into the side of

859

00:40:41,559 --> 00:40:39,440

the cliff and he grabbed on and managed

860

00:40:43,690 --> 00:40:41,569

to find a handhold and that's what saved

861

00:40:46,240 --> 00:40:43,700

it that's that's it it's like a

862

00:40:48,130 --> 00:40:46,250

Hollywood story idiot that's that's a l

863

00:40:50,230 --> 00:40:48,140

mean I'm visualizing and I'm sure all my

864

00:40:52,420 --> 00:40:50,240

listeners out to that's that's amazing

865

00:40:54,370 --> 00:40:52,430

and the terrible thing was the guy was

866

00:40:57,670 --> 00:40:54,380

there for two days nobody knew he

867

00:40:59,289 --> 00:40:57,680

survives he he managed to kind of when

868

00:41:01,779 --> 00:40:59,299

the conditions calm down a bit he kind

869

00:41:04,089 --> 00:41:01,789

of shimmed across the cliffs and he

870

00:41:05,590 --> 00:41:04,099

found a spot like a little sort of ledge

871

00:41:08,230 --> 00:41:05,600

that stuck out where he

872

00:41:10,120 --> 00:41:08,240

sit down and yeah he was there for two

873

00:41:11,620 --> 00:41:10,130

days nobody knew he was there and then

874

00:41:14,170 --> 00:41:11,630

someone who happened to be looking over

875

00:41:16,210 --> 00:41:14,180

the cliff saw him and kind of heard him

876

00:41:18,670 --> 00:41:16,220

he was very feeble by this point he's

877

00:41:20,500 --> 00:41:18,680

dehydrated hungry and he was yelling for

878

00:41:23,320 --> 00:41:20,510

help and somebody saw him and so they

879

00:41:25,960 --> 00:41:23,330

actually were able to rescue him and I'm

880

00:41:27,580 --> 00:41:25,970

sure there are many stories I mean

881

00:41:29,410 --> 00:41:27,590

that's a dramatic one but there must be

882

00:41:31,540 --> 00:41:29,420

many stories of other shipwrecks or near

883

00:41:33,820 --> 00:41:31,550

disasters or all sorts of things just in

884

00:41:36,850 --> 00:41:33,830

the Sydney area that's right many many

885

00:41:38,620 --> 00:41:36,860

many many many many people yes ships

886

00:41:42,190 --> 00:41:38,630

hitting cliffs ships colliding with each

887

00:41:44,590 --> 00:41:42,200

other ships catching fire ships whoops I

888

00:41:46,180 --> 00:41:44,600

just drove it into the sand Bank you

889

00:41:49,270 --> 00:41:46,190

know that sort of thing it runs the

890

00:41:51,970 --> 00:41:49,280

gamut from very dramatic horrific loss

891

00:41:54,280 --> 00:41:51,980

of life to just benign sort of whoopsies

892

00:41:56,710 --> 00:41:54,290

Wow and where can people find out more

893

00:41:59,050 --> 00:41:56,720

about this fascinating history great

894

00:42:00,880 --> 00:41:59,060

place to go is the Maritime Museum yes I

895

00:42:03,610 --> 00:42:00,890

work there and yeah I'm giving a pitch

896

00:42:04,990 --> 00:42:03,620

but sure we've got lots of collections

897

00:42:07,330 --> 00:42:05,000

related to these sorts of maritime

898

00:42:09,580 --> 00:42:07,340

disasters we've got a library with lots

899

00:42:10,960 --> 00:42:09,590

of books and documents and be a good

900

00:42:13,630 --> 00:42:10,970

place to go and for those people

901
00:42:15,580 --> 00:42:13,640
visiting Sydney it's a very conveniently

902
00:42:17,620 --> 00:42:15,590
placed in darling harbour which is near

903
00:42:19,480 --> 00:42:17,630
the downtown area but if you just google

904
00:42:21,340 --> 00:42:19,490
the Maritime Museum and Sydney you'll

905
00:42:25,900 --> 00:42:21,350
easily find that all they have a website

906
00:42:29,260 --> 00:42:25,910
I presume they do yes some AM m dot gov

907
00:42:31,610 --> 00:42:29,270
dot a you thank you very much no problem

908
00:42:34,110 --> 00:42:31,620
nice talking to you

909
00:42:37,740 --> 00:42:34,120
from one extreme to the other hello

910
00:42:38,940 --> 00:42:37,750
hello well it's hardly an extreme you're

911
00:42:41,760 --> 00:42:38,950
sitting right next to the guy I was just

912
00:42:43,650 --> 00:42:41,770
talking to who do we have here sir my

913
00:42:45,120 --> 00:42:43,660

name is Karen Bowl I'm a researcher at

914

00:42:47,280 --> 00:42:45,130

the University of New South Wales and

915

00:42:48,630 --> 00:42:47,290

Sydney and what brings you here to meet

916

00:42:51,470 --> 00:42:48,640

the scientists Knight you want to meet a

917

00:42:55,410 --> 00:42:51,480

scientist I'm meeting many scientists

918

00:42:57,120 --> 00:42:55,420

I'm here because I'm incredibly excited

919

00:42:59,070 --> 00:42:57,130

about what I do actually and I realized

920

00:43:01,290 --> 00:42:59,080

you know what do I have to what do I

921

00:43:03,960 --> 00:43:01,300

have to give I don't cure cancer I don't

922

00:43:05,880 --> 00:43:03,970

necessarily you know I don't necessarily

923

00:43:07,500 --> 00:43:05,890

invent new things but I can share this

924

00:43:09,450 --> 00:43:07,510

incredible passion and this

925

00:43:10,080 --> 00:43:09,460

understanding of who we are and where we

926

00:43:13,530 --> 00:43:10,090

came from

927

00:43:15,810 --> 00:43:13,540

in other words evolutionary biology

928

00:43:17,850 --> 00:43:15,820

evolutionary biology absolutely so my

929

00:43:19,680 --> 00:43:17,860

background I was really fascinated when

930

00:43:22,320 --> 00:43:19,690

I was kid I read this book actually not

931

00:43:25,380 --> 00:43:22,330

not that much of a kid I read this book

932

00:43:28,050 --> 00:43:25,390

clan of the cave bear and it talked

933

00:43:30,450 --> 00:43:28,060

about absolutely and it sort of raised

934

00:43:32,130 --> 00:43:30,460

this idea about hybridization so for

935

00:43:35,070 --> 00:43:32,140

anyone who doesn't know interbreeding

936

00:43:36,390 --> 00:43:35,080

between our species and between the and

937

00:43:37,500 --> 00:43:36,400

the tolls or whatever other species

938

00:43:40,830 --> 00:43:37,510

might have been running around at the

939

00:43:42,990 --> 00:43:40,840

time and it caught me and then as I was

940

00:43:44,580 --> 00:43:43,000

going through my undergraduate studies a

941

00:43:46,890 --> 00:43:44,590

couple of papers started coming out

942

00:43:48,540 --> 00:43:46,900

about about DNA

943

00:43:51,270 --> 00:43:48,550

kinks of the end of total DNA in our own

944

00:43:53,370 --> 00:43:51,280

genomes and it just fascinated me so I

945

00:43:54,990 --> 00:43:53,380

thought do we have any do we have any

946

00:43:56,610 --> 00:43:55,000

evidence for this do we have any fossils

947

00:43:59,700 --> 00:43:56,620

do we have any any evidence of this

948

00:44:02,280 --> 00:43:59,710

hybridization going on and there are a

949

00:44:03,600 --> 00:44:02,290

lot of fossils where they think that it

950

00:44:05,400 --> 00:44:03,610

may be the case but we don't know we

951
00:44:08,700 --> 00:44:05,410
didn't know what we were looking for so

952
00:44:10,020 --> 00:44:08,710
I went and collected an awful lot of

953
00:44:13,650 --> 00:44:10,030
monkey skulls

954
00:44:16,830 --> 00:44:13,660
we're aware from all over Asia so

955
00:44:17,940 --> 00:44:16,840
there's a genus known as macaques so

956
00:44:21,000 --> 00:44:17,950
there are a lot of different kinds of

957
00:44:22,500 --> 00:44:21,010
macaques my my favorite study species

958
00:44:24,650 --> 00:44:22,510
but the Japanese macaque so there's no

959
00:44:27,180 --> 00:44:24,660
monkey that hangs out in the sauna

960
00:44:29,160 --> 00:44:27,190
they're very cute and it's very very

961
00:44:30,600 --> 00:44:29,170
easy to tell the hybrids between them

962
00:44:32,430 --> 00:44:30,610
and any other species because other

963
00:44:33,120 --> 00:44:32,440

macaques have tails but the snow monkeys

964

00:44:34,680 --> 00:44:33,130

don't

965

00:44:36,120 --> 00:44:34,690

so you just look for anything with an

966

00:44:38,340 --> 00:44:36,130

intermediate tail and you realize that

967

00:44:40,050 --> 00:44:38,350

had something Funky's going on so by

968

00:44:41,640 --> 00:44:40,060

looking at these hybridizing macaques we

969

00:44:44,610 --> 00:44:41,650

were able to get a better understanding

970

00:44:46,140 --> 00:44:44,620

of what hybridization does to the

971

00:44:49,500 --> 00:44:46,150

skeleton so what it does to the skull

972

00:44:51,840 --> 00:44:49,510

the two species genomes get together and

973

00:44:53,070 --> 00:44:51,850

they're mostly compatible but there are

974

00:44:56,070 --> 00:44:53,080

a few little mistakes along the way

975

00:44:58,560 --> 00:44:56,080

there you get these little minor

976
00:45:00,150 --> 00:44:58,570
developmental abnormalities so things

977
00:45:02,400 --> 00:45:00,160
like an extra tooth or a missing tooth

978
00:45:05,670 --> 00:45:02,410
or a you know a little bone out of place

979
00:45:07,770 --> 00:45:05,680
in the skull and we took all of that and

980
00:45:09,210 --> 00:45:07,780
applied it to humans and we're hoping

981
00:45:11,070 --> 00:45:09,220
they've got a better understanding and

982
00:45:16,080 --> 00:45:11,080
we may be able to identify hybrid

983
00:45:18,480 --> 00:45:16,090
fossils in the future Wow every time I

984
00:45:20,250 --> 00:45:18,490
sit down my mind is completely blown by

985
00:45:22,350 --> 00:45:20,260
what I'm hearing that's absolutely

986
00:45:24,960 --> 00:45:22,360
fascinating but what are you doing right

987
00:45:27,750 --> 00:45:24,970
at the moment okay so I'm currently

988
00:45:29,970 --> 00:45:27,760

working for the inspiration Center for

989

00:45:31,350 --> 00:45:29,980

biodiversity and heritage and we're

990

00:45:32,400 --> 00:45:31,360

really interested in in basically

991

00:45:35,910 --> 00:45:32,410

everything that's happened in Australia

992

00:45:37,860 --> 00:45:35,920

over the last 200,000 years so my

993

00:45:40,500 --> 00:45:37,870

particular project we're actually

994

00:45:42,600 --> 00:45:40,510

working at some some caves in Borneo

995

00:45:44,490 --> 00:45:42,610

which is still relevant to Australia so

996

00:45:45,750 --> 00:45:44,500

we're looking at the population the

997

00:45:47,550 --> 00:45:45,760

arrival of the first humans into

998

00:45:50,160 --> 00:45:47,560

Australia and the spread of migration

999

00:45:52,050 --> 00:45:50,170

like this so we're working at this cave

1000

00:45:54,960 --> 00:45:52,060

system called the Nia caves in Borneo

1001
00:45:56,460 --> 00:45:54,970
and it's got some of the oldest human

1002
00:45:57,690 --> 00:45:56,470
remains in Southeast Asia

1003
00:45:58,860 --> 00:45:57,700
at the time when they were first

1004
00:46:01,320 --> 00:45:58,870
discovered they were the oldest human

1005
00:46:03,390 --> 00:46:01,330
remains in the world

1006
00:46:05,580 --> 00:46:03,400
and they were quite controversially

1007
00:46:09,240 --> 00:46:05,590
linked to Tasmanian Aboriginal

1008
00:46:10,710 --> 00:46:09,250
Australians we've been going back and

1009
00:46:13,050 --> 00:46:10,720
we've been reanalyzing some of the bones

1010
00:46:14,700 --> 00:46:13,060
were found there and doing some new

1011
00:46:17,340 --> 00:46:14,710
excavations so looking for some new

1012
00:46:20,280 --> 00:46:17,350
things and my project particularly I'm

1013
00:46:22,410 --> 00:46:20,290

extracting the protein from the bones so

1014

00:46:25,800 --> 00:46:22,420

you may have heard of ancient DNA it's

1015

00:46:27,900 --> 00:46:25,810

become quite a big field but what most

1016

00:46:29,670 --> 00:46:27,910

people don't realize is that the protein

1017

00:46:31,470 --> 00:46:29,680

in your bones preserves better than DNA

1018

00:46:35,550 --> 00:46:31,480

and it can probably tell you everything

1019

00:46:38,670 --> 00:46:35,560

that DNA can I did not know that it's

1020

00:46:40,410 --> 00:46:38,680

it's quite a new field so DNA tends to

1021

00:46:42,270 --> 00:46:40,420

degrade quite quickly in places like

1022

00:46:44,460 --> 00:46:42,280

Southeast Asia where it's quite warm and

1023

00:46:45,960 --> 00:46:44,470

quite wet but the protein gets bound up

1024

00:46:47,850 --> 00:46:45,970

in the minerals in your bones and it can

1025

00:46:50,190 --> 00:46:47,860

stick around for a lot longer and where

1026

00:46:53,760 --> 00:46:50,200

DNA tells you about what you could look

1027

00:46:55,800 --> 00:46:53,770

like protein shows you the end result so

1028

00:46:58,140 --> 00:46:55,810

the interaction between your DNA and the

1029

00:47:00,150 --> 00:46:58,150

environment so you can see what diseases

1030

00:47:01,770 --> 00:47:00,160

you had what you're eating what you look

1031

00:47:03,870 --> 00:47:01,780

like who you were whether you are male

1032

00:47:06,390 --> 00:47:03,880

or female how old you were potentially

1033

00:47:08,490 --> 00:47:06,400

so anything we can get from DNA we can

1034

00:47:09,930 --> 00:47:08,500

probably get from protein and it's gonna

1035

00:47:13,170 --> 00:47:09,940

last a lot longer in a tropical

1036

00:47:16,350 --> 00:47:13,180

environment I need to take a deep breath

1037

00:47:18,120 --> 00:47:16,360

after that that was so interesting and

1038

00:47:21,150 --> 00:47:18,130

where can people find out more about you

1039

00:47:23,580 --> 00:47:21,160

or what you do so our research center

1040

00:47:25,740 --> 00:47:23,590

has a fantastic website actually if you

1041

00:47:27,270 --> 00:47:25,750

just google Australia's epic story you

1042

00:47:28,770 --> 00:47:27,280

will find our website and it's got

1043

00:47:31,020 --> 00:47:28,780

information about all of the human

1044

00:47:33,240 --> 00:47:31,030

evolution work all of the Australian

1045

00:47:35,190 --> 00:47:33,250

Aboriginal archaeology work and also the

1046

00:47:38,230 --> 00:47:35,200

biodiversity stuff

1047

00:47:42,370 --> 00:47:38,240

Australia's epic story really a story

1048

00:47:47,120 --> 00:47:42,380

well thank you very much thank you we

1049

00:47:50,870 --> 00:47:48,950

well I think I've come to the right

1050

00:47:53,930 --> 00:47:50,880

table folks not only is there champagne

1051
00:47:58,339 --> 00:47:53,940
on the table there's a rat brain a human

1052
00:47:59,960 --> 00:47:58,349
brain and models of Homer Simpson this

1053
00:48:00,440 --> 00:47:59,970
must be a winning table who do we have

1054
00:48:03,170 --> 00:48:00,450
here

1055
00:48:06,339 --> 00:48:03,180
I'm Kelsey Zimmerman I work at UNSW and

1056
00:48:09,140 --> 00:48:06,349
Katherine Baker I also work at UNSW and

1057
00:48:10,849 --> 00:48:09,150
you'll have to tell me what why do I see

1058
00:48:12,979 --> 00:48:10,859
a rat's brain in the human brain and all

1059
00:48:14,479 --> 00:48:12,989
these other things well we look at the

1060
00:48:17,239 --> 00:48:14,489
rat brain to study what happens during

1061
00:48:18,710 --> 00:48:17,249
adolescence adolescent humans and all of

1062
00:48:20,059 --> 00:48:18,720
all of the other adolescent species are

1063
00:48:21,589 --> 00:48:20,069

kind of screwed up and how they learn

1064

00:48:22,969 --> 00:48:21,599

and unlearned fear and they're very

1065

00:48:25,309 --> 00:48:22,979

susceptible to developing things like

1066

00:48:27,920 --> 00:48:25,319

anxiety and depression so what we do is

1067

00:48:30,049 --> 00:48:27,930

we use rep rings like this one and rats

1068

00:48:31,640 --> 00:48:30,059

like our little Mulder here to study

1069

00:48:33,319 --> 00:48:31,650

what happens in the brain when animals

1070

00:48:35,269 --> 00:48:33,329

learn fear and what happens when they

1071

00:48:36,650 --> 00:48:35,279

try to unlearn it and what we can learn

1072

00:48:38,660 --> 00:48:36,660

from that is how the brain is different

1073

00:48:40,009 --> 00:48:38,670

in adolescence and hopefully from that

1074

00:48:41,359 --> 00:48:40,019

we can find different treatments that

1075

00:48:43,849 --> 00:48:41,369

are more effective at treating anxiety

1076
00:48:46,099 --> 00:48:43,859
and depression and young people right

1077
00:48:48,410 --> 00:48:46,109
right so that's why we and I'm holding

1078
00:48:50,960 --> 00:48:48,420
up here folks it's a little Little flask

1079
00:48:54,559 --> 00:48:50,970
ll with a rat oh it's tiny rats brain is

1080
00:48:56,059 --> 00:48:54,569
absolutely tiny commit that's an

1081
00:49:00,739 --> 00:48:56,069
adolescent brain there's still about the

1082
00:49:03,380 --> 00:49:00,749
same size but Santa made uh by one

1083
00:49:04,160 --> 00:49:03,390
centimeter by 1 centimeter yes smaller

1084
00:49:06,829 --> 00:49:04,170
than you think

1085
00:49:10,810 --> 00:49:06,839
but the adolescent human brain is not

1086
00:49:13,180 --> 00:49:10,820
dissimilar in size to the adult brain

1087
00:49:15,220 --> 00:49:13,190
it's probably a little bit smaller but

1088
00:49:17,310 --> 00:49:15,230

it's generally undergoing a lot of

1089

00:49:19,870 --> 00:49:17,320

development early in life and by

1090

00:49:23,890 --> 00:49:19,880

actually our brain continues develop

1091

00:49:25,120 --> 00:49:23,900

into our early 20s so actually one of

1092

00:49:26,800 --> 00:49:25,130

the interesting things that adolescence

1093

00:49:28,450 --> 00:49:26,810

is that our brain is rapidly growing up

1094

00:49:29,920 --> 00:49:28,460

until around adolescence and then

1095

00:49:30,700 --> 00:49:29,930

prefrontal cortex which is the area

1096

00:49:32,250 --> 00:49:30,710

that's involved in a lotta

1097

00:49:35,590 --> 00:49:32,260

decision-making and emotional regulation

1098

00:49:37,090 --> 00:49:35,600

starts to prune so we lose about 50% of

1099

00:49:38,770 --> 00:49:37,100

the synapses which are the connections

1100

00:49:40,270 --> 00:49:38,780

between different neurons over the

1101

00:49:42,430 --> 00:49:40,280

course of adolescence so the brain

1102

00:49:44,740 --> 00:49:42,440

becomes a lot more refined so that part

1103

00:49:46,090 --> 00:49:44,750

is actually while some of the neurons

1104

00:49:47,350 --> 00:49:46,100

are growing in different places it's

1105

00:49:49,300 --> 00:49:47,360

getting a lot more refined and

1106

00:49:50,710 --> 00:49:49,310

streamlined so that's kind of part of

1107

00:49:52,570 --> 00:49:50,720

the reason why adolescent brains can be

1108

00:49:55,120 --> 00:49:52,580

so sensitive to environmental stressors

1109

00:49:57,340 --> 00:49:55,130

or other stressful situations is because

1110

00:50:01,560 --> 00:49:57,350

it's a very vulnerable window where

1111

00:50:06,730 --> 00:50:05,260

we certainly do yeah so another part of

1112

00:50:08,350 --> 00:50:06,740

research we have in our lab is actually

1113

00:50:10,690 --> 00:50:08,360

looking at affective junk food diets in

1114

00:50:13,090 --> 00:50:10,700

adolescents and we find that actually

1115

00:50:15,490 --> 00:50:13,100

adolescents are much more sensitive to

1116

00:50:17,260 --> 00:50:15,500

these type of diets than adults are so

1117

00:50:20,200 --> 00:50:17,270

in some of my work we've shown that an

1118

00:50:25,030 --> 00:50:20,210

adolescent rat is impaired in spatial

1119

00:50:29,760 --> 00:50:25,040

memories so earlier then saying I don't

1120

00:50:32,410 --> 00:50:29,770

rat is fed the same diet person comes in

1121

00:50:34,150 --> 00:50:32,420

Homer Simpson is so I've got a diagram

1122

00:50:35,860 --> 00:50:34,160

here about how we test for special

1123

00:50:38,140 --> 00:50:35,870

memories in the right so we've got -

1124

00:50:40,330 --> 00:50:38,150

Homer Simpson's here and basically rats

1125

00:50:42,850 --> 00:50:40,340

like novel things so I've got a little

1126

00:50:45,280 --> 00:50:42,860

diagram a little toy rat and he's like

1127

00:50:47,410 --> 00:50:45,290

sniffing both of them but after five

1128

00:50:49,540 --> 00:50:47,420

minutes when he's back in his home cage

1129

00:50:51,300 --> 00:50:49,550

I'll move one of these Homer Simpson's

1130

00:50:54,580 --> 00:50:51,310

and he has to go back into the cage and

1131

00:50:56,230 --> 00:50:54,590

find which one is the novel one and so a

1132

00:50:58,050 --> 00:50:56,240

normal rat will spend more time

1133

00:51:01,300 --> 00:50:58,060

investigating and sniffing around this

1134

00:51:03,250 --> 00:51:01,310

Homer Simpson in the new location but

1135

00:51:05,890 --> 00:51:03,260

the rat that's been fed this high-fat

1136

00:51:08,050 --> 00:51:05,900

high-sugar diet will forget and it'll

1137

00:51:10,030 --> 00:51:08,060

like go and explore like both of them

1138

00:51:11,350 --> 00:51:10,040

equally so that's how we test spatial

1139

00:51:14,740 --> 00:51:11,360

memories in rats

1140

00:51:16,060 --> 00:51:14,750

Wow I have come to the right table where

1141

00:51:18,970 --> 00:51:16,070

can people find out more about your

1142

00:51:21,610 --> 00:51:18,980

research we have a website our boss is

1143

00:51:23,650 --> 00:51:21,620

dr. professor Rick Richardson at UNSW

1144

00:51:24,760 --> 00:51:23,660

and so we're under the Richardson lab

1145

00:51:26,050 --> 00:51:24,770

and there's a lot more pictures and

1146

00:51:28,420 --> 00:51:26,060

information about the different research

1147

00:51:33,610 --> 00:51:28,430

that we do thank you very much thank you

1148

00:51:37,060 --> 00:51:33,620

very much thank you and it's time for

1149

00:51:39,940 --> 00:51:37,070

another table hello hello and who do we

1150

00:51:42,070 --> 00:51:39,950

have here and what do you do my name is

1151

00:51:45,340 --> 00:51:42,080

t'keyah Venus I'm a developmental

1152

00:51:48,610 --> 00:51:45,350

linguist which means that I study

1153

00:51:51,370 --> 00:51:48,620

language as a phenomenon and especially

1154

00:51:54,070 --> 00:51:51,380

how people learn it so how it develops

1155

00:51:58,480 --> 00:51:54,080

from young people just before they're

1156

00:52:01,530 --> 00:51:58,490

born until about five years of age from

1157

00:52:03,820 --> 00:52:01,540

my very limited understanding is that is

1158

00:52:06,610 --> 00:52:03,830

exactly at the time where the human

1159

00:52:12,130 --> 00:52:06,620

brain is like a Spanish listening and

1160

00:52:15,130 --> 00:52:12,140

learning an incredible rate and sponge

1161

00:52:17,980 --> 00:52:15,140

its presence that sponge is already

1162

00:52:20,620 --> 00:52:17,990

there before birth and the ears are also

1163

00:52:23,530 --> 00:52:20,630

functioning before birth so the sponge

1164

00:52:25,210 --> 00:52:23,540

starts absorbing before birth I think we

1165

00:52:28,960 --> 00:52:25,220

always have to keep in mind that birth

1166

00:52:30,760 --> 00:52:28,970

is just a benchmark event in life but

1167

00:52:32,620 --> 00:52:30,770

it's not when development starts

1168

00:52:35,170 --> 00:52:32,630

language development starts slightly

1169

00:52:37,270 --> 00:52:35,180

before that and especially the first and

1170

00:52:40,540 --> 00:52:37,280

second year of life are incredibly

1171

00:52:42,970 --> 00:52:40,550

important in in building the foundation

1172

00:52:44,560 --> 00:52:42,980

for further language development I mean

1173

00:52:46,630 --> 00:52:44,570

children get jokes only when they're

1174

00:52:48,810 --> 00:52:46,640

maybe eight or nine eight ten that's

1175

00:52:51,010 --> 00:52:48,820

they're still developing their bit

1176

00:52:53,680 --> 00:52:51,020

disabilities of language but the big

1177

00:52:56,170 --> 00:52:53,690

foundation blocks are created within the

1178

00:52:57,610 --> 00:52:56,180

first term yes yes yes you're right III

1179

00:53:00,580 --> 00:52:57,620

think there are many things that

1180

00:53:01,780 --> 00:53:00,590

children will grow to understand but if

1181

00:53:05,020 --> 00:53:01,790

you're talking about jokes

1182

00:53:07,770 --> 00:53:05,030

I mean being an uncle myself even when

1183

00:53:10,870 --> 00:53:07,780

the kids were three and four and five

1184

00:53:13,210 --> 00:53:10,880

they found things so funny and you can

1185

00:53:14,830 --> 00:53:13,220

make them laugh so hard isn't that

1186

00:53:18,520 --> 00:53:14,840

interesting that the sense of humor

1187

00:53:20,890 --> 00:53:18,530

kicks in so early I find it very hard to

1188

00:53:25,840 --> 00:53:20,900

1188 speak to that because I'm a phonologist

1189

00:53:28,150 --> 00:53:25,850

so what I can observe is anecdotally how

1190

00:53:30,070 --> 00:53:28,160

children around me develop language and

1191

00:53:32,680 --> 00:53:30,080

develop jokes and develop a sense of

1192

00:53:35,200 --> 00:53:32,690

humor and sometimes can find something

1193

00:53:38,020 --> 00:53:35,210

very funny because they recognize that

1194

00:53:41,380 --> 00:53:38,030

everyone around them is laughing so

1195

00:53:43,030 --> 00:53:41,390

they're laughing at the same time yes

1196

00:53:46,870 --> 00:53:43,040

because that seems to be the thing that

1197

00:53:49,330 --> 00:53:46,880

we do but they might be looking at

1198

00:53:51,970 --> 00:53:49,340

context rather than actually

1199

00:53:54,010 --> 00:53:51,980

understanding why it's funny I guess do

1200

00:53:56,290 --> 00:53:54,020

you make a good point so we think about

1201
00:53:59,500 --> 00:53:56,300
something like a pun for example which

1202
00:54:01,770 --> 00:53:59,510
needs some complexity of thought to

1203
00:54:04,120 --> 00:54:01,780
understand and appreciate the humor that

1204
00:54:06,580 --> 00:54:04,130
really wouldn't come in until a bit

1205
00:54:08,680 --> 00:54:06,590
later you say until a bit later and I

1206
00:54:12,040 --> 00:54:08,690
don't want to be quoted really putting

1207
00:54:14,470 --> 00:54:12,050
really putting an age to that but what

1208
00:54:16,660 --> 00:54:14,480
we can observe that language competence

1209
00:54:18,670 --> 00:54:16,670
is knowing the language but it's also

1210
00:54:21,070 --> 00:54:18,680
knowing how to use it in a social

1211
00:54:21,970 --> 00:54:21,080
context and if you know to laugh at the

1212
00:54:24,190 --> 00:54:21,980
right moment

1213
00:54:27,100 --> 00:54:24,200

you may appear like a confident language

1214

00:54:29,320 --> 00:54:27,110

user but you may not have gotten the

1215

00:54:31,420 --> 00:54:29,330

joke that's interesting that's

1216

00:54:33,100 --> 00:54:31,430

fascinating and again folks is one of

1217

00:54:35,200 --> 00:54:33,110

the many fascinating scientists here

1218

00:54:37,960 --> 00:54:35,210

tonight are you online where can people

1219

00:54:40,360 --> 00:54:37,970

find out more about what you do we are

1220

00:54:42,970 --> 00:54:40,370

the child language lab at at Macquarie

1221

00:54:45,790 --> 00:54:42,980

University which means that we are also

1222

00:54:48,370 --> 00:54:45,800

always looking for little scientists to

1223

00:54:49,780 --> 00:54:48,380

help us with our research I think the

1224

00:54:51,870 --> 00:54:49,790

best thing to do would actually be

1225

00:54:55,609 --> 00:54:51,880

googling for child language lab

1226

00:54:57,079 --> 00:54:55,619

Macquarie University and then find us

1227

00:54:58,700 --> 00:54:57,089

there's the clue folks if you are

1228

00:55:00,769 --> 00:54:58,710

interested in that sort of thing thank

1229

00:55:04,160 --> 00:55:00,779

you very much thank you very much and

1230

00:55:05,719 --> 00:55:04,170

ever good night I've come out here to

1231

00:55:07,459 --> 00:55:05,729

the Courtyard in front of the the

1232

00:55:07,819 --> 00:55:07,469

Powerhouse Museum hello who do we have

1233

00:55:11,329 --> 00:55:07,829

here

1234

00:55:12,829 --> 00:55:11,339

adjacent hurry and next to your

1235

00:55:15,440 --> 00:55:12,839

telescope and you're just telling people

1236

00:55:18,049 --> 00:55:15,450

about Jupiter and what are you finding

1237

00:55:20,479 --> 00:55:18,059

is fascinating people tonight is it

1238

00:55:21,950 --> 00:55:20,489

because you're focused on Jupiter so

1239

00:55:24,229 --> 00:55:21,960

part of it is Jupiter and the fact that

1240

00:55:26,120 --> 00:55:24,239

you can actually see this detail on the

1241

00:55:27,499 --> 00:55:26,130

surface so you'll see some stripes which

1242

00:55:29,029 --> 00:55:27,509

are the different gases that make up

1243

00:55:31,509 --> 00:55:29,039

Jupiter and you're actually seeing

1244

00:55:34,969 --> 00:55:31,519

detail on the surface of a planet that's

1245

00:55:36,829 --> 00:55:34,979

720 million kilometres away it's pretty

1246

00:55:39,469 --> 00:55:36,839

mind-blowing stuff how many light

1247

00:55:44,569 --> 00:55:39,479

seconds there's one for you oh it's

1248

00:55:46,759 --> 00:55:44,579

actually about 45 minutes so well you

1249

00:55:50,209 --> 00:55:46,769

got me well done good answer 45 light

1250

00:55:52,579 --> 00:55:50,219

minutes about that yes that's it let's

1251
00:55:55,579 --> 00:55:52,589
gang up I'm gazing up now there it is

1252
00:55:58,609 --> 00:55:55,589
that one yes so that is it that is it

1253
00:56:00,700 --> 00:55:58,619
get your laser out yes that's right it's

1254
00:56:02,870 --> 00:56:00,710
stupid around yeah that's Jupiter and

1255
00:56:04,849 --> 00:56:02,880
people are lined up to look for your

1256
00:56:07,130 --> 00:56:04,859
telescope and this bright one down here

1257
00:56:09,079 --> 00:56:07,140
so that one right down near the horizon

1258
00:56:11,269 --> 00:56:09,089
towards the West is actually Venus

1259
00:56:14,029 --> 00:56:11,279
that's Venus so we've got Venus over

1260
00:56:16,219 --> 00:56:14,039
here higher up we do have Jupiter that

1261
00:56:17,420 --> 00:56:16,229
we just saw a little bit further along

1262
00:56:20,209 --> 00:56:17,430
in that Lionel

1263
00:56:22,910 --> 00:56:20,219

there's no that's Mars okay we've got

1264

00:56:24,739 --> 00:56:22,920

Saturn just over here and a little bit

1265

00:56:27,440 --> 00:56:24,749

further down we've got Mars just only

1266

00:56:29,779 --> 00:56:27,450

doesn't Mars look bright tonight it does

1267

00:56:31,519 --> 00:56:29,789

it's actually almost it's just gone past

1268

00:56:34,009 --> 00:56:31,529

the closest point to earth for the last

1269

00:56:36,979 --> 00:56:34,019

three years or so and it was just at

1270

00:56:39,319 --> 00:56:36,989

opposition so that is where the Sun

1271

00:56:41,239 --> 00:56:39,329

Earth and Mars all line up in one nice

1272

00:56:43,160 --> 00:56:41,249

big straight long line well let's wander

1273

00:56:45,410 --> 00:56:43,170

over to your telescope now folks I'll

1274

00:56:47,680 --> 00:56:45,420

just bend over here and have a look

1275

00:56:50,660 --> 00:56:47,690

through this little eyepiece and Wow

1276

00:56:53,289 --> 00:56:50,670

look at that and you can see four of the

1277

00:56:58,569 --> 00:56:57,069

actually I can see five percent sure if

1278

00:56:59,920 --> 00:56:58,579

that fifth one is actually a minute I'd

1279

00:57:01,750 --> 00:56:59,930

have to double-check your little stuff

1280

00:57:04,480 --> 00:57:01,760

you'll be a star way way way back behind

1281

00:57:06,160 --> 00:57:04,490

it all but we do have the four largest

1282

00:57:10,120 --> 00:57:06,170

moons of Jupiter we've got Io Europa

1283

00:57:11,859 --> 00:57:10,130

Ganymede and Callisto yeah so they're

1284

00:57:13,480 --> 00:57:11,869

the four large ones that we can see that

1285

00:57:15,250 --> 00:57:13,490

almost like stars and they're right

1286

00:57:17,319 --> 00:57:15,260

there and you know what if I look up

1287

00:57:20,440 --> 00:57:17,329

with my naked eye now and I'm looking

1288

00:57:22,450 --> 00:57:20,450

towards Jupiter am I fooling myself to

1289

00:57:25,240 --> 00:57:22,460

think I can see one of the moons above

1290

00:57:28,599 --> 00:57:25,250

it so whilst it may look like a moon

1291

00:57:29,799 --> 00:57:28,609

it's actually a star that one I can

1292

00:57:30,940 --> 00:57:29,809

never pronounce it correctly it's

1293

00:57:32,980 --> 00:57:30,950

pronounced something along the lines of

1294

00:57:35,650 --> 00:57:32,990

Zuber and I Kenobi Kenobi

1295

00:57:38,589 --> 00:57:35,660

yeah and it's actually a binary star so

1296

00:57:40,780 --> 00:57:38,599

it's two stars orbiting one another and

1297

00:57:42,069 --> 00:57:40,790

spinning around in space alright well

1298

00:57:44,079 --> 00:57:42,079

thank you very much for that little

1299

00:57:45,660 --> 00:57:44,089

lesson and as I can see all the people

1300

00:57:48,220 --> 00:57:45,670

lined up here looks like a very

1301
00:57:50,049 --> 00:57:48,230
successful night for astronomy engage

1302
00:57:57,250 --> 00:57:50,059
and david has bank and for Sydney

1303
00:57:59,349 --> 00:57:57,260
Observatory as well that was the final

1304
00:58:01,720 --> 00:57:59,359
part of our three-part series of speed

1305
00:58:03,220 --> 00:58:01,730
Mead the scientists big thank you to

1306
00:58:05,000 --> 00:58:03,230
Frankie Lee from the powerhouse museum

1307
00:58:21,520 --> 00:58:05,010
for making it all possible

1308
00:58:25,910 --> 00:58:23,810
thank you for listening to the skeptic

1309
00:58:28,820 --> 00:58:25,920
zone this week and a big thank you a big

1310
00:58:31,190 --> 00:58:28,830
THANK YOU to Angus Firth who was my

1311
00:58:34,130 --> 00:58:31,200
intern for this episode who came along

1312
00:58:37,040 --> 00:58:34,140
and edited and mixed a lot of today's

1313
00:58:39,800 --> 00:58:37,050

episode and he did a fantastic job well

1314

00:58:42,140 --> 00:58:39,810

done anger sir I think you'll be doing

1315

00:58:42,950 --> 00:58:42,150

some more skeptics own editing in the

1316

00:58:45,170 --> 00:58:42,960

near future

1317

00:58:47,690 --> 00:58:45,180

now don't forget of course the big

1318

00:58:51,290 --> 00:58:47,700

skeptic on convention coming up in

1319

00:58:53,450 --> 00:58:51,300

October and you if you're in Sydney

1320

00:58:56,900 --> 00:58:53,460

please come along to the free event on

1321

00:58:59,150 --> 00:58:56,910

the eve of skeptic on which is a big

1322

00:59:00,680 --> 00:58:59,160

welcome event at the Occidental hotel in

1323

00:59:03,440 --> 00:59:00,690

we need where we normally have skeptics

1324

00:59:05,270 --> 00:59:03,450

in the pub link on this week's show

1325

00:59:08,150 --> 00:59:05,280

notes if you want to come along please

1326

00:59:09,950 --> 00:59:08,160

RSVP remember it's free it's just nice

1327

00:59:12,050 --> 00:59:09,960

to know the numbers we're going to have

1328

00:59:15,170 --> 00:59:12,060

a big trivia night as well we're gonna

1329

00:59:17,120 --> 00:59:15,180

take out take up two floors of the

1330

00:59:19,040 --> 00:59:17,130

Occidental hotel it should be a really

1331

00:59:21,440 --> 00:59:19,050

great night of course while you're there

1332

00:59:24,370 --> 00:59:21,450

if you haven't done so already please

1333

00:59:26,720 --> 00:59:24,380

book your tickets for a skeptic on

1334

00:59:29,450 --> 00:59:26,730

coming up on next week's show we're

1335

00:59:31,010 --> 00:59:29,460

going to be chatting to the challenge

1336

00:59:32,750 --> 00:59:31,020

coordinator and investigator from an

1337

00:59:35,450 --> 00:59:32,760

Australian skeptics Ian Bryce we've had

1338

00:59:37,130 --> 00:59:35,460

to bump his segment from this week to

1339

00:59:40,310 --> 00:59:37,140

next week because this week's show was

1340

00:59:42,260 --> 00:59:40,320

quite full also we chat to Celestia

1341

00:59:45,170 --> 00:59:42,270

award from the squaring the strange

1342

00:59:48,050 --> 00:59:45,180

podcast a wonderful sceptical podcast

1343

00:59:51,560 --> 00:59:48,060

coming out of well I guess it's coming

1344

00:59:54,020 --> 00:59:51,570

out of Albuquerque New Mexico and Las

1345

00:59:55,790 --> 00:59:54,030

Vegas Nevada with her co-hosts

1346

00:59:59,210 --> 00:59:55,800

Ben and Pasquale anyway we're gonna be

1347

01:00:00,800 --> 00:59:59,220

chatting to Celestia Ward and she is if

1348

01:00:04,940 --> 01:00:00,810

you might remember some people might

1349

01:00:07,670 --> 01:00:04,950

know she is a fantastic artist in fact

1350

01:00:09,859 --> 01:00:07,680

the caricature of me and may not we both

1351

01:00:12,349 --> 01:00:09,869

use on our business cards was done by a

1352

01:00:15,530 --> 01:00:12,359

Celestia a big thank you to those people

1353

01:00:19,670 --> 01:00:15,540

who continue to support the skeptic zone

1354

01:00:23,000 --> 01:00:19,680

with donations and PayPal micro payments

1355

01:00:24,460 --> 01:00:23,010

and via patreon and new people and you

1356

01:00:26,839 --> 01:00:24,470

know who you are

1357

01:00:28,099 --> 01:00:26,849

the only reason really the show keeps

1358

01:00:30,589 --> 01:00:28,109

going because I certainly couldn't

1359

01:00:32,329 --> 01:00:30,599

afford to do this show there the time it

1360

01:00:35,020 --> 01:00:32,339

takes and the equipment and all the rest

1361

01:00:38,020 --> 01:00:35,030

of the things without real financials

1362

01:00:40,710 --> 01:00:38,030

bought from listeners like you and if

1363

01:00:44,080 --> 01:00:40,720

you've never thought about contributing

1364

01:00:46,150 --> 01:00:44,090

maybe even \$5 a month goes a long way

1365

01:00:49,510 --> 01:00:46,160

here the skeptic zone via patreon or

1366

01:00:51,490 --> 01:00:49,520

whatever links at skeptic zone TV much

1367

01:00:53,710 --> 01:00:51,500

appreciated by myself and the whole team

1368

01:00:56,920 --> 01:00:53,720

here at the skeptic zone and a big shout

1369

01:00:59,410 --> 01:00:56,930

out to my friends enjoying Dragon Con

1370

01:01:03,660 --> 01:00:59,420

you know Atlanta Georgia right now

1371

01:01:06,640 --> 01:01:03,670

I've been following various threads and

1372

01:01:08,230 --> 01:01:06,650

postings and videos on YouTube and

1373

01:01:10,180 --> 01:01:08,240

Facebook and Twitter and all sorts of

1374

01:01:12,160 --> 01:01:10,190

things man I'm so jealous I wish I was

1375

01:01:14,650 --> 01:01:12,170

there I hope maybe I can be there

1376

01:01:16,300 --> 01:01:14,660

next year I haven't been to Dragon Con

1377

01:01:19,180 --> 01:01:16,310

for about eight years my first Dragon

1378

01:01:21,130 --> 01:01:19,190

Con was 10 years ago and that's in fact

1379

01:01:24,310 --> 01:01:21,140

where I recorded the first segment for

1380

01:01:26,230 --> 01:01:24,320

the skeptic zone which I guess in a way

1381

01:01:29,080 --> 01:01:26,240

this weekend marks the 10th anniversary

1382

01:01:31,390 --> 01:01:29,090

of the first bit of recording for the

1383

01:01:32,890 --> 01:01:31,400

skeptics and so there you go but for

1384

01:01:39,700 --> 01:01:32,900

this week this is Richard Saunders

1385

01:01:41,470 --> 01:01:39,710

signing off from Sydney Australia you've

1386

01:01:45,880 --> 01:01:41,480

been listening to the skeptic zone

1387

01:01:50,320 --> 01:01:45,890

podcast please visit our website at WWDC

1388

01:01:52,870 --> 01:01:50,330

be for show notes contacts and to access

1389

01:01:56,470 --> 01:01:52,880

the bat catalog of episodes going back

1390

01:02:00,130 --> 01:01:56,480

to 2008 you can follow the skeptic zone

1391

01:02:02,530 --> 01:02:00,140

podcast on twitter at skeptic zone visit

1392

01:02:03,390 --> 01:02:02,540

our facebook page or leave a review on

1393

01:02:06,100 --> 01:02:03,400

itunes

1394

01:02:09,460 --> 01:02:06,110

you can also support the skeptic zone

1395

01:02:12,180 --> 01:02:09,470

via patreon or PayPal the skeptic zone

1396

01:02:14,560 --> 01:02:12,190

podcast is an independent production

1397

01:02:16,690 --> 01:02:14,570

reviews and opinions expressed on the

1398

01:02:19,060 --> 01:02:16,700

skeptic zone and not necessarily those

1399

01:02:20,850 --> 01:02:19,070

of Australian skeptics or any other

1400

01:02:29,660 --> 01:02:20,860

sceptical organisation

1401

01:02:35,279 --> 01:02:32,160

hello all the people who listen after

1402

01:02:36,809 --> 01:02:35,289

the music the post music gang arm maybe

1403

01:02:39,870 --> 01:02:36,819

somebody can come up with a name I've

1404

01:02:41,849 --> 01:02:39,880

had more requests for the dice game so

1405

01:02:44,130 --> 01:02:41,859

here we go I've got a dye in my hand

1406

01:02:46,019 --> 01:02:44,140

it's a 10 sided I'm gonna roll it three

1407

01:02:50,519 --> 01:02:46,029

times which will give me a number

1408

01:02:53,269 --> 01:02:50,529

between 0 and 1000 so you use your

1409

01:02:56,039 --> 01:02:53,279

predicting power now folks predict away

1410

01:02:58,710 --> 01:02:56,049

before I roll the first number have you

1411

01:03:03,750 --> 01:02:58,720

got your number between 0 or from 1 to

1412

01:03:05,359 --> 01:03:03,760

1000 good I'm just waiting for you yes

1413

01:03:19,819 --> 01:03:05,369

you've got it all right here we go