

WEBVTT

NOTE duration:"01:13:00.5760000"

NOTE language:en-us

NOTE Confidence: 0.804346084594727

00:00:00.000 --> 00:00:04.624 It's a real pleasure to welcome my friend

NOTE Confidence: 0.804346084594727

00:00:04.624 --> 00:00:08.307 and colleague Dean Bobs from Caltech.

NOTE Confidence: 0.804346084594727

00:00:08.310 --> 00:00:13.486 Dean is a professor in the chance enter.

NOTE Confidence: 0.804346084594727

00:00:13.490 --> 00:00:15.450 In humanities and social Sciences

NOTE Confidence: 0.804346084594727

00:00:15.450 --> 00:00:17.018 in computational neural systems

NOTE Confidence: 0.804346084594727

00:00:17.018 --> 00:00:19.584 program at Caltech, he did his PhD

NOTE Confidence: 0.804346084594727

00:00:19.584 --> 00:00:21.870 with Chris Frith and Ray Dolan.

NOTE Confidence: 0.804346084594727

00:00:21.870 --> 00:00:24.156 So we share a certain degree

NOTE Confidence: 0.804346084594727

00:00:24.156 --> 00:00:25.299 of academic heritage.

NOTE Confidence: 0.804346084594727

00:00:25.300 --> 00:00:28.729 He and I and we also overlapped in Cambridge,

NOTE Confidence: 0.804346084594727

00:00:28.730 --> 00:00:30.090 where we became friends.

NOTE Confidence: 0.804346084594727

00:00:30.090 --> 00:00:32.520 One of the things I really admire

NOTE Confidence: 0.804346084594727

00:00:32.520 --> 00:00:34.718 about Dean is that he was a

NOTE Confidence: 0.804346084594727

00:00:34.718 --> 00:00:36.836 really early adopter of bringing

NOTE Confidence: 0.804346084594727

00:00:36.836 --> 00:00:38.732 principles of behavioral ecology

NOTE Confidence: 0.804346084594727

00:00:38.732 --> 00:00:40.552 to human cognitive neuroscience,

NOTE Confidence: 0.804346084594727

00:00:40.552 --> 00:00:43.296 and I think we're going to hear

NOTE Confidence: 0.804346084594727

00:00:43.296 --> 00:00:45.470 a lot about that today.

NOTE Confidence: 0.804346084594727

00:00:45.470 --> 00:00:47.642 Some other notable things.

NOTE Confidence: 0.804346084594727

00:00:47.642 --> 00:00:50.900 Dean began his career before he

NOTE Confidence: 0.804346084594727

00:00:50.999 --> 00:00:53.904 became a committed neuro scientist

NOTE Confidence: 0.804346084594727

00:00:53.904 --> 00:00:56.809 as a painter and decorator,

NOTE Confidence: 0.804346084594727

00:00:56.810 --> 00:01:00.800 which is rather an unusual career path.

NOTE Confidence: 0.804346084594727

00:01:00.800 --> 00:01:02.714 And another notable thing is that

NOTE Confidence: 0.804346084594727

00:01:02.714 --> 00:01:04.466 Dean's grand rounds is actually

NOTE Confidence: 0.804346084594727

00:01:04.466 --> 00:01:06.110 a rescheduled grand rounds.

NOTE Confidence: 0.804346084594727

00:01:06.110 --> 00:01:08.855 He was meant to be with us in New

NOTE Confidence: 0.804346084594727

00:01:08.855 --> 00:01:11.240 Haven on the day that everything

NOTE Confidence: 0.804346084594727

00:01:11.240 --> 00:01:12.840 shut down in March.

NOTE Confidence: 0.804346084594727

00:01:12.840 --> 00:01:14.252 This exchange between Dean
NOTE Confidence: 0.804346084594727

00:01:14.252 --> 00:01:16.017 and I began on Twitter,
NOTE Confidence: 0.804346084594727

00:01:16.020 --> 00:01:18.533 where I invited him to come speak
NOTE Confidence: 0.804346084594727

00:01:18.533 --> 00:01:21.402 to us because he saw a picture of
NOTE Confidence: 0.804346084594727

00:01:21.402 --> 00:01:23.888 some Donuts that I bought from Donut
NOTE Confidence: 0.804346084594727

00:01:23.888 --> 00:01:26.632 crazy and the hope was that he get
NOTE Confidence: 0.804346084594727

00:01:26.640 --> 00:01:29.118 to share those when he came here.
NOTE Confidence: 0.804346084594727

00:01:29.120 --> 00:01:30.890 We haven't quite managed that,
NOTE Confidence: 0.804346084594727

00:01:30.890 --> 00:01:31.492 we rescheduled.
NOTE Confidence: 0.804346084594727

00:01:31.492 --> 00:01:33.298 Today in the hope that we
NOTE Confidence: 0.804346084594727

00:01:33.298 --> 00:01:34.608 still get to do that,
NOTE Confidence: 0.804346084594727

00:01:34.610 --> 00:01:36.794 and maybe we will still in the future,
NOTE Confidence: 0.804346084594727

00:01:36.800 --> 00:01:37.808 but I'm sorry Dean.
NOTE Confidence: 0.804346084594727

00:01:37.808 --> 00:01:39.320 It's so early for you and
NOTE Confidence: 0.804346084594727

00:01:39.377 --> 00:01:40.887 no Donuts this time around,
NOTE Confidence: 0.804346084594727

00:01:40.890 --> 00:01:42.528 but we're delighted to have you.

NOTE Confidence: 0.804346084594727
00:01:42.530 --> 00:01:44.434 We can't wait to hear your talk,
NOTE Confidence: 0.804346084594727
00:01:44.440 --> 00:01:45.256 so thank you.
NOTE Confidence: 0.804346084594727
00:01:45.256 --> 00:01:46.344 Please take it away.
NOTE Confidence: 0.903122186660767
00:01:47.580 --> 00:01:49.653 Great, thanks for.
NOTE Confidence: 0.903122186660767
00:01:49.653 --> 00:01:53.108 Thanks for that wonderful introduction.
NOTE Confidence: 0.903122186660767
00:01:53.110 --> 00:01:56.620 So what I'm going to talk about today is
NOTE Confidence: 0.903122186660767
00:01:56.620 --> 00:02:00.094 really the some of the older than some of
NOTE Confidence: 0.903122186660767
00:02:00.094 --> 00:02:03.588 the recent research that we've put forward.
NOTE Confidence: 0.903122186660767
00:02:03.590 --> 00:02:07.062 Looking at how we can separate fear and
NOTE Confidence: 0.903122186660767
00:02:07.062 --> 00:02:09.480 anxiety circuits in the brain using.
NOTE Confidence: 0.903122186660767
00:02:09.480 --> 00:02:12.312 Tasks the altar in the spatial
NOTE Confidence: 0.903122186660767
00:02:12.312 --> 00:02:14.737 temporal frequency of the threat
NOTE Confidence: 0.903122186660767
00:02:14.737 --> 00:02:17.419 of the proximal or distal distance
NOTE Confidence: 0.903122186660767
00:02:17.419 --> 00:02:20.620 to a threat and As for dimension.
NOTE Confidence: 0.903122186660767
00:02:20.620 --> 00:02:24.310 This is really been influenced by a lot of
NOTE Confidence: 0.903122186660767

00:02:24.310 --> 00:02:28.038 work from the field of behavioral ecology,
NOTE Confidence: 0.903122186660767

00:02:28.040 --> 00:02:31.930 so I'm going to talk a bit about today's some
NOTE Confidence: 0.903122186660767

00:02:32.021 --> 00:02:35.566 theoretical background about really well.
NOTE Confidence: 0.903122186660767

00:02:35.570 --> 00:02:38.098 Why I got to this point and give
NOTE Confidence: 0.903122186660767

00:02:38.098 --> 00:02:41.089 you some background in some of the
NOTE Confidence: 0.903122186660767

00:02:41.089 --> 00:02:43.878 more contemporary theories of how we
NOTE Confidence: 0.903122186660767

00:02:43.878 --> 00:02:46.458 really think about fear and anxiety.
NOTE Confidence: 0.903122186660767

00:02:46.460 --> 00:02:50.105 So I want to start by thanking all of
NOTE Confidence: 0.903122186660767

00:02:50.105 --> 00:02:53.479 these individuals in these funding
NOTE Confidence: 0.903122186660767

00:02:53.479 --> 00:02:56.347 bodies for their collaborations
NOTE Confidence: 0.903122186660767

00:02:56.347 --> 00:02:59.288 and friendships over the years,
NOTE Confidence: 0.903122186660767

00:02:59.290 --> 00:03:02.445 and particularly with colleague demo
NOTE Confidence: 0.903122186660767

00:03:02.445 --> 00:03:06.234 service that Google Deep Mind we
NOTE Confidence: 0.903122186660767

00:03:06.234 --> 00:03:09.444 still collaborate and where we began
NOTE Confidence: 0.903122186660767

00:03:09.444 --> 00:03:13.099 to work together on some of these
NOTE Confidence: 0.903122186660767

00:03:13.099 --> 00:03:16.021 early studies of fear and anxiety.

NOTE Confidence: 0.903122186660767
00:03:16.030 --> 00:03:16.998 My lab.
NOTE Confidence: 0.903122186660767
00:03:16.998 --> 00:03:19.902 Which was originally at Columbia University
NOTE Confidence: 0.903122186660767
00:03:19.902 --> 00:03:22.968 law move to Celtic four years ago.
NOTE Confidence: 0.903122186660767
00:03:22.970 --> 00:03:26.538 Song she only took mainly about his work.
NOTE Confidence: 0.903122186660767
00:03:26.540 --> 00:03:29.015 Along with these collaborations or
NOTE Confidence: 0.903122186660767
00:03:29.015 --> 00:03:31.490 collaboration won't fund my original
NOTE Confidence: 0.903122186660767
00:03:31.559 --> 00:03:33.789 PhD supervisors Chris Frith and.
NOTE Confidence: 0.903122186660767
00:03:33.790 --> 00:03:35.806 Write down in my again another
NOTE Confidence: 0.903122186660767
00:03:35.806 --> 00:03:36.814 long term collaborator.
NOTE Confidence: 0.903122186660767
00:03:36.820 --> 00:03:39.853 I talk a lot about some of our theories,
NOTE Confidence: 0.903122186660767
00:03:39.860 --> 00:03:42.219 which is Peter, Diane and then some.
NOTE Confidence: 0.903122186660767
00:03:42.220 --> 00:03:44.580 My colleagues from the field would be able
NOTE Confidence: 0.903122186660767
00:03:44.580 --> 00:03:46.928 to colegi and colleagues from Princeton,
NOTE Confidence: 0.903122186660767
00:03:46.930 --> 00:03:47.944 particularly Daniel Door
NOTE Confidence: 0.903122186660767
00:03:47.944 --> 00:03:48.958 Bensimon typically shut.
NOTE Confidence: 0.903122186660767

00:03:48.960 --> 00:03:50.332 That came to University,
NOTE Confidence: 0.903122186660767

00:03:50.332 --> 00:03:52.660 ought to acknowledge people before gets tax.
NOTE Confidence: 0.903122186660767

00:03:52.660 --> 00:03:55.530 I think they're playing important role in
NOTE Confidence: 0.903122186660767

00:03:55.530 --> 00:03:58.509 the research that I'm going to talk about.
NOTE Confidence: 0.903122186660767

00:03:58.510 --> 00:04:00.730 And of course my lap.
NOTE Confidence: 0.903122186660767

00:04:00.730 --> 00:04:04.138 Now that I'll talk about some of the
NOTE Confidence: 0.903122186660767

00:04:04.138 --> 00:04:06.948 more recent work that we've done.
NOTE Confidence: 0.903122186660767

00:04:06.950 --> 00:04:07.282 OK,
NOTE Confidence: 0.903122186660767

00:04:07.282 --> 00:04:10.270 So what I want to do is sort of
NOTE Confidence: 0.903122186660767

00:04:10.369 --> 00:04:13.890 start by going over the really the
NOTE Confidence: 0.903122186660767

00:04:13.890 --> 00:04:16.949 the keyholder core sort of theories
NOTE Confidence: 0.903122186660767

00:04:16.949 --> 00:04:20.337 of how we define an approach fear.
NOTE Confidence: 0.903122186660767

00:04:20.340 --> 00:04:22.260 In in the modern era,
NOTE Confidence: 0.903122186660767

00:04:22.260 --> 00:04:24.934 and there's lots of theories out there.
NOTE Confidence: 0.903122186660767

00:04:24.940 --> 00:04:27.756 We can go back to many old theories
NOTE Confidence: 0.903122186660767

00:04:27.756 --> 00:04:29.530 of fear and anxiety,

NOTE Confidence: 0.903122186660767

00:04:29.530 --> 00:04:33.306 but there's been a real burst of theoretical.

NOTE Confidence: 0.903122186660767

00:04:33.310 --> 00:04:34.854 Approaches to failing sides.

NOTE Confidence: 0.903122186660767

00:04:34.854 --> 00:04:37.551 This is really captured in this article

NOTE Confidence: 0.903122186660767

00:04:37.551 --> 00:04:40.063 that I was the moderator on an edge.

NOTE Confidence: 0.903122186660767

00:04:40.070 --> 00:04:42.569 New songs that came out last year.

NOTE Confidence: 0.903122186660767

00:04:42.570 --> 00:04:45.125 So although recommend if you guys are

NOTE Confidence: 0.903122186660767

00:04:45.125 --> 00:04:47.549 interested in trying to delve into these,

NOTE Confidence: 0.903122186660767

00:04:47.550 --> 00:04:50.126 there is a little bit more than I

NOTE Confidence: 0.903122186660767

00:04:50.126 --> 00:04:52.179 do recommend reading this paper.

NOTE Confidence: 0.903122186660767

00:04:52.180 --> 00:04:56.140 You can get a link to the PDF on my website.

NOTE Confidence: 0.903122186660767

00:04:56.140 --> 00:04:59.716 Which will advertise at the end as well.

NOTE Confidence: 0.903122186660767

00:04:59.720 --> 00:05:03.184 So really, there's been.

NOTE Confidence: 0.903122186660767

00:05:03.184 --> 00:05:08.380 So that four key contemporary theories.

NOTE Confidence: 0.903122186660767

00:05:08.380 --> 00:05:11.028 We can really go from left to right

NOTE Confidence: 0.903122186660767

00:05:11.028 --> 00:05:13.237 there where we have two extremes,

NOTE Confidence: 0.903122186660767

00:05:13.240 --> 00:05:15.473 many of yak panksepp and what planks

NOTE Confidence: 0.903122186660767

00:05:15.473 --> 00:05:17.909 that proposed was that there's really a

NOTE Confidence: 0.903122186660767

00:05:17.909 --> 00:05:20.033 dedicated set of evolved circuits that

NOTE Confidence: 0.903122186660767

00:05:20.101 --> 00:05:21.871 are associated with different emotions

NOTE Confidence: 0.903122186660767

00:05:21.871 --> 00:05:24.344 which you refer to is primal emotions.

NOTE Confidence: 0.903122186660767

00:05:24.344 --> 00:05:26.079 What we're interested in here,

NOTE Confidence: 0.815067768096924

00:05:26.080 --> 00:05:28.848 and really 2 which is fear and panic.

NOTE Confidence: 0.815067768096924

00:05:28.850 --> 00:05:30.794 But he also said that there's

NOTE Confidence: 0.815067768096924

00:05:30.794 --> 00:05:32.903 a place circuit and out wide

NOTE Confidence: 0.815067768096924

00:05:32.903 --> 00:05:34.748 rage circuits you can circuit.

NOTE Confidence: 0.815067768096924

00:05:34.750 --> 00:05:37.846 The circuit can care circuit and this is

NOTE Confidence: 0.815067768096924

00:05:37.846 --> 00:05:40.709 really kind of the extreme in terms of.

NOTE Confidence: 0.815067768096924

00:05:40.710 --> 00:05:42.134 All this overnight circuits

NOTE Confidence: 0.815067768096924

00:05:42.134 --> 00:05:43.558 that we believe exist,

NOTE Confidence: 0.815067768096924

00:05:43.560 --> 00:05:46.971 or at least some of them exist in the

NOTE Confidence: 0.815067768096924

00:05:46.971 --> 00:05:50.624 animal and maybe in the human brain as well.

NOTE Confidence: 0.815067768096924
00:05:50.630 --> 00:05:52.622 If we shift all the way
NOTE Confidence: 0.815067768096924
00:05:52.622 --> 00:05:54.440 over to the other side,
NOTE Confidence: 0.815067768096924
00:05:54.440 --> 00:05:56.969 we can see at least a phone by its
NOTE Confidence: 0.815067768096924
00:05:56.969 --> 00:05:59.346 conceptual act theory where she says
NOTE Confidence: 0.815067768096924
00:05:59.346 --> 00:06:01.376 there's actually no dedicated circuits.
NOTE Confidence: 0.815067768096924
00:06:01.380 --> 00:06:04.502 These circuits that we owe these brain
NOTE Confidence: 0.815067768096924
00:06:04.502 --> 00:06:06.403 regions that determine different
NOTE Confidence: 0.815067768096924
00:06:06.403 --> 00:06:09.301 emotions are not universal and this
NOTE Confidence: 0.815067768096924
00:06:09.301 --> 00:06:11.660 is conglomeration of brain regions
NOTE Confidence: 0.815067768096924
00:06:11.660 --> 00:06:14.162 that combine to create emotion and
NOTE Confidence: 0.815067768096924
00:06:14.162 --> 00:06:17.150 and what Lisa is saying is that
NOTE Confidence: 0.815067768096924
00:06:17.150 --> 00:06:19.990 emotions are created in the cortex.
NOTE Confidence: 0.815067768096924
00:06:19.990 --> 00:06:23.455 The output is through motor systems and.
NOTE Confidence: 0.815067768096924
00:06:23.460 --> 00:06:25.916 I related systems and what we have is
NOTE Confidence: 0.815067768096924
00:06:25.916 --> 00:06:28.365 is called across circuit that makes up
NOTE Confidence: 0.815067768096924

00:06:28.365 --> 00:06:31.218 the emotion in the moment and this is
NOTE Confidence: 0.815067768096924

00:06:31.218 --> 00:06:34.122 an interesting analogy she uses for this is.
NOTE Confidence: 0.815067768096924

00:06:34.122 --> 00:06:37.776 To say that if you take eggs,
NOTE Confidence: 0.815067768096924

00:06:37.780 --> 00:06:39.016 flour, sugar, salt,
NOTE Confidence: 0.815067768096924

00:06:39.016 --> 00:06:42.430 I'm not the cook as you can tell,
NOTE Confidence: 0.815067768096924

00:06:42.430 --> 00:06:45.377 but you mix them in different proportions.
NOTE Confidence: 0.815067768096924

00:06:45.380 --> 00:06:48.327 You can create different types of foods.
NOTE Confidence: 0.815067768096924

00:06:48.330 --> 00:06:51.706 You can have pancakes, bread and so on,
NOTE Confidence: 0.815067768096924

00:06:51.710 --> 00:06:53.820 so this actually argues that
NOTE Confidence: 0.815067768096924

00:06:53.820 --> 00:06:55.508 our emotions are created,
NOTE Confidence: 0.815067768096924

00:06:55.510 --> 00:06:57.620 particularly in the perceptual realm,
NOTE Confidence: 0.815067768096924

00:06:57.620 --> 00:06:59.540 and particularly in humans.
NOTE Confidence: 0.815067768096924

00:06:59.540 --> 00:07:02.420 So what you have here then,
NOTE Confidence: 0.815067768096924

00:07:02.420 --> 00:07:05.115 is these two distinct sort of theories.
NOTE Confidence: 0.815067768096924

00:07:05.120 --> 00:07:07.436 One where there is a dedicated
NOTE Confidence: 0.815067768096924

00:07:07.436 --> 00:07:09.629 hardwired circuit, one where there's

NOTE Confidence: 0.815067768096924
00:07:09.629 --> 00:07:11.994 no dedicated wide second OK.
NOTE Confidence: 0.815067768096924
00:07:12.000 --> 00:07:15.424 Now if you go over to fans Lowe's
NOTE Confidence: 0.815067768096924
00:07:15.424 --> 00:07:18.696 theory which you can see in the green.
NOTE Confidence: 0.815067768096924
00:07:18.700 --> 00:07:19.604 Fans, though,
NOTE Confidence: 0.815067768096924
00:07:19.604 --> 00:07:22.316 argues is a set of this.
NOTE Confidence: 0.815067768096924
00:07:22.320 --> 00:07:24.925 Defensive behaviors are organized around
NOTE Confidence: 0.815067768096924
00:07:24.925 --> 00:07:28.973 distinct set of modes of danger or what
NOTE Confidence: 0.815067768096924
00:07:28.973 --> 00:07:31.697 he calls levels of threat imminence.
NOTE Confidence: 0.815067768096924
00:07:31.700 --> 00:07:33.764 I'll come back to that in a minute
NOTE Confidence: 0.815067768096924
00:07:33.764 --> 00:07:35.847 because this is really the model that's
NOTE Confidence: 0.815067768096924
00:07:35.847 --> 00:07:37.895 been the most influential to me because
NOTE Confidence: 0.815067768096924
00:07:37.895 --> 00:07:39.823 it has one foot in the College in
NOTE Confidence: 0.815067768096924
00:07:39.830 --> 00:07:41.940 one foot in behavioral neuroscience.
NOTE Confidence: 0.815067768096924
00:07:41.940 --> 00:07:43.780 And then another recent model
NOTE Confidence: 0.815067768096924
00:07:43.780 --> 00:07:46.359 is by Journey do and AMP line,
NOTE Confidence: 0.815067768096924

00:07:46.360 --> 00:07:48.929 which they call the two systems theory.
NOTE Confidence: 0.815067768096924

00:07:48.930 --> 00:07:49.261 Well,
NOTE Confidence: 0.815067768096924

00:07:49.261 --> 00:07:51.578 what you have is a defensive set
NOTE Confidence: 0.815067768096924

00:07:51.578 --> 00:07:53.350 of defensive survival circus.
NOTE Confidence: 0.815067768096924

00:07:53.350 --> 00:07:55.625 When talking about fear now
NOTE Confidence: 0.815067768096924

00:07:55.625 --> 00:07:57.445 specifically focused on fear.
NOTE Confidence: 0.815067768096924

00:07:57.450 --> 00:08:00.320 You have a set of circus associated
NOTE Confidence: 0.815067768096924

00:08:00.320 --> 00:08:02.629 with survival behaviors and then on
NOTE Confidence: 0.815067768096924

00:08:02.629 --> 00:08:05.447 top of those circuits you have these I
NOTE Confidence: 0.815067768096924

00:08:05.447 --> 00:08:08.310 order mental or meta representations of fear.
NOTE Confidence: 0.815067768096924

00:08:08.310 --> 00:08:09.474 The conscious representations
NOTE Confidence: 0.815067768096924

00:08:09.474 --> 00:08:12.190 of fear and what joag is here,
NOTE Confidence: 0.815067768096924

00:08:12.190 --> 00:08:14.577 which has been a bit controversial is
NOTE Confidence: 0.815067768096924

00:08:14.577 --> 00:08:16.971 that fear is the conscious feeling
NOTE Confidence: 0.815067768096924

00:08:16.971 --> 00:08:19.563 that we have the behavioral output.
NOTE Confidence: 0.815067768096924

00:08:19.570 --> 00:08:20.256 The fight,

NOTE Confidence: 0.815067768096924
00:08:20.256 --> 00:08:22.314 flight freeze in behavior that comes
NOTE Confidence: 0.815067768096924
00:08:22.314 --> 00:08:25.040 out of the defenses survival circuits.
NOTE Confidence: 0.815067768096924
00:08:25.040 --> 00:08:29.723 Is more of a a pre programmed
NOTE Confidence: 0.815067768096924
00:08:29.723 --> 00:08:31.730 emotive response OK.
NOTE Confidence: 0.815067768096924
00:08:31.730 --> 00:08:32.195 So.
NOTE Confidence: 0.815067768096924
00:08:32.195 --> 00:08:34.520 The controversial thing for most
NOTE Confidence: 0.815067768096924
00:08:34.520 --> 00:08:37.363 people who work in the field
NOTE Confidence: 0.815067768096924
00:08:37.363 --> 00:08:39.598 of animal research is that.
NOTE Confidence: 0.815067768096924
00:08:39.600 --> 00:08:42.090 You cannot study fear in animals,
NOTE Confidence: 0.815067768096924
00:08:42.090 --> 00:08:44.580 because if fear isn't I order
NOTE Confidence: 0.815067768096924
00:08:44.580 --> 00:08:46.245 conscious representation of, say,
NOTE Confidence: 0.815067768096924
00:08:46.245 --> 00:08:48.320 your bodily state, for example,
NOTE Confidence: 0.83175790309906
00:08:48.320 --> 00:08:51.326 or the threats in the environment.
NOTE Confidence: 0.83175790309906
00:08:51.330 --> 00:08:54.489 You can't ask an animal if it feels fair.
NOTE Confidence: 0.83175790309906
00:08:54.490 --> 00:08:56.245 You can only measure these
NOTE Confidence: 0.83175790309906

00:08:56.245 --> 00:08:58.000 sorts of fearful self report,
NOTE Confidence: 0.83175790309906

00:08:58.000 --> 00:08:59.755 and it's therefore we can
NOTE Confidence: 0.83175790309906

00:08:59.755 --> 00:09:01.510 only measure them in humans.
NOTE Confidence: 0.83175790309906

00:09:01.510 --> 00:09:03.616 Or we can measure in animals
NOTE Confidence: 0.83175790309906

00:09:03.616 --> 00:09:05.020 is defensive Savarese Circus.
NOTE Confidence: 0.83175790309906

00:09:05.020 --> 00:09:06.770 The output of these circuits,
NOTE Confidence: 0.83175790309906

00:09:06.770 --> 00:09:08.876 in the form of fight flying,
NOTE Confidence: 0.83175790309906

00:09:08.880 --> 00:09:09.582 freezing behavior?
NOTE Confidence: 0.83175790309906

00:09:09.582 --> 00:09:12.039 I'm going to argue against that thing.
NOTE Confidence: 0.83175790309906

00:09:12.040 --> 00:09:13.000 I think it's.
NOTE Confidence: 0.83175790309906

00:09:13.000 --> 00:09:14.920 I agree with this separation between
NOTE Confidence: 0.83175790309906

00:09:14.920 --> 00:09:17.079 these circuits of the conscious state
NOTE Confidence: 0.83175790309906

00:09:17.079 --> 00:09:19.284 and that the behavior survival circuit
NOTE Confidence: 0.83175790309906

00:09:19.284 --> 00:09:21.888 output and fight flight freeze and behavior.
NOTE Confidence: 0.83175790309906

00:09:21.890 --> 00:09:22.636 So mentioned.
NOTE Confidence: 0.83175790309906

00:09:22.636 --> 00:09:25.620 But the definition the way defines fear I

NOTE Confidence: 0.83175790309906

00:09:25.689 --> 00:09:28.468 think doesn't really give us any further.

NOTE Confidence: 0.83175790309906

00:09:28.470 --> 00:09:31.089 I think that we need to have a more

NOTE Confidence: 0.83175790309906

00:09:31.089 --> 00:09:33.509 concrete representation of what fear is,

NOTE Confidence: 0.83175790309906

00:09:33.510 --> 00:09:35.190 and I think this fits.

NOTE Confidence: 0.83175790309906

00:09:35.190 --> 00:09:38.480 This is where fans those throughout the

NOTE Confidence: 0.83175790309906

00:09:38.480 --> 00:09:40.620 imminence continuum model comes in.

NOTE Confidence: 0.83175790309906

00:09:40.620 --> 00:09:41.769 In this paper,

NOTE Confidence: 0.83175790309906

00:09:41.769 --> 00:09:43.684 I wasn't really allowed to

NOTE Confidence: 0.83175790309906

00:09:43.684 --> 00:09:45.410 talk about my theories,

NOTE Confidence: 0.83175790309906

00:09:45.410 --> 00:09:47.400 'cause I was the moderator,

NOTE Confidence: 0.83175790309906

00:09:47.400 --> 00:09:48.182 but well,

NOTE Confidence: 0.83175790309906

00:09:48.182 --> 00:09:50.528 I'm going to talk about really

NOTE Confidence: 0.83175790309906

00:09:50.528 --> 00:09:52.989 over the course of this talk.

NOTE Confidence: 0.83175790309906

00:09:52.990 --> 00:09:54.985 Today is really the direction

NOTE Confidence: 0.83175790309906

00:09:54.985 --> 00:09:56.980 in which I've gone again,

NOTE Confidence: 0.83175790309906

00:09:56.980 --> 00:09:58.970 really influenced by Franz Liszt,
NOTE Confidence: 0.83175790309906

00:09:58.970 --> 00:10:02.337 but also your journey Deuce work and.
NOTE Confidence: 0.83175790309906

00:10:02.340 --> 00:10:03.868 You can read about that in a recent
NOTE Confidence: 0.83175790309906

00:10:03.868 --> 00:10:05.416 paper that came out earlier this year,
NOTE Confidence: 0.83175790309906

00:10:05.420 --> 00:10:06.614 and again, I'm going to talk
NOTE Confidence: 0.83175790309906

00:10:06.614 --> 00:10:07.880 about it anyway in this talk,
NOTE Confidence: 0.83175790309906

00:10:07.880 --> 00:10:09.308 but if you're interested in that paper,
NOTE Confidence: 0.83175790309906

00:10:09.310 --> 00:10:11.389 there it is.
NOTE Confidence: 0.83175790309906

00:10:11.390 --> 00:10:14.252 OK, so how do we define fear or we
NOTE Confidence: 0.83175790309906

00:10:14.252 --> 00:10:17.177 take more of a dimensional approach?
NOTE Confidence: 0.83175790309906

00:10:17.180 --> 00:10:19.496 If you go back to Darwin,
NOTE Confidence: 0.83175790309906

00:10:19.500 --> 00:10:21.785 Darwin proposed that fear takes
NOTE Confidence: 0.83175790309906

00:10:21.785 --> 00:10:24.070 the graduation from mere attention
NOTE Confidence: 0.83175790309906

00:10:24.148 --> 00:10:26.158 to extreme terror and horror.
NOTE Confidence: 0.83175790309906

00:10:26.160 --> 00:10:29.009 But what we know is that more
NOTE Confidence: 0.83175790309906

00:10:29.009 --> 00:10:30.633 contemporary theorists proposed to

NOTE Confidence: 0.83175790309906
00:10:30.633 --> 00:10:33.297 fear is an emotion that results in the
NOTE Confidence: 0.83175790309906
00:10:33.297 --> 00:10:35.146 presence of an oily, imminent threat.
NOTE Confidence: 0.83175790309906
00:10:35.146 --> 00:10:38.400 OK, if the threat is here in this room.
NOTE Confidence: 0.83175790309906
00:10:38.400 --> 00:10:38.733 Now,
NOTE Confidence: 0.83175790309906
00:10:38.733 --> 00:10:41.064 if it's a Tiger and it's sitting
NOTE Confidence: 0.83175790309906
00:10:41.064 --> 00:10:43.437 next to you and it's growling,
NOTE Confidence: 0.83175790309906
00:10:43.440 --> 00:10:45.960 that's going to evoke a fear response.
NOTE Confidence: 0.83175790309906
00:10:45.960 --> 00:10:48.156 Anxieties about when the stimulus is
NOTE Confidence: 0.83175790309906
00:10:48.156 --> 00:10:50.639 abstract or remote in time and space,
NOTE Confidence: 0.83175790309906
00:10:50.640 --> 00:10:52.080 it's about something that's
NOTE Confidence: 0.83175790309906
00:10:52.080 --> 00:10:54.240 going to happen in the future.
NOTE Confidence: 0.83175790309906
00:10:54.240 --> 00:10:56.774 OK, that's how we separate from anxiety.
NOTE Confidence: 0.83175790309906
00:10:56.780 --> 00:10:57.698 There's something terribly
NOTE Confidence: 0.83175790309906
00:10:57.698 --> 00:10:58.616 this happening now.
NOTE Confidence: 0.83175790309906
00:10:58.620 --> 00:10:58.926 Anxieties,
NOTE Confidence: 0.83175790309906

00:10:58.926 --> 00:11:00.150 something tell what's going
NOTE Confidence: 0.83175790309906

00:11:00.150 --> 00:11:01.680 to happen in the future?
NOTE Confidence: 0.83175790309906

00:11:01.680 --> 00:11:01.905 OK,
NOTE Confidence: 0.83175790309906

00:11:01.905 --> 00:11:03.930 So what you can see it all of a
NOTE Confidence: 0.83175790309906

00:11:04.002 --> 00:11:06.204 sudden is with these definitions is
NOTE Confidence: 0.83175790309906

00:11:06.204 --> 00:11:08.709 that we're looking at time and space.
NOTE Confidence: 0.83175790309906

00:11:08.710 --> 00:11:09.529 In some respects.
NOTE Confidence: 0.83175790309906

00:11:09.529 --> 00:11:11.167 We're looking at fear as a
NOTE Confidence: 0.83175790309906

00:11:11.167 --> 00:11:12.390 more proxamol threat.
NOTE Confidence: 0.83175790309906

00:11:12.390 --> 00:11:14.220 Anxiety is a more distal threat,
NOTE Confidence: 0.83175790309906

00:11:14.220 --> 00:11:16.341 so we've used those sorts of definitions
NOTE Confidence: 0.83175790309906

00:11:16.341 --> 00:11:18.577 to be able to separate fear and
NOTE Confidence: 0.83175790309906

00:11:18.577 --> 00:11:20.949 anxiety using the top stats that we use,
NOTE Confidence: 0.83175790309906

00:11:20.950 --> 00:11:23.398 and I'll be talking about in a minute,
NOTE Confidence: 0.83175790309906

00:11:23.400 --> 00:11:24.940 but they separate these emotions
NOTE Confidence: 0.83175790309906

00:11:24.940 --> 00:11:26.480 by creating stimuli or threats

NOTE Confidence: 0.83175790309906
00:11:26.538 --> 00:11:27.420 that will distort.
NOTE Confidence: 0.83175790309906
00:11:27.420 --> 00:11:28.200 Approximately.
NOTE Confidence: 0.842036783695221
00:11:30.330 --> 00:11:33.690 So let's go back to the drawing board.
NOTE Confidence: 0.842036783695221
00:11:33.690 --> 00:11:36.210 Let's try and understand the why.
NOTE Confidence: 0.842036783695221
00:11:36.210 --> 00:11:38.770 Fear and anxiety too important
NOTE Confidence: 0.842036783695221
00:11:38.770 --> 00:11:40.818 to survival in nature.
NOTE Confidence: 0.842036783695221
00:11:40.820 --> 00:11:42.950 And then our prize winner Nico
NOTE Confidence: 0.842036783695221
00:11:42.950 --> 00:11:44.771 Tinbergen propose it becomes difficult
NOTE Confidence: 0.842036783695221
00:11:44.771 --> 00:11:46.793 and even in some cases impossible
NOTE Confidence: 0.842036783695221
00:11:46.793 --> 00:11:48.830 to say where ethnology stops.
NOTE Confidence: 0.842036783695221
00:11:48.830 --> 00:11:50.198 A new Physiology begins.
NOTE Confidence: 0.842036783695221
00:11:50.198 --> 00:11:53.200 And in a recent paper that we published,
NOTE Confidence: 0.842036783695221
00:11:53.200 --> 00:11:55.580 review replies that we need to understand
NOTE Confidence: 0.842036783695221
00:11:55.580 --> 00:11:58.659 our fear as well as our decision processes.
NOTE Confidence: 0.842036783695221
00:11:58.660 --> 00:12:01.024 You must consider the evolutionary and
NOTE Confidence: 0.842036783695221

00:12:01.024 --> 00:12:03.390 ecological conditions that give rise to them,
NOTE Confidence: 0.842036783695221

00:12:03.390 --> 00:12:05.568 because if we don't do that,
NOTE Confidence: 0.842036783695221

00:12:05.570 --> 00:12:07.754 this will lead the field of
NOTE Confidence: 0.842036783695221

00:12:07.754 --> 00:12:09.210 affective neuroscience study affair
NOTE Confidence: 0.842036783695221

00:12:09.271 --> 00:12:11.407 ungrounded and they had to interpret.
NOTE Confidence: 0.842036783695221

00:12:11.410 --> 00:12:14.126 And the natural and one crate paradigms
NOTE Confidence: 0.842036783695221

00:12:14.126 --> 00:12:17.303 we need to create paradigms that relate
NOTE Confidence: 0.842036783695221

00:12:17.303 --> 00:12:20.671 to the similar types of decisions that
NOTE Confidence: 0.842036783695221

00:12:20.671 --> 00:12:23.457 would be executed in the real world.
NOTE Confidence: 0.842036783695221

00:12:23.460 --> 00:12:26.756 Just go to some of the theoretical background
NOTE Confidence: 0.842036783695221

00:12:26.756 --> 00:12:29.430 beyond some of the paradigms that we're
NOTE Confidence: 0.842036783695221

00:12:29.430 --> 00:12:32.439 going to show in this this talk today.
NOTE Confidence: 0.842036783695221

00:12:32.440 --> 00:12:34.890 So in an issue that mean Joe
NOTE Confidence: 0.842036783695221

00:12:34.890 --> 00:12:36.949 Ledoux edited couple of years ago,
NOTE Confidence: 0.842036783695221

00:12:36.950 --> 00:12:38.972 now concurrent opinion be able to
NOTE Confidence: 0.842036783695221

00:12:38.972 --> 00:12:41.019 Sciences I wanted paper looking at

NOTE Confidence: 0.842036783695221
00:12:41.019 --> 00:12:43.252 how we could separate fears and those
NOTE Confidence: 0.842036783695221
00:12:43.252 --> 00:12:45.494 fears and applaud sense based upon
NOTE Confidence: 0.842036783695221
00:12:45.494 --> 00:12:47.354 the conditions of the environment.
NOTE Confidence: 0.842036783695221
00:12:47.360 --> 00:12:49.888 So what I proposed in that paper was
NOTE Confidence: 0.842036783695221
00:12:49.888 --> 00:12:52.821 the first of all we need to understand
NOTE Confidence: 0.842036783695221
00:12:52.821 --> 00:12:54.999 the natural conditions of the Volk.
NOTE Confidence: 0.842036783695221
00:12:55.000 --> 00:12:56.656 Those survival behaviors, OK,
NOTE Confidence: 0.842036783695221
00:12:56.656 --> 00:12:59.140 and there under those natural conditions
NOTE Confidence: 0.842036783695221
00:12:59.202 --> 00:13:01.282 we can look at things like the traits
NOTE Confidence: 0.842036783695221
00:13:01.282 --> 00:13:03.664 of the threat, what type of threat.
NOTE Confidence: 0.842036783695221
00:13:03.664 --> 00:13:05.394 Is it on the table?
NOTE Confidence: 0.842036783695221
00:13:05.400 --> 00:13:07.110 Temporal spatial properties are threat
NOTE Confidence: 0.842036783695221
00:13:07.110 --> 00:13:09.700 we can think about other things as well.
NOTE Confidence: 0.842036783695221
00:13:09.700 --> 00:13:11.734 About is an environment where is
NOTE Confidence: 0.842036783695221
00:13:11.734 --> 00:13:13.999 open field or is it a forest?
NOTE Confidence: 0.842036783695221

00:13:14.000 --> 00:13:14.566 For example,
NOTE Confidence: 0.842036783695221

00:13:14.566 --> 00:13:16.264 we need to think about what
NOTE Confidence: 0.842036783695221

00:13:16.264 --> 00:13:17.970 are those natural conditions.
NOTE Confidence: 0.842036783695221

00:13:17.970 --> 00:13:19.625 And once we understand those
NOTE Confidence: 0.842036783695221

00:13:19.625 --> 00:13:20.287 natural conditions,
NOTE Confidence: 0.842036783695221

00:13:20.290 --> 00:13:22.666 we can then begin to understand what are
NOTE Confidence: 0.842036783695221

00:13:22.666 --> 00:13:24.920 the optimal strategies of that Organism.
NOTE Confidence: 0.842036783695221

00:13:24.920 --> 00:13:27.608 Two of aid that predator OK.
NOTE Confidence: 0.842036783695221

00:13:27.610 --> 00:13:30.025 So we can try and workout what
NOTE Confidence: 0.842036783695221

00:13:30.025 --> 00:13:31.060 those strategies are.
NOTE Confidence: 0.842036783695221

00:13:31.060 --> 00:13:33.286 The actions and reactions are to those
NOTE Confidence: 0.842036783695221

00:13:33.286 --> 00:13:35.199 natural threats in the environment,
NOTE Confidence: 0.842036783695221

00:13:35.200 --> 00:13:36.925 and once we understand the
NOTE Confidence: 0.842036783695221

00:13:36.925 --> 00:13:38.305 environment and the strategies,
NOTE Confidence: 0.842036783695221

00:13:38.310 --> 00:13:40.718 we can begin to understand the computations.
NOTE Confidence: 0.842036783695221

00:13:40.720 --> 00:13:43.065 And all the animals optimizes it behavior,

NOTE Confidence: 0.842036783695221
00:13:43.070 --> 00:13:45.191 but also we can think about our
NOTE Confidence: 0.842036783695221
00:13:45.191 --> 00:13:46.549 other Internet connected survivor
NOTE Confidence: 0.842036783695221
00:13:46.549 --> 00:13:48.109 circuits may modulate that.
NOTE Confidence: 0.842036783695221
00:13:48.110 --> 00:13:49.070 So for example,
NOTE Confidence: 0.842036783695221
00:13:49.070 --> 00:13:50.990 a strategy to a Veda predator
NOTE Confidence: 0.842036783695221
00:13:50.990 --> 00:13:53.423 will be different if you have to
NOTE Confidence: 0.842036783695221
00:13:53.423 --> 00:13:55.549 protect your offspring as well, OK?
NOTE Confidence: 0.842036783695221
00:13:55.549 --> 00:13:58.581 So we can think about our other survival
NOTE Confidence: 0.842036783695221
00:13:58.581 --> 00:14:01.249 circuits may impact these or survival
NOTE Confidence: 0.842036783695221
00:14:01.249 --> 00:14:03.464 guys may impact these strategies.
NOTE Confidence: 0.842036783695221
00:14:03.470 --> 00:14:04.234 And finally,
NOTE Confidence: 0.842036783695221
00:14:04.234 --> 00:14:06.144 once we understand those strategies,
NOTE Confidence: 0.842036783695221
00:14:06.150 --> 00:14:08.220 we can understand what parts of
NOTE Confidence: 0.842036783695221
00:14:08.220 --> 00:14:10.529 the brain are involved in those
NOTE Confidence: 0.842036783695221
00:14:10.529 --> 00:14:12.674 strategies and then apply computation.
NOTE Confidence: 0.842036783695221

00:14:12.680 --> 00:14:15.540 Must understand that more closely.
NOTE Confidence: 0.842036783695221

00:14:15.540 --> 00:14:16.212 So really,
NOTE Confidence: 0.842036783695221

00:14:16.212 --> 00:14:17.892 this is the general principle
NOTE Confidence: 0.842036783695221

00:14:17.892 --> 00:14:20.001 of the approach I've taken in my
NOTE Confidence: 0.842036783695221

00:14:20.001 --> 00:14:21.976 lab to try and think about when
NOTE Confidence: 0.842036783695221

00:14:21.976 --> 00:14:23.420 we develop our paradigms.
NOTE Confidence: 0.842036783695221

00:14:23.420 --> 00:14:25.268 How does that relate to the natural
NOTE Confidence: 0.842036783695221

00:14:25.268 --> 00:14:27.416 world and how can we create paradigms
NOTE Confidence: 0.842036783695221

00:14:27.416 --> 00:14:29.036 particularly overly that allow us
NOTE Confidence: 0.842036783695221

00:14:29.036 --> 00:14:31.139 to change your allow the individual
NOTE Confidence: 0.842036783695221

00:14:31.139 --> 00:14:32.864 in those environments to change
NOTE Confidence: 0.829069972038269

00:14:32.870 --> 00:14:34.642 their strategies this summer?
NOTE Confidence: 0.829069972038269

00:14:34.642 --> 00:14:35.971 We're currently working
NOTE Confidence: 0.829069972038269

00:14:35.971 --> 00:14:38.348 on in more depth as well.
NOTE Confidence: 0.829069972038269

00:14:38.350 --> 00:14:41.766 OK, so I've mentioned fans Lowe's that
NOTE Confidence: 0.829069972038269

00:14:41.766 --> 00:14:43.868 Eminence Continuum originally called

NOTE Confidence: 0.829069972038269

00:14:43.868 --> 00:14:46.108 a predatory imminence continuum,

NOTE Confidence: 0.829069972038269

00:14:46.110 --> 00:14:48.178 and what this proposes,

NOTE Confidence: 0.829069972038269

00:14:48.178 --> 00:14:51.280 is that there's really 3 core

NOTE Confidence: 0.829069972038269

00:14:51.383 --> 00:14:54.019 levels of threat imminence.

NOTE Confidence: 0.829069972038269

00:14:54.020 --> 00:14:55.988 We start off with this first one here,

NOTE Confidence: 0.829069972038269

00:14:55.990 --> 00:14:57.460 which we called the preferred activity.

NOTE Confidence: 0.829069972038269

00:14:57.460 --> 00:14:58.936 This is where the animal spends

NOTE Confidence: 0.829069972038269

00:14:58.936 --> 00:14:59.920 most of its time.

NOTE Confidence: 0.829069972038269

00:14:59.920 --> 00:15:01.895 This is where it fills the safest. OK.

NOTE Confidence: 0.829069972038269

00:15:01.895 --> 00:15:03.610 So if we're looking a little Birdy,

NOTE Confidence: 0.829069972038269

00:15:03.610 --> 00:15:05.824 are a little bird is in the nest OK?

NOTE Confidence: 0.829069972038269

00:15:05.830 --> 00:15:08.094 And it's the safest place at the bird

NOTE Confidence: 0.829069972038269

00:15:08.094 --> 00:15:10.270 is feels it could be I should say.

NOTE Confidence: 0.829069972038269

00:15:10.270 --> 00:15:13.222 If we move down here then we can

NOTE Confidence: 0.829069972038269

00:15:13.222 --> 00:15:15.854 see that the bird is fallen or

NOTE Confidence: 0.829069972038269

00:15:15.854 --> 00:15:18.739 gone to the bed of the forest.
NOTE Confidence: 0.829069972038269

00:15:18.740 --> 00:15:19.410 It OK.
NOTE Confidence: 0.829069972038269

00:15:19.410 --> 00:15:21.420 Now this is where there's a
NOTE Confidence: 0.829069972038269

00:15:21.420 --> 00:15:23.043 potential to actually encounter
NOTE Confidence: 0.829069972038269

00:15:23.043 --> 00:15:25.665 a threat in the natural world.
NOTE Confidence: 0.829069972038269

00:15:25.670 --> 00:15:29.016 They call this the pre encounter context.
NOTE Confidence: 0.829069972038269

00:15:29.020 --> 00:15:31.636 Just imagine now that little bird spots and
NOTE Confidence: 0.829069972038269

00:15:31.636 --> 00:15:33.596 natural predator like a cat for example,
NOTE Confidence: 0.829069972038269

00:15:33.600 --> 00:15:35.430 which we can see just there.
NOTE Confidence: 0.829069972038269

00:15:35.430 --> 00:15:37.062 Now we switch over into what's
NOTE Confidence: 0.829069972038269

00:15:37.062 --> 00:15:38.780 known as the Post Encounter.
NOTE Confidence: 0.829069972038269

00:15:38.780 --> 00:15:40.610 This is where there's a predator
NOTE Confidence: 0.829069972038269

00:15:40.610 --> 00:15:41.525 in the environment.
NOTE Confidence: 0.829069972038269

00:15:41.530 --> 00:15:43.026 There's no direct interaction
NOTE Confidence: 0.829069972038269

00:15:43.026 --> 00:15:44.896 between a predator and prey.
NOTE Confidence: 0.829069972038269

00:15:44.900 --> 00:15:47.120 Then finally, a predator wakes up,

NOTE Confidence: 0.829069972038269

00:15:47.120 --> 00:15:49.710 spots Little Bird, and begins to attack.

NOTE Confidence: 0.829069972038269

00:15:49.710 --> 00:15:51.930 We refer to this as the

NOTE Confidence: 0.829069972038269

00:15:51.930 --> 00:15:53.040 circus strike context.

NOTE Confidence: 0.829069972038269

00:15:53.040 --> 00:15:54.890 OK, now what's really interesting

NOTE Confidence: 0.829069972038269

00:15:54.890 --> 00:15:56.000 about these contexts?

NOTE Confidence: 0.829069972038269

00:15:56.000 --> 00:15:56.306 OK,

NOTE Confidence: 0.829069972038269

00:15:56.306 --> 00:15:58.448 they allow us to think about fear

NOTE Confidence: 0.829069972038269

00:15:58.448 --> 00:16:00.439 and anxiety slightly differently,

NOTE Confidence: 0.829069972038269

00:16:00.440 --> 00:16:01.920 particularly in the context

NOTE Confidence: 0.829069972038269

00:16:01.920 --> 00:16:03.030 of natural behavior.

NOTE Confidence: 0.829069972038269

00:16:03.030 --> 00:16:05.046 But also what we know is that

NOTE Confidence: 0.829069972038269

00:16:05.046 --> 00:16:06.867 the behaviors of the strategies

NOTE Confidence: 0.829069972038269

00:16:06.867 --> 00:16:08.647 alter across these different

NOTE Confidence: 0.829069972038269

00:16:08.647 --> 00:16:10.427 levels of threat imminence.

NOTE Confidence: 0.829069972038269

00:16:10.430 --> 00:16:12.222 What you typically see

NOTE Confidence: 0.829069972038269

00:16:12.222 --> 00:16:14.462 in pre encounter OK is.
NOTE Confidence: 0.829069972038269

00:16:14.470 --> 00:16:16.010 Cautious behaviors and otherwise
NOTE Confidence: 0.829069972038269

00:16:16.010 --> 00:16:18.794 you see such things as well as
NOTE Confidence: 0.829069972038269

00:16:18.794 --> 00:16:20.434 known as intermittent locomotion's
NOTE Confidence: 0.829069972038269

00:16:20.434 --> 00:16:22.484 the other will move along.
NOTE Confidence: 0.829069972038269

00:16:22.490 --> 00:16:24.878 Look around OK and keep doing
NOTE Confidence: 0.829069972038269

00:16:24.878 --> 00:16:27.300 these voluntary sort of pauses OK,
NOTE Confidence: 0.829069972038269

00:16:27.300 --> 00:16:29.814 you also see thicker mataxis Indiana
NOTE Confidence: 0.829069972038269

00:16:29.814 --> 00:16:31.490 artificially invites with the
NOTE Confidence: 0.829069972038269

00:16:31.554 --> 00:16:33.798 animal will go around the borders
NOTE Confidence: 0.829069972038269

00:16:33.798 --> 00:16:35.726 of the environment, but also.
NOTE Confidence: 0.829069972038269

00:16:35.726 --> 00:16:38.547 You see such things as increased vigilance.
NOTE Confidence: 0.829069972038269

00:16:38.550 --> 00:16:39.830 I doubting, for example,
NOTE Confidence: 0.829069972038269

00:16:39.830 --> 00:16:41.430 they're trying to increase their
NOTE Confidence: 0.829069972038269

00:16:41.430 --> 00:16:42.974 vigilance to detect approach to
NOTE Confidence: 0.829069972038269

00:16:42.974 --> 00:16:44.434 before the predator detects them.

NOTE Confidence: 0.829069972038269

00:16:44.440 --> 00:16:48.115 OK, so you see these cautious behaviors.

NOTE Confidence: 0.829069972038269

00:16:48.120 --> 00:16:50.164 If we switch over into the posting

NOTE Confidence: 0.829069972038269

00:16:50.164 --> 00:16:52.209 counts at the moment that are

NOTE Confidence: 0.829069972038269

00:16:52.209 --> 00:16:54.039 priced spots in natural product.

NOTE Confidence: 0.829069972038269

00:16:54.040 --> 00:16:55.965 The classic response that you

NOTE Confidence: 0.829069972038269

00:16:55.965 --> 00:16:57.890 will see is freezing behavior.

NOTE Confidence: 0.829069972038269

00:16:57.890 --> 00:17:00.466 And then once the process begins to attack,

NOTE Confidence: 0.829069972038269

00:17:00.470 --> 00:17:02.085 the animal will continue to

NOTE Confidence: 0.829069972038269

00:17:02.085 --> 00:17:03.054 freeze for awhile,

NOTE Confidence: 0.829069972038269

00:17:03.060 --> 00:17:04.998 but as this threat comes closer,

NOTE Confidence: 0.829069972038269

00:17:05.000 --> 00:17:07.208 you'll see switch into flight behavior

NOTE Confidence: 0.829069972038269

00:17:07.208 --> 00:17:09.274 and therefore there's even the last

NOTE Confidence: 0.829069972038269

00:17:09.274 --> 00:17:11.122 thing they can do if it strapped,

NOTE Confidence: 0.829069972038269

00:17:11.130 --> 00:17:12.422 for example, is it?

NOTE Confidence: 0.829069972038269

00:17:12.422 --> 00:17:14.037 We're going to fight behavior.

NOTE Confidence: 0.829069972038269

00:17:14.040 --> 00:17:16.624 So what you can see is the spatial
NOTE Confidence: 0.829069972038269

00:17:16.624 --> 00:17:18.154 temporal distance, the context.
NOTE Confidence: 0.829069972038269

00:17:18.154 --> 00:17:20.364 Will revoke different defensive behaviors.
NOTE Confidence: 0.829069972038269

00:17:20.370 --> 00:17:20.761 OK,
NOTE Confidence: 0.829069972038269

00:17:20.761 --> 00:17:23.498 so our goal then is based off
NOTE Confidence: 0.829069972038269

00:17:23.498 --> 00:17:26.566 of this model is can we create?
NOTE Confidence: 0.829069972038269

00:17:26.570 --> 00:17:28.394 OK can we create?
NOTE Confidence: 0.829069972038269

00:17:28.394 --> 00:17:30.674 Experiments that model these different
NOTE Confidence: 0.829069972038269

00:17:30.674 --> 00:17:32.789 environments and different behaviors.
NOTE Confidence: 0.829069972038269

00:17:32.790 --> 00:17:34.836 It's tough because if you're using
NOTE Confidence: 0.829069972038269

00:17:34.836 --> 00:17:36.200 classic Pavlovian conditioning or
NOTE Confidence: 0.831620931625366

00:17:36.254 --> 00:17:37.610 fear conditioning paradigm,
NOTE Confidence: 0.831620931625366

00:17:37.610 --> 00:17:40.207 you cannot do these types of experiments.
NOTE Confidence: 0.831620931625366

00:17:40.210 --> 00:17:43.058 At least you cannot do them in the
NOTE Confidence: 0.831620931625366

00:17:43.058 --> 00:17:45.766 way that we can get behavior OK.
NOTE Confidence: 0.822797656059265

00:17:48.290 --> 00:17:50.642 So why does this matter in some respects

NOTE Confidence: 0.822797656059265

00:17:50.642 --> 00:17:52.357 to definitions of fear and anxiety?

NOTE Confidence: 0.822797656059265

00:17:52.360 --> 00:17:55.270 Well, if we look at the top here in eight,

NOTE Confidence: 0.822797656059265

00:17:55.270 --> 00:17:57.202 again, this is taken from the paper

NOTE Confidence: 0.822797656059265

00:17:57.202 --> 00:17:59.292 I just mentioned in ticks that we

NOTE Confidence: 0.822797656059265

00:17:59.292 --> 00:18:00.797 probably should earlier this year.

NOTE Confidence: 0.822797656059265

00:18:00.800 --> 00:18:02.837 If we look at the top here,

NOTE Confidence: 0.822797656059265

00:18:02.840 --> 00:18:05.030 we can see fans Lowe's.

NOTE Confidence: 0.822797656059265

00:18:05.030 --> 00:18:06.530 So remanence continue myrene and

NOTE Confidence: 0.822797656059265

00:18:06.530 --> 00:18:08.740 we go from the the green here,

NOTE Confidence: 0.822797656059265

00:18:08.740 --> 00:18:10.756 which is a safe all the way

NOTE Confidence: 0.822797656059265

00:18:10.756 --> 00:18:12.140 through to circus strike.

NOTE Confidence: 0.822797656059265

00:18:12.140 --> 00:18:14.247 Over here we also talk here about

NOTE Confidence: 0.822797656059265

00:18:14.247 --> 00:18:15.924 these more ambiguous sort of zones

NOTE Confidence: 0.822797656059265

00:18:15.924 --> 00:18:18.079 where you get in this sort of switch

NOTE Confidence: 0.822797656059265

00:18:18.079 --> 00:18:20.169 order event defensive transition zone.

NOTE Confidence: 0.822797656059265

00:18:20.170 --> 00:18:21.898 The reason why we mentioned that
NOTE Confidence: 0.822797656059265

00:18:21.898 --> 00:18:24.224 in this in this model is because we
NOTE Confidence: 0.822797656059265

00:18:24.224 --> 00:18:26.647 think this is a good point at which
NOTE Confidence: 0.822797656059265

00:18:26.647 --> 00:18:28.741 you should be studying in clinical
NOTE Confidence: 0.822797656059265

00:18:28.741 --> 00:18:30.952 disorders such as general anxiety which
NOTE Confidence: 0.822797656059265

00:18:30.952 --> 00:18:33.500 we're working on at the moment an.
NOTE Confidence: 0.822797656059265

00:18:33.500 --> 00:18:36.097 What we've kind of show me Trey
NOTE Confidence: 0.822797656059265

00:18:36.097 --> 00:18:37.210 anxiety at least,
NOTE Confidence: 0.822797656059265

00:18:37.210 --> 00:18:39.807 and some of our preliminary day with.
NOTE Confidence: 0.822797656059265

00:18:39.810 --> 00:18:42.218 General anxiety is that this which seems
NOTE Confidence: 0.822797656059265

00:18:42.218 --> 00:18:45.170 to be earlier in those individuals or oily,
NOTE Confidence: 0.822797656059265

00:18:45.170 --> 00:18:45.884 anxious, OK,
NOTE Confidence: 0.822797656059265

00:18:45.884 --> 00:18:48.740 so this zone gets a little bit larger.
NOTE Confidence: 0.822797656059265

00:18:48.740 --> 00:18:50.320 OK, in those individuals.
NOTE Confidence: 0.822797656059265

00:18:50.320 --> 00:18:53.370 If we go down to beer though,
NOTE Confidence: 0.822797656059265

00:18:53.370 --> 00:18:55.470 the important part really of this

NOTE Confidence: 0.822797656059265
00:18:55.470 --> 00:18:58.043 slide is that what we can begin to
NOTE Confidence: 0.822797656059265
00:18:58.043 --> 00:19:00.576 do is using this time and space to
NOTE Confidence: 0.822797656059265
00:19:00.576 --> 00:19:03.000 threat is to think about theoretically.
NOTE Confidence: 0.822797656059265
00:19:03.000 --> 00:19:05.121 Think about how we can separate fear
NOTE Confidence: 0.822797656059265
00:19:05.121 --> 00:19:06.780 anxieties into different subcomponents,
NOTE Confidence: 0.822797656059265
00:19:06.780 --> 00:19:09.097 and how we shift from more sort
NOTE Confidence: 0.822797656059265
00:19:09.097 --> 00:19:10.909 of motor programs from fight,
NOTE Confidence: 0.822797656059265
00:19:10.910 --> 00:19:12.900 flight freezing behavior all the
NOTE Confidence: 0.822797656059265
00:19:12.900 --> 00:19:15.240 way through to a cognitive process
NOTE Confidence: 0.822797656059265
00:19:15.240 --> 00:19:17.787 is so if we start at the end here,
NOTE Confidence: 0.822797656059265
00:19:17.790 --> 00:19:18.148 yeah,
NOTE Confidence: 0.822797656059265
00:19:18.148 --> 00:19:19.938 this started circa strike here
NOTE Confidence: 0.822797656059265
00:19:19.938 --> 00:19:21.640 in the dark pink OK.
NOTE Confidence: 0.822797656059265
00:19:21.640 --> 00:19:23.845 When a sweat is very close OK,
NOTE Confidence: 0.822797656059265
00:19:23.850 --> 00:19:25.817 we begin to use lesser cortex and
NOTE Confidence: 0.822797656059265

00:19:25.817 --> 00:19:27.853 this may be the same in animals
NOTE Confidence: 0.822797656059265

00:19:27.853 --> 00:19:29.977 and we begin to just rely more
NOTE Confidence: 0.822797656059265

00:19:29.977 --> 00:19:32.191 on our sort of innate reflexive
NOTE Confidence: 0.822797656059265

00:19:32.191 --> 00:19:33.928 reactive responses and this is
NOTE Confidence: 0.822797656059265

00:19:33.928 --> 00:19:35.498 observed clear clearly in disorders,
NOTE Confidence: 0.822797656059265

00:19:35.500 --> 00:19:37.460 such as panic when a threat is
NOTE Confidence: 0.822797656059265

00:19:37.460 --> 00:19:40.079 very close to a pray will go into
NOTE Confidence: 0.822797656059265

00:19:40.079 --> 00:19:41.794 some form of uncoordinated flight.
NOTE Confidence: 0.822797656059265

00:19:41.800 --> 00:19:43.690 They'll just bump all over the
NOTE Confidence: 0.822797656059265

00:19:43.690 --> 00:19:44.950 walls and so on,
NOTE Confidence: 0.822797656059265

00:19:44.950 --> 00:19:46.840 just they just want to get
NOTE Confidence: 0.822797656059265

00:19:46.840 --> 00:19:48.100 away from this thread.
NOTE Confidence: 0.822797656059265

00:19:48.100 --> 00:19:50.606 Let's win the threat is very, very close.
NOTE Confidence: 0.822797656059265

00:19:50.606 --> 00:19:53.510 But if it has a little bit more time.
NOTE Confidence: 0.822797656059265

00:19:53.510 --> 00:19:56.958 It can direct its fear in a way
NOTE Confidence: 0.822797656059265

00:19:56.958 --> 00:19:59.728 that allows it to optimize it.

NOTE Confidence: 0.822797656059265

00:19:59.730 --> 00:20:00.612 Reactive response,

NOTE Confidence: 0.822797656059265

00:20:00.612 --> 00:20:03.699 whether it wants to go into fight

NOTE Confidence: 0.822797656059265

00:20:03.699 --> 00:20:05.957 response or freezing response OK.

NOTE Confidence: 0.822797656059265

00:20:05.960 --> 00:20:08.249 If you give the sweat and little

NOTE Confidence: 0.822797656059265

00:20:08.249 --> 00:20:10.141 bit more distance from the from

NOTE Confidence: 0.822797656059265

00:20:10.141 --> 00:20:12.108 the the pray you begin to see

NOTE Confidence: 0.822797656059265

00:20:12.177 --> 00:20:14.007 what we call cognitive fear.

NOTE Confidence: 0.822797656059265

00:20:14.010 --> 00:20:16.068 This is where now the animal's a

NOTE Confidence: 0.822797656059265

00:20:16.068 --> 00:20:18.387 little bit more time to make decisions

NOTE Confidence: 0.822797656059265

00:20:18.387 --> 00:20:20.445 about where it's going to escape.

NOTE Confidence: 0.822797656059265

00:20:20.450 --> 00:20:22.376 OK, it can appraise its behaviors,

NOTE Confidence: 0.822797656059265

00:20:22.380 --> 00:20:25.604 it can strategize its escape and so on.

NOTE Confidence: 0.822797656059265

00:20:25.610 --> 00:20:25.960 Now,

NOTE Confidence: 0.822797656059265

00:20:25.960 --> 00:20:27.010 what's important here,

NOTE Confidence: 0.822797656059265

00:20:27.010 --> 00:20:29.520 if you focus here on the pink,

NOTE Confidence: 0.822797656059265

00:20:29.520 --> 00:20:31.602 they match up these colors the
NOTE Confidence: 0.822797656059265

00:20:31.602 --> 00:20:33.420 way that we define fear.
NOTE Confidence: 0.822797656059265

00:20:33.420 --> 00:20:35.145 OK is when you're under
NOTE Confidence: 0.822797656059265

00:20:35.145 --> 00:20:36.870 potential or you are under
NOTE Confidence: 0.857542634010315

00:20:36.940 --> 00:20:38.388 attack from a threat.
NOTE Confidence: 0.857542634010315

00:20:38.390 --> 00:20:41.204 So we define fear by the context
NOTE Confidence: 0.857542634010315

00:20:41.204 --> 00:20:44.120 in which the Organism is in OK.
NOTE Confidence: 0.857542634010315

00:20:44.120 --> 00:20:46.472 We don't define it by the conscious
NOTE Confidence: 0.857542634010315

00:20:46.472 --> 00:20:48.887 state as the dude as we find it.
NOTE Confidence: 0.857542634010315

00:20:48.890 --> 00:20:51.570 We define it by the conditions in which
NOTE Confidence: 0.857542634010315

00:20:51.570 --> 00:20:53.979 the Organism is in the same of anxiety.
NOTE Confidence: 0.857542634010315

00:20:53.980 --> 00:20:56.156 So if we go over then to do
NOTE Confidence: 0.857542634010315

00:20:56.156 --> 00:20:57.480 post encounter throughout,
NOTE Confidence: 0.857542634010315

00:20:57.480 --> 00:20:58.748 there's a threat present,
NOTE Confidence: 0.857542634010315

00:20:58.748 --> 00:20:59.699 but not attacking.
NOTE Confidence: 0.857542634010315

00:20:59.700 --> 00:21:01.608 We call this encounter anxiety OK,

NOTE Confidence: 0.857542634010315

00:21:01.610 --> 00:21:03.200 and again we're seeing now,

NOTE Confidence: 0.857542634010315

00:21:03.200 --> 00:21:05.447 but more of the cortex and cognitive

NOTE Confidence: 0.857542634010315

00:21:05.447 --> 00:21:06.772 conscious processes coming online

NOTE Confidence: 0.857542634010315

00:21:06.772 --> 00:21:08.925 because there's more time to think, OK?

NOTE Confidence: 0.857542634010315

00:21:08.925 --> 00:21:11.130 The animal can begin to think about

NOTE Confidence: 0.857542634010315

00:21:11.130 --> 00:21:13.067 what's the best action and the

NOTE Confidence: 0.857542634010315

00:21:13.067 --> 00:21:15.430 outcomes of the action in the future.

NOTE Confidence: 0.857542634010315

00:21:15.430 --> 00:21:17.130 Again, it can strategize and

NOTE Confidence: 0.857542634010315

00:21:17.130 --> 00:21:18.830 it can go into these.

NOTE Confidence: 0.857542634010315

00:21:18.830 --> 00:21:20.630 Free app to determine its freezing

NOTE Confidence: 0.857542634010315

00:21:20.630 --> 00:21:22.690 state or when it's going to flea,

NOTE Confidence: 0.857542634010315

00:21:22.690 --> 00:21:24.175 and again with the cognitive

NOTE Confidence: 0.857542634010315

00:21:24.175 --> 00:21:25.066 fear and encounter.

NOTE Confidence: 0.857542634010315

00:21:25.070 --> 00:21:25.937 I should mention,

NOTE Confidence: 0.857542634010315

00:21:25.937 --> 00:21:27.960 this is where we begin to get

NOTE Confidence: 0.857542634010315

00:21:28.031 --> 00:21:29.819 more of the feeling state OK,
NOTE Confidence: 0.857542634010315

00:21:29.820 --> 00:21:31.520 you have this perception
NOTE Confidence: 0.857542634010315

00:21:31.520 --> 00:21:34.070 that we owned by the state.
NOTE Confidence: 0.857542634010315

00:21:34.070 --> 00:21:35.870 When were in pre encounter we
NOTE Confidence: 0.857542634010315

00:21:35.870 --> 00:21:37.070 have these anticipatory anxiety.
NOTE Confidence: 0.857542634010315

00:21:37.070 --> 00:21:38.939 OK this is where we get the
NOTE Confidence: 0.857542634010315

00:21:38.939 --> 00:21:40.173 cautious behaviors OK prospection
NOTE Confidence: 0.857542634010315

00:21:40.173 --> 00:21:41.677 again strategizing worry something
NOTE Confidence: 0.857542634010315

00:21:41.677 --> 00:21:44.077 may come in the future so we
NOTE Confidence: 0.857542634010315

00:21:44.077 --> 00:21:45.463 can begin to worry about it.
NOTE Confidence: 0.857542634010315

00:21:45.470 --> 00:21:47.570 And then if we're looking at days,
NOTE Confidence: 0.857542634010315

00:21:47.570 --> 00:21:49.970 weeks or even months away from a threat,
NOTE Confidence: 0.857542634010315

00:21:49.970 --> 00:21:51.470 we're going to intermittent locomotion.
NOTE Confidence: 0.857542634010315

00:21:51.470 --> 00:21:52.970 This is where we're probably
NOTE Confidence: 0.857542634010315

00:21:52.970 --> 00:21:53.870 thinking about it.
NOTE Confidence: 0.857542634010315

00:21:53.870 --> 00:21:56.014 Talk a big talk that we have to

NOTE Confidence: 0.857542634010315

00:21:56.014 --> 00:21:58.200 give in a months time and every

NOTE Confidence: 0.857542634010315

00:21:58.200 --> 00:22:00.469 now and again we think about it.

NOTE Confidence: 0.857542634010315

00:22:00.470 --> 00:22:02.570 We get a bit of intermittent anxiety.

NOTE Confidence: 0.857542634010315

00:22:02.570 --> 00:22:04.080 We think about it, but.

NOTE Confidence: 0.857542634010315

00:22:04.080 --> 00:22:07.050 Quickly we can suppress those feelings

NOTE Confidence: 0.857542634010315

00:22:07.050 --> 00:22:10.288 because we know it's in the future.

NOTE Confidence: 0.857542634010315

00:22:10.290 --> 00:22:10.770 OK,

NOTE Confidence: 0.857542634010315

00:22:10.770 --> 00:22:14.610 now I'm not saying these are all independent.

NOTE Confidence: 0.857542634010315

00:22:14.610 --> 00:22:16.245 Aspects of these emotions to

NOTE Confidence: 0.857542634010315

00:22:16.245 --> 00:22:18.650 me there more of a continuum,

NOTE Confidence: 0.857542634010315

00:22:18.650 --> 00:22:20.636 and they're defined by the amount

NOTE Confidence: 0.857542634010315

00:22:20.636 --> 00:22:22.878 of time in which the Organism

NOTE Confidence: 0.857542634010315

00:22:22.878 --> 00:22:24.150 has multiple organ.

NOTE Confidence: 0.857542634010315

00:22:24.150 --> 00:22:26.346 We talk about humans in general,

NOTE Confidence: 0.857542634010315

00:22:26.350 --> 00:22:27.742 but potentially other animals.

NOTE Confidence: 0.857542634010315

00:22:27.742 --> 00:22:29.830 How much time that we have
NOTE Confidence: 0.857542634010315

00:22:29.899 --> 00:22:31.487 to anticipate that threat?
NOTE Confidence: 0.857542634010315

00:22:31.490 --> 00:22:33.686 OK, so as you can see,
NOTE Confidence: 0.857542634010315

00:22:33.690 --> 00:22:36.028 is that what we suggest is that
NOTE Confidence: 0.857542634010315

00:22:36.028 --> 00:22:38.308 if you can change the time
NOTE Confidence: 0.857542634010315

00:22:38.308 --> 00:22:40.298 and space to the threat,
NOTE Confidence: 0.857542634010315

00:22:40.300 --> 00:22:42.502 you can begin to separate these
NOTE Confidence: 0.857542634010315

00:22:42.502 --> 00:22:44.769 different components of fear and anxiety.
NOTE Confidence: 0.857542634010315

00:22:44.770 --> 00:22:46.384 I'm going to focus a little
NOTE Confidence: 0.857542634010315

00:22:46.384 --> 00:22:48.262 bit already today is is escaped
NOTE Confidence: 0.857542634010315

00:22:48.262 --> 00:22:50.107 decisions in our flight initiation,
NOTE Confidence: 0.857542634010315

00:22:50.110 --> 00:22:51.628 distance task and really show how
NOTE Confidence: 0.857542634010315

00:22:51.628 --> 00:22:53.911 time can have an effect upon these
NOTE Confidence: 0.857542634010315

00:22:53.911 --> 00:22:55.126 differences between cognitive,
NOTE Confidence: 0.857542634010315

00:22:55.130 --> 00:22:55.760 reactive fear.
NOTE Confidence: 0.839790761470795

00:22:58.460 --> 00:23:00.398 OK, So what are these strategies?

NOTE Confidence: 0.839790761470795
00:23:00.400 --> 00:23:03.160 If we go back to our model and we talked
NOTE Confidence: 0.839790761470795
00:23:03.237 --> 00:23:05.589 a little bit about these strategy,
NOTE Confidence: 0.839790761470795
00:23:05.590 --> 00:23:07.205 we talked about the contexts
NOTE Confidence: 0.839790761470795
00:23:07.205 --> 00:23:09.820 already and fans. I saw him in it.
NOTE Confidence: 0.839790761470795
00:23:09.820 --> 00:23:10.840 Spell immigrants continuum.
NOTE Confidence: 0.839790761470795
00:23:10.840 --> 00:23:12.880 So it's very early for me.
NOTE Confidence: 0.839790761470795
00:23:12.880 --> 00:23:15.436 I'm still not drinking my coffee.
NOTE Confidence: 0.839790761470795
00:23:15.440 --> 00:23:19.248 And what we've proposed at the cross these?
NOTE Confidence: 0.839790761470795
00:23:19.250 --> 00:23:21.002 Levels of threaten image.
NOTE Confidence: 0.839790761470795
00:23:21.002 --> 00:23:23.630 There's five key survival strategies that
NOTE Confidence: 0.839790761470795
00:23:23.697 --> 00:23:26.637 humans and potentially other animals perform.
NOTE Confidence: 0.839790761470795
00:23:26.640 --> 00:23:28.950 We call them prediction strategies,
NOTE Confidence: 0.839790761470795
00:23:28.950 --> 00:23:30.798 protection strategies or prevention
NOTE Confidence: 0.839790761470795
00:23:30.798 --> 00:23:32.643 strategies, threat oriented strategies,
NOTE Confidence: 0.839790761470795
00:23:32.643 --> 00:23:34.026 threat assessment strategies,
NOTE Confidence: 0.839790761470795

00:23:34.030 --> 00:23:36.340 and finally reactive defensive strategies.
NOTE Confidence: 0.839790761470795

00:23:36.340 --> 00:23:40.004 OK, so we take all of these strategies
NOTE Confidence: 0.839790761470795

00:23:40.004 --> 00:23:43.268 and we put them into a model.
NOTE Confidence: 0.839790761470795

00:23:43.270 --> 00:23:46.114 It looks something like this into
NOTE Confidence: 0.839790761470795

00:23:46.114 --> 00:23:49.319 a classic kind of box model so.
NOTE Confidence: 0.839790761470795

00:23:49.320 --> 00:23:52.225 If we look here on the left,
NOTE Confidence: 0.839790761470795

00:23:52.230 --> 00:23:54.720 we can see fans Lowe's Eminence
NOTE Confidence: 0.839790761470795

00:23:54.720 --> 00:23:55.550 context switch,
NOTE Confidence: 0.839790761470795

00:23:55.550 --> 00:23:57.974 go from safety Pre Encounter Post
NOTE Confidence: 0.839790761470795

00:23:57.974 --> 00:24:00.919 encountered a circus joy and what we've
NOTE Confidence: 0.839790761470795

00:24:00.919 --> 00:24:03.845 proposes that joint safety and pre encounter.
NOTE Confidence: 0.839790761470795

00:24:03.850 --> 00:24:06.322 The animal is trying to predict
NOTE Confidence: 0.839790761470795

00:24:06.322 --> 00:24:09.258 what's going to happen in the future
NOTE Confidence: 0.839790761470795

00:24:09.258 --> 00:24:10.800 through imagination and simulation.
NOTE Confidence: 0.839790761470795

00:24:10.800 --> 00:24:12.970 The threat to appear in the vault,
NOTE Confidence: 0.839790761470795

00:24:12.970 --> 00:24:15.010 where does it expect the threat

NOTE Confidence: 0.839790761470795
00:24:15.010 --> 00:24:17.160 to appear in the bottom OK?
NOTE Confidence: 0.839790761470795
00:24:17.160 --> 00:24:21.435 If it feels that. The sweat is big enough.
NOTE Confidence: 0.839790761470795
00:24:21.440 --> 00:24:23.785 What it would do next is going
NOTE Confidence: 0.839790761470795
00:24:23.785 --> 00:24:24.790 to prevention strategies.
NOTE Confidence: 0.839790761470795
00:24:24.790 --> 00:24:27.128 It can do this in two ways.
NOTE Confidence: 0.839790761470795
00:24:27.130 --> 00:24:28.906 It can either change the environment
NOTE Confidence: 0.839790761470795
00:24:28.906 --> 00:24:30.550 to protect itself from use
NOTE Confidence: 0.839790761470795
00:24:30.550 --> 00:24:32.158 construction or niche constructions.
NOTE Confidence: 0.839790761470795
00:24:32.160 --> 00:24:34.848 I say in America and what that means
NOTE Confidence: 0.839790761470795
00:24:34.848 --> 00:24:37.520 is that you can build a big wall,
NOTE Confidence: 0.839790761470795
00:24:37.520 --> 00:24:38.242 for example,
NOTE Confidence: 0.839790761470795
00:24:38.242 --> 00:24:40.769 living the nest to protect yourself from
NOTE Confidence: 0.839790761470795
00:24:40.769 --> 00:24:43.207 those threats so they can't get to you.
NOTE Confidence: 0.839790761470795
00:24:43.210 --> 00:24:43.555 OK,
NOTE Confidence: 0.839790761470795
00:24:43.555 --> 00:24:45.280 the classic example low energy
NOTE Confidence: 0.839790761470795

00:24:45.280 --> 00:24:46.900 is herding group living OK.
NOTE Confidence: 0.839790761470795

00:24:46.900 --> 00:24:49.012 Living in groups is a way
NOTE Confidence: 0.839790761470795

00:24:49.012 --> 00:24:50.420 to protect yourself against.
NOTE Confidence: 0.839790761470795

00:24:50.420 --> 00:24:51.812 Threats in the environment.
NOTE Confidence: 0.839790761470795

00:24:51.812 --> 00:24:52.160 OK,
NOTE Confidence: 0.839790761470795

00:24:52.160 --> 00:24:54.074 so you go through these prediction
NOTE Confidence: 0.839790761470795

00:24:54.074 --> 00:24:56.181 systems if you think there's a
NOTE Confidence: 0.839790761470795

00:24:56.181 --> 00:24:57.725 potential threat to encounter,
NOTE Confidence: 0.839790761470795

00:24:57.730 --> 00:25:00.159 you're going to these prevention systems now.
NOTE Confidence: 0.839790761470795

00:25:00.160 --> 00:25:02.540 If we switch over now into post
NOTE Confidence: 0.839790761470795

00:25:02.540 --> 00:25:03.972 Encounter stimulus appears in
NOTE Confidence: 0.839790761470795

00:25:03.972 --> 00:25:05.380 the environment that point.
NOTE Confidence: 0.839790761470795

00:25:05.380 --> 00:25:08.512 We're not sure if it's a threat or not.
NOTE Confidence: 0.839790761470795

00:25:08.520 --> 00:25:10.949 We go into these threat oriented strategies.
NOTE Confidence: 0.839790761470795

00:25:10.950 --> 00:25:12.966 This is where our attention can
NOTE Confidence: 0.839790761470795

00:25:12.966 --> 00:25:14.733 be driven towards specific parts

NOTE Confidence: 0.839790761470795
00:25:14.733 --> 00:25:15.819 of the environment.
NOTE Confidence: 0.839790761470795
00:25:15.820 --> 00:25:18.053 If we don't have a prediction about
NOTE Confidence: 0.839790761470795
00:25:18.053 --> 00:25:19.999 something appearing in that environment,
NOTE Confidence: 0.839790761470795
00:25:20.000 --> 00:25:20.754 for example.
NOTE Confidence: 0.839790761470795
00:25:20.754 --> 00:25:22.262 With foraging and something
NOTE Confidence: 0.839790761470795
00:25:22.262 --> 00:25:24.230 appears in our peripheral vision,
NOTE Confidence: 0.839790761470795
00:25:24.230 --> 00:25:26.526 it will capture our attention for you.
NOTE Confidence: 0.839790761470795
00:25:26.530 --> 00:25:28.215 Bottom Up attentional systems and
NOTE Confidence: 0.839790761470795
00:25:28.215 --> 00:25:30.271 this could either be a threat
NOTE Confidence: 0.839790761470795
00:25:30.271 --> 00:25:32.125 or it could be nice threaten.
NOTE Confidence: 0.839790761470795
00:25:32.130 --> 00:25:34.788 That would be a prediction error.
NOTE Confidence: 0.839790761470795
00:25:34.790 --> 00:25:36.812 Or if we're pretty good at
NOTE Confidence: 0.839790761470795
00:25:36.812 --> 00:25:37.823 our prediction strategies,
NOTE Confidence: 0.839790761470795
00:25:37.830 --> 00:25:40.341 and we expect that in a certain area of
NOTE Confidence: 0.839790761470795
00:25:40.341 --> 00:25:42.900 the environment a threat might appear.
NOTE Confidence: 0.839790761470795

00:25:42.900 --> 00:25:44.928 Maybe there's a Bush over there.
NOTE Confidence: 0.839790761470795

00:25:44.930 --> 00:25:47.296 We may pay more attention for Tip,
NOTE Confidence: 0.839790761470795

00:25:47.300 --> 00:25:48.644 top down attentional systems
NOTE Confidence: 0.839790761470795

00:25:48.644 --> 00:25:50.324 towards those past event where
NOTE Confidence: 0.839790761470795

00:25:50.324 --> 00:25:52.028 they may encounter the threat.
NOTE Confidence: 0.796291172504425

00:25:54.090 --> 00:25:55.530 What will happen next?
NOTE Confidence: 0.796291172504425

00:25:55.530 --> 00:25:58.197 It will even ignore that thing in
NOTE Confidence: 0.796291172504425

00:25:58.197 --> 00:26:00.552 the environment. It's not a threat.
NOTE Confidence: 0.796291172504425

00:26:00.552 --> 00:26:02.790 Maybe it's a conspecific a plastic
NOTE Confidence: 0.796291172504425

00:26:02.869 --> 00:26:05.550 bag floating in the night for example,
NOTE Confidence: 0.796291172504425

00:26:05.550 --> 00:26:07.842 or they're going to deeper processing
NOTE Confidence: 0.796291172504425

00:26:07.842 --> 00:26:09.370 through threat assessment strategies.
NOTE Confidence: 0.796291172504425

00:26:09.370 --> 00:26:10.854 This is where the.
NOTE Confidence: 0.796291172504425

00:26:10.854 --> 00:26:14.053 Can humans as well we use more of
NOTE Confidence: 0.796291172504425

00:26:14.053 --> 00:26:17.140 assessment of the value of that threat.
NOTE Confidence: 0.796291172504425

00:26:17.140 --> 00:26:19.396 They were tracked the movement predictions

NOTE Confidence: 0.796291172504425
00:26:19.396 --> 00:26:21.679 of that movements of that threat.
NOTE Confidence: 0.796291172504425
00:26:21.680 --> 00:26:23.995 They were searched for safety. OK.
NOTE Confidence: 0.796291172504425
00:26:23.995 --> 00:26:27.730 Where can I escape to what's the best place
NOTE Confidence: 0.796291172504425
00:26:27.823 --> 00:26:31.263 to escape 2 and execute that action OK?
NOTE Confidence: 0.796291172504425
00:26:31.270 --> 00:26:33.587 Finally, the sweat begins to attack them.
NOTE Confidence: 0.796291172504425
00:26:33.590 --> 00:26:35.486 A danger threshold is breached and
NOTE Confidence: 0.796291172504425
00:26:35.486 --> 00:26:37.889 they go into these more circus drive,
NOTE Confidence: 0.796291172504425
00:26:37.890 --> 00:26:39.214 defensive or reactive strategies.
NOTE Confidence: 0.796291172504425
00:26:39.214 --> 00:26:40.825 We refer to them. Now.
NOTE Confidence: 0.796291172504425
00:26:40.825 --> 00:26:42.820 This is where it begins to see
NOTE Confidence: 0.796291172504425
00:26:42.820 --> 00:26:44.599 more innate reactions just fight
NOTE Confidence: 0.796291172504425
00:26:44.599 --> 00:26:46.499 and flight responses as well.
NOTE Confidence: 0.796291172504425
00:26:46.500 --> 00:26:48.327 OK, we also begin to see those
NOTE Confidence: 0.796291172504425
00:26:48.327 --> 00:26:50.045 ramping up of analgesic responses
NOTE Confidence: 0.796291172504425
00:26:50.045 --> 00:26:51.785 in the midbrain regions,
NOTE Confidence: 0.796291172504425

00:26:51.790 --> 00:26:53.776 such as the packets are growing,
NOTE Confidence: 0.796291172504425

00:26:53.780 --> 00:26:56.518 which I'll come to in a minute, OK?
NOTE Confidence: 0.796291172504425

00:26:56.518 --> 00:26:59.026 So we have these five different
NOTE Confidence: 0.796291172504425

00:26:59.026 --> 00:27:02.324 strategies that can be used across these
NOTE Confidence: 0.796291172504425

00:27:02.324 --> 00:27:04.774 different levels of threat imminence.
NOTE Confidence: 0.796291172504425

00:27:04.780 --> 00:27:06.420 These continuously being updated
NOTE Confidence: 0.796291172504425

00:27:06.420 --> 00:27:08.880 by a set of overlapping potentially
NOTE Confidence: 0.796291172504425

00:27:08.940 --> 00:27:10.732 independent learning systems we
NOTE Confidence: 0.796291172504425

00:27:10.732 --> 00:27:12.972 can think about encounter learning.
NOTE Confidence: 0.796291172504425

00:27:12.980 --> 00:27:15.572 When I encounter the threat has
NOTE Confidence: 0.796291172504425

00:27:15.572 --> 00:27:17.300 been a more Pavlovian,
NOTE Confidence: 0.796291172504425

00:27:17.300 --> 00:27:20.150 maybe instrumental types of learning.
NOTE Confidence: 0.796291172504425

00:27:20.150 --> 00:27:21.956 But also I can learn vicariously
NOTE Confidence: 0.796291172504425

00:27:21.956 --> 00:27:24.071 for living a group or still my
NOTE Confidence: 0.796291172504425

00:27:24.071 --> 00:27:25.769 friend being attacked by a threat
NOTE Confidence: 0.796291172504425

00:27:25.769 --> 00:27:27.886 or somebody tells me the story

NOTE Confidence: 0.796291172504425
00:27:27.886 --> 00:27:29.976 about somebody being attacked in a
NOTE Confidence: 0.796291172504425
00:27:29.976 --> 00:27:31.556 certain part of the environment,
NOTE Confidence: 0.796291172504425
00:27:31.560 --> 00:27:33.456 can learn vicariously about those threats,
NOTE Confidence: 0.796291172504425
00:27:33.460 --> 00:27:36.516 will come back to that in a minute.
NOTE Confidence: 0.796291172504425
00:27:36.520 --> 00:27:38.435 We can also bridge information
NOTE Confidence: 0.796291172504425
00:27:38.435 --> 00:27:39.967 that we've never experienced.
NOTE Confidence: 0.796291172504425
00:27:39.970 --> 00:27:41.498 We can think about.
NOTE Confidence: 0.796291172504425
00:27:41.498 --> 00:27:41.880 Well,
NOTE Confidence: 0.796291172504425
00:27:41.880 --> 00:27:42.628 well, lot.
NOTE Confidence: 0.796291172504425
00:27:42.628 --> 00:27:44.872 She's example of David Umi says
NOTE Confidence: 0.796291172504425
00:27:44.872 --> 00:27:46.845 that through our imagination we
NOTE Confidence: 0.796291172504425
00:27:46.845 --> 00:27:49.155 can think about a gold mountain.
NOTE Confidence: 0.796291172504425
00:27:49.160 --> 00:27:51.458 We've never seen a gold mountain.
NOTE Confidence: 0.796291172504425
00:27:51.460 --> 00:27:55.290 But what we can do is we can imagine gold.
NOTE Confidence: 0.796291172504425
00:27:55.290 --> 00:27:57.200 We can imagine the mountain.
NOTE Confidence: 0.796291172504425

00:27:57.200 --> 00:27:59.462 We can combine those two parts
NOTE Confidence: 0.796291172504425

00:27:59.462 --> 00:28:01.840 of our imagination to create the.
NOTE Confidence: 0.796291172504425

00:28:01.840 --> 00:28:05.530 In our minds eye, a goldmountain.
NOTE Confidence: 0.796291172504425

00:28:05.530 --> 00:28:08.148 So we can do this is probably
NOTE Confidence: 0.796291172504425

00:28:08.148 --> 00:28:09.270 not likely done,
NOTE Confidence: 0.796291172504425

00:28:09.270 --> 00:28:12.170 but what we can do a lot of the times
NOTE Confidence: 0.796291172504425

00:28:12.248 --> 00:28:14.924 that we can make inferences about
NOTE Confidence: 0.796291172504425

00:28:14.924 --> 00:28:17.499 what a potential threat might do,
NOTE Confidence: 0.796291172504425

00:28:17.500 --> 00:28:19.738 although we've never experienced that threat,
NOTE Confidence: 0.796291172504425

00:28:19.740 --> 00:28:21.006 doing it OK.
NOTE Confidence: 0.796291172504425

00:28:21.006 --> 00:28:23.116 So that's where imagination stimulation
NOTE Confidence: 0.796291172504425

00:28:23.116 --> 00:28:25.020 systems are very important.
NOTE Confidence: 0.796291172504425

00:28:25.020 --> 00:28:27.435 And finally what we have is a
NOTE Confidence: 0.796291172504425

00:28:27.435 --> 00:28:30.418 monetary system where we can have this
NOTE Confidence: 0.796291172504425

00:28:30.418 --> 00:28:32.290 cognitive appraisal reappraisal or
NOTE Confidence: 0.796291172504425

00:28:32.290 --> 00:28:34.650 cognitive control of these systems OK.

NOTE Confidence: 0.796291172504425

00:28:34.650 --> 00:28:37.210 Where we can down regulate it to these

NOTE Confidence: 0.796291172504425

00:28:37.210 --> 00:28:39.449 challenges with various levels of success,

NOTE Confidence: 0.796291172504425

00:28:39.450 --> 00:28:41.305 the monetary system will and

NOTE Confidence: 0.796291172504425

00:28:41.305 --> 00:28:43.160 reappraising the process system would

NOTE Confidence: 0.796291172504425

00:28:43.217 --> 00:28:45.407 probably play more role in these

NOTE Confidence: 0.796291172504425

00:28:45.407 --> 00:28:46.867 pre encountering posting counter

NOTE Confidence: 0.796291172504425

00:28:46.929 --> 00:28:49.177 responses as you go down to do more

NOTE Confidence: 0.796291172504425

00:28:49.177 --> 00:28:50.913 reactive types of strategies then

NOTE Confidence: 0.796291172504425

00:28:50.913 --> 00:28:53.259 you may see that the consciousness

NOTE Confidence: 0.796291172504425

00:28:53.259 --> 00:28:55.544 have less of control over them

NOTE Confidence: 0.796291172504425

00:28:55.544 --> 00:28:57.364 although they may have some.

NOTE Confidence: 0.796291172504425

00:28:57.370 --> 00:28:58.834 What's interesting about this?

NOTE Confidence: 0.796291172504425

00:28:58.834 --> 00:28:59.936 This model, though,

NOTE Confidence: 0.796291172504425

00:28:59.936 --> 00:29:01.766 is what's different in humans.

NOTE Confidence: 0.796291172504425

00:29:01.770 --> 00:29:03.605 I think that there's really

NOTE Confidence: 0.796291172504425

00:29:03.605 --> 00:29:05.073 a number of things,
NOTE Confidence: 0.824970424175262

00:29:05.080 --> 00:29:07.306 but I think there's two key things
NOTE Confidence: 0.824970424175262

00:29:07.306 --> 00:29:09.850 that are very different about humans,
NOTE Confidence: 0.824970424175262

00:29:09.850 --> 00:29:12.083 which almost make us the optimal speech
NOTE Confidence: 0.824970424175262

00:29:12.083 --> 00:29:14.249 of aiding and avoiding predators.
NOTE Confidence: 0.824970424175262

00:29:14.250 --> 00:29:16.512 And that is through this wonderful
NOTE Confidence: 0.824970424175262

00:29:16.512 --> 00:29:18.420 imagination system prediction strategies and
NOTE Confidence: 0.824970424175262

00:29:18.420 --> 00:29:20.490 this wonderful system of vicarious learning.
NOTE Confidence: 0.824970424175262

00:29:20.490 --> 00:29:22.554 We can learn from others if
NOTE Confidence: 0.824970424175262

00:29:22.554 --> 00:29:24.530 you can learn from others.
NOTE Confidence: 0.824970424175262

00:29:24.530 --> 00:29:26.460 Or you can imagine encountering
NOTE Confidence: 0.824970424175262

00:29:26.460 --> 00:29:29.330 threaten in the future and you avoid it.
NOTE Confidence: 0.824970424175262

00:29:29.330 --> 00:29:31.140 That's the most optimal defensive
NOTE Confidence: 0.824970424175262

00:29:31.140 --> 00:29:33.290 strategy that any Organism can have.
NOTE Confidence: 0.824970424175262

00:29:33.290 --> 00:29:35.621 The every Organism tries not to actually
NOTE Confidence: 0.824970424175262

00:29:35.621 --> 00:29:37.250 encounter the predators themselves.

NOTE Confidence: 0.824970424175262
00:29:37.250 --> 00:29:39.050 We have these wonderful systems
NOTE Confidence: 0.824970424175262
00:29:39.050 --> 00:29:40.850 to protect us against that.
NOTE Confidence: 0.824970424175262
00:29:40.850 --> 00:29:44.450 But as we know, this can get us in trouble.
NOTE Confidence: 0.824970424175262
00:29:44.450 --> 00:29:46.900 OK, we can simulate threats that are
NOTE Confidence: 0.824970424175262
00:29:46.900 --> 00:29:48.769 known that actually don't exist.
NOTE Confidence: 0.824970424175262
00:29:48.770 --> 00:29:50.930 OK, we can learn about threats
NOTE Confidence: 0.824970424175262
00:29:50.930 --> 00:29:52.370 from watching the news.
NOTE Confidence: 0.824970424175262
00:29:52.370 --> 00:29:54.230 For example, we can watch.
NOTE Confidence: 0.824970424175262
00:29:54.230 --> 00:29:56.582 A shooting in a different part of the
NOTE Confidence: 0.824970424175262
00:29:56.582 --> 00:29:58.763 world and feel that we're in threat
NOTE Confidence: 0.824970424175262
00:29:58.763 --> 00:30:01.050 in California or on the East Coast,
NOTE Confidence: 0.824970424175262
00:30:01.050 --> 00:30:01.670 for example.
NOTE Confidence: 0.824970424175262
00:30:01.670 --> 00:30:03.220 Although that place is thousands
NOTE Confidence: 0.824970424175262
00:30:03.220 --> 00:30:04.150 of miles away.
NOTE Confidence: 0.824970424175262
00:30:04.150 --> 00:30:06.142 So it seems in today's culture
NOTE Confidence: 0.824970424175262

00:30:06.142 --> 00:30:08.084 where we probably have more time
NOTE Confidence: 0.824970424175262

00:30:08.084 --> 00:30:09.728 to think that we used to.
NOTE Confidence: 0.824970424175262

00:30:09.730 --> 00:30:10.388 Well, actually,
NOTE Confidence: 0.824970424175262

00:30:10.388 --> 00:30:12.362 before we have less time to
NOTE Confidence: 0.824970424175262

00:30:12.362 --> 00:30:13.760 think that we used to,
NOTE Confidence: 0.824970424175262

00:30:13.760 --> 00:30:16.136 but we have more time to think about
NOTE Confidence: 0.824970424175262

00:30:16.136 --> 00:30:18.312 bad things because of all the bad
NOTE Confidence: 0.824970424175262

00:30:18.312 --> 00:30:20.845 things that we read about in the media
NOTE Confidence: 0.824970424175262

00:30:20.845 --> 00:30:23.057 and all of the information online and
NOTE Confidence: 0.824970424175262

00:30:23.060 --> 00:30:24.715 can really impact these vicarious
NOTE Confidence: 0.824970424175262

00:30:24.715 --> 00:30:26.909 learning systems and give us a skewed.
NOTE Confidence: 0.824970424175262

00:30:26.910 --> 00:30:28.838 View of the world and we know this
NOTE Confidence: 0.824970424175262

00:30:28.838 --> 00:30:30.458 occurs in police officers and so
NOTE Confidence: 0.824970424175262

00:30:30.458 --> 00:30:32.386 on are very skewed view of the
NOTE Confidence: 0.824970424175262

00:30:32.386 --> 00:30:33.934 world when they go from Chrome
NOTE Confidence: 0.824970424175262

00:30:33.934 --> 00:30:35.490 to Chrome to crime for example.

NOTE Confidence: 0.824970424175262
00:30:35.490 --> 00:30:36.530 Just simple example there.
NOTE Confidence: 0.824970424175262
00:30:36.530 --> 00:30:38.554 So this is really the sort of model
NOTE Confidence: 0.824970424175262
00:30:38.554 --> 00:30:40.170 that we've been trying to use.
NOTE Confidence: 0.824970424175262
00:30:40.170 --> 00:30:41.880 The great thing about creating
NOTE Confidence: 0.824970424175262
00:30:41.880 --> 00:30:42.906 these types of.
NOTE Confidence: 0.824970424175262
00:30:42.910 --> 00:30:44.968 Models is that they create a framework
NOTE Confidence: 0.824970424175262
00:30:44.968 --> 00:30:47.896 for you to be able to test them empirically.
NOTE Confidence: 0.824970424175262
00:30:47.900 --> 00:30:50.268 And I should say 1 final thing is,
NOTE Confidence: 0.824970424175262
00:30:50.270 --> 00:30:50.798 is there.
NOTE Confidence: 0.824970424175262
00:30:50.798 --> 00:30:52.910 That is one thing I think is we're
NOTE Confidence: 0.824970424175262
00:30:52.978 --> 00:30:53.820 missing again,
NOTE Confidence: 0.824970424175262
00:30:53.820 --> 00:30:55.885 as I mentioned a little bit earlier,
NOTE Confidence: 0.824970424175262
00:30:55.890 --> 00:30:57.594 but one thing it's really been
NOTE Confidence: 0.824970424175262
00:30:57.594 --> 00:30:59.701 missing is the way that we approach
NOTE Confidence: 0.824970424175262
00:30:59.701 --> 00:31:01.519 the study of fear and anxiety,
NOTE Confidence: 0.824970424175262

00:31:01.520 --> 00:31:03.278 and particularly humans is that we
NOTE Confidence: 0.824970424175262

00:31:03.278 --> 00:31:05.676 study it as a way of saying look
NOTE Confidence: 0.824970424175262

00:31:05.676 --> 00:31:06.836 is this context of.
NOTE Confidence: 0.824970424175262

00:31:06.840 --> 00:31:08.320 For example in Pavlovian conditioning.
NOTE Confidence: 0.824970424175262

00:31:08.320 --> 00:31:10.210 But we rarely ever do is look at how
NOTE Confidence: 0.824970424175262

00:31:10.210 --> 00:31:12.195 we switch between these different
NOTE Confidence: 0.824970424175262

00:31:12.195 --> 00:31:13.055 defensive states.
NOTE Confidence: 0.824970424175262

00:31:13.060 --> 00:31:13.371 OK,
NOTE Confidence: 0.824970424175262

00:31:13.371 --> 00:31:15.548 and we can use time and distance
NOTE Confidence: 0.824970424175262

00:31:15.548 --> 00:31:18.227 as a way to be able to do that.
NOTE Confidence: 0.824970424175262

00:31:18.230 --> 00:31:18.760 OK.
NOTE Confidence: 0.817914605140686

00:31:21.760 --> 00:31:23.188 Oh, I so let's think Libor,
NOTE Confidence: 0.817914605140686

00:31:23.190 --> 00:31:23.901 then about threat,
NOTE Confidence: 0.817914605140686

00:31:23.901 --> 00:31:25.086 imminence and human defensive circus.
NOTE Confidence: 0.817914605140686

00:31:25.090 --> 00:31:26.922 And so I'm taking me a little bit
NOTE Confidence: 0.817914605140686

00:31:26.922 --> 00:31:28.895 of time to get to the actual date.

NOTE Confidence: 0.817914605140686
00:31:28.900 --> 00:31:30.090 I know you probably been.
NOTE Confidence: 0.817914605140686
00:31:30.090 --> 00:31:31.986 We're going to see some of the data,
NOTE Confidence: 0.817914605140686
00:31:31.990 --> 00:31:34.366 but I think it's important that I kind
NOTE Confidence: 0.817914605140686
00:31:34.366 --> 00:31:36.669 of justify why I do these experiments.
NOTE Confidence: 0.817914605140686
00:31:36.670 --> 00:31:38.902 Just a quick note here that if you
NOTE Confidence: 0.817914605140686
00:31:38.902 --> 00:31:41.532 go into newest since and you type in
NOTE Confidence: 0.817914605140686
00:31:41.532 --> 00:31:44.227 fear and anxiety what you'll find is
NOTE Confidence: 0.817914605140686
00:31:44.227 --> 00:31:46.387 almost identical brain regions become
NOTE Confidence: 0.817914605140686
00:31:46.387 --> 00:31:48.656 inactive for those two terms and.
NOTE Confidence: 0.817914605140686
00:31:48.656 --> 00:31:51.169 The argument is that they are different
NOTE Confidence: 0.817914605140686
00:31:51.169 --> 00:31:53.961 systems of the brain and this is this
NOTE Confidence: 0.817914605140686
00:31:53.961 --> 00:31:56.436 is some respects that confounded the
NOTE Confidence: 0.817914605140686
00:31:56.436 --> 00:31:59.236 way that we approach fear and anxiety,
NOTE Confidence: 0.817914605140686
00:31:59.236 --> 00:32:01.812 and it's it's a conference because people
NOTE Confidence: 0.817914605140686
00:32:01.812 --> 00:32:04.896 tend to not that after but tend to use
NOTE Confidence: 0.817914605140686

00:32:04.896 --> 00:32:06.620 interchangeably use those two terms,
NOTE Confidence: 0.817914605140686

00:32:06.620 --> 00:32:08.738 and when they're talking about feelings,
NOTE Confidence: 0.817914605140686

00:32:08.740 --> 00:32:10.500 ieti the tops of paradigms,
NOTE Confidence: 0.817914605140686

00:32:10.500 --> 00:32:12.618 they tend to use such things
NOTE Confidence: 0.817914605140686

00:32:12.618 --> 00:32:14.030 as fearful facial expression,
NOTE Confidence: 0.817914605140686

00:32:14.030 --> 00:32:16.202 that the perception of fearful folks
NOTE Confidence: 0.817914605140686

00:32:16.202 --> 00:32:18.481 pushing which we know really does
NOTE Confidence: 0.817914605140686

00:32:18.481 --> 00:32:20.396 evoke activity in the amygdala.
NOTE Confidence: 0.817914605140686

00:32:20.400 --> 00:32:22.038 But what we're shows a lot of
NOTE Confidence: 0.817914605140686

00:32:22.038 --> 00:32:23.878 research that we do is we don't
NOTE Confidence: 0.817914605140686

00:32:23.878 --> 00:32:25.228 necessarily always see the amygdala
NOTE Confidence: 0.817914605140686

00:32:25.228 --> 00:32:27.548 in our response as we look at the
NOTE Confidence: 0.817914605140686

00:32:27.548 --> 00:32:28.680 transition between fierce days.
NOTE Confidence: 0.782032132148743

00:32:30.740 --> 00:32:33.080 And again in this recent paper,
NOTE Confidence: 0.782032132148743

00:32:33.080 --> 00:32:34.800 we propose that there's a
NOTE Confidence: 0.782032132148743

00:32:34.800 --> 00:32:36.520 defensive circuit extends from the

NOTE Confidence: 0.782032132148743

00:32:36.586 --> 00:32:38.538 prefrontal cortex and hippocampus.

NOTE Confidence: 0.782032132148743

00:32:38.540 --> 00:32:40.941 We think of those two regions of

NOTE Confidence: 0.782032132148743

00:32:40.941 --> 00:32:44.155 the core of what we would call an

NOTE Confidence: 0.782032132148743

00:32:44.155 --> 00:32:46.730 anxiety circuitry along with the bass,

NOTE Confidence: 0.782032132148743

00:32:46.730 --> 00:32:48.116 electronica, singular, and.

NOTE Confidence: 0.782032132148743

00:32:48.116 --> 00:32:50.426 And this extends into the

NOTE Confidence: 0.782032132148743

00:32:50.426 --> 00:32:52.340 midbrain and hypothalamus,

NOTE Confidence: 0.782032132148743

00:32:52.340 --> 00:32:54.224 particularly the midbrain of

NOTE Confidence: 0.782032132148743

00:32:54.224 --> 00:32:57.050 the regions of the Parker Dr.

NOTE Confidence: 0.782032132148743

00:32:57.050 --> 00:32:58.934 Gray, which were associated

NOTE Confidence: 0.782032132148743

00:32:58.934 --> 00:33:01.289 with passive and active coping,

NOTE Confidence: 0.782032132148743

00:33:01.290 --> 00:33:04.210 freezing and fly behaviors.

NOTE Confidence: 0.782032132148743

00:33:04.210 --> 00:33:05.574 Nothing too much details,

NOTE Confidence: 0.782032132148743

00:33:05.574 --> 00:33:07.620 but we become more influenced by

NOTE Confidence: 0.782032132148743

00:33:07.679 --> 00:33:10.215 some of the work will be conducted in

NOTE Confidence: 0.782032132148743

00:33:10.215 --> 00:33:11.968 these population codes that rather
NOTE Confidence: 0.782032132148743

00:33:11.968 --> 00:33:14.080 than thinking about one region is
NOTE Confidence: 0.782032132148743

00:33:14.080 --> 00:33:16.486 involved in one thing and the other
NOTE Confidence: 0.782032132148743

00:33:16.486 --> 00:33:17.850 regions completely switched off,
NOTE Confidence: 0.782032132148743

00:33:17.850 --> 00:33:19.614 it's really sort of mixture of
NOTE Confidence: 0.782032132148743

00:33:19.614 --> 00:33:21.224 all of these different population
NOTE Confidence: 0.782032132148743

00:33:21.224 --> 00:33:23.084 codes across these circuits that
NOTE Confidence: 0.782032132148743

00:33:23.084 --> 00:33:24.977 will be associated with different
NOTE Confidence: 0.782032132148743

00:33:24.977 --> 00:33:26.697 defensive responses where we have
NOTE Confidence: 0.782032132148743

00:33:26.697 --> 00:33:29.103 our toes dipping a little bit in.
NOTE Confidence: 0.782032132148743

00:33:29.103 --> 00:33:30.467 Lisa Feldman Barrett theory,
NOTE Confidence: 0.782032132148743

00:33:30.470 --> 00:33:32.175 but we believe that their
NOTE Confidence: 0.782032132148743

00:33:32.175 --> 00:33:33.539 structure to this OK?
NOTE Confidence: 0.808350324630737

00:33:35.550 --> 00:33:37.125 So how does thread transfer
NOTE Confidence: 0.808350324630737

00:33:37.125 --> 00:33:38.385 along these defensive circuits?
NOTE Confidence: 0.808350324630737

00:33:38.390 --> 00:33:40.910 I want to give you a simple example.

NOTE Confidence: 0.808350324630737
00:33:40.910 --> 00:33:42.485 Now of the posting counter
NOTE Confidence: 0.808350324630737
00:33:42.485 --> 00:33:44.060 circa strike through US minute,
NOTE Confidence: 0.808350324630737
00:33:44.060 --> 00:33:47.426 you may have seen this video.
NOTE Confidence: 0.808350324630737
00:33:47.430 --> 00:33:49.910 And I must warn you in this video,
NOTE Confidence: 0.808350324630737
00:33:49.910 --> 00:33:51.150 nobody was was killed.
NOTE Confidence: 0.924256980419159
00:33:54.800 --> 00:34:00.904 OK, so this is some individuals who.
NOTE Confidence: 0.924256980419159
00:34:00.910 --> 00:34:02.638 The filming on top of another
NOTE Confidence: 0.924256980419159
00:34:02.638 --> 00:34:04.379 phone which you can see here,
NOTE Confidence: 0.924256980419159
00:34:04.380 --> 00:34:06.340 is the tour guide and what they
NOTE Confidence: 0.924256980419159
00:34:06.340 --> 00:34:08.139 know is that in that grass.
NOTE Confidence: 0.924256980419159
00:34:08.140 --> 00:34:09.580 OK, there is a Tiger,
NOTE Confidence: 0.924256980419159
00:34:09.580 --> 00:34:11.631 so we know this is posted accounts
NOTE Confidence: 0.924256980419159
00:34:11.631 --> 00:34:13.916 you can't see it, but we know that
NOTE Confidence: 0.924256980419159
00:34:13.916 --> 00:34:17.590 there's a Tiger in that grass, OK?
NOTE Confidence: 0.924256980419159
00:34:17.590 --> 00:34:21.370 So all of a sudden now we
NOTE Confidence: 0.924256980419159

00:34:21.370 --> 00:34:24.929 switched over to Circus Strike.
NOTE Confidence: 0.924256980419159
00:34:24.930 --> 00:34:29.700 OK, the sweat is attacking OK.
NOTE Confidence: 0.924256980419159
00:34:29.700 --> 00:34:31.420 Alright, there you go.
NOTE Confidence: 0.924256980419159
00:34:31.420 --> 00:34:34.000 You can go to attackfootage.com if
NOTE Confidence: 0.924256980419159
00:34:34.076 --> 00:34:36.484 you wanna find out more from it.
NOTE Confidence: 0.924256980419159
00:34:36.490 --> 00:34:38.786 So what we can see here then is
NOTE Confidence: 0.924256980419159
00:34:38.786 --> 00:34:40.868 the join the posting counter.
NOTE Confidence: 0.924256980419159
00:34:40.870 --> 00:34:42.242 There's a threat there,
NOTE Confidence: 0.924256980419159
00:34:42.242 --> 00:34:44.580 but you know you can't see it.
NOTE Confidence: 0.924256980419159
00:34:44.580 --> 00:34:46.596 We don't know at that point
NOTE Confidence: 0.924256980419159
00:34:46.596 --> 00:34:48.041 if it's attacking, OK?
NOTE Confidence: 0.924256980419159
00:34:48.041 --> 00:34:50.627 We switch over now to circus.
NOTE Confidence: 0.924256980419159
00:34:50.630 --> 00:34:51.290 Joy OK,
NOTE Confidence: 0.924256980419159
00:34:51.290 --> 00:34:53.600 and the intensity of that threat going
NOTE Confidence: 0.924256980419159
00:34:53.600 --> 00:34:56.055 from the distal to proxamol is what
NOTE Confidence: 0.924256980419159
00:34:56.055 --> 00:34:58.658 we're interested in in their first study.

NOTE Confidence: 0.924256980419159
00:34:58.660 --> 00:35:00.670 What's changing in the brain when
NOTE Confidence: 0.924256980419159
00:35:00.670 --> 00:35:04.530 the threat is here versus here, OK?
NOTE Confidence: 0.924256980419159
00:35:04.530 --> 00:35:06.250 And a vicarious learning mechanism.
NOTE Confidence: 0.924256980419159
00:35:06.250 --> 00:35:09.190 There is a stick is not a
NOTE Confidence: 0.924256980419159
00:35:09.190 --> 00:35:11.280 great weapon against a Tiger.
NOTE Confidence: 0.924256980419159
00:35:11.280 --> 00:35:14.880 OK, so I'll skip over this one pretty quick.
NOTE Confidence: 0.924256980419159
00:35:14.880 --> 00:35:16.940 It was somewhat primitive study
NOTE Confidence: 0.924256980419159
00:35:16.940 --> 00:35:19.689 back in the glory days of fMRI.
NOTE Confidence: 0.924256980419159
00:35:19.690 --> 00:35:22.458 What we created was it was a task
NOTE Confidence: 0.924256980419159
00:35:22.458 --> 00:35:24.806 which is a bit like PAC man.
NOTE Confidence: 0.924256980419159
00:35:24.810 --> 00:35:26.850 OK, subjects in the MRI scan.
NOTE Confidence: 0.924256980419159
00:35:26.850 --> 00:35:29.223 It was scanning their brain and what
NOTE Confidence: 0.924256980419159
00:35:29.223 --> 00:35:32.647 they can do using the keypad is to move left,
NOTE Confidence: 0.924256980419159
00:35:32.650 --> 00:35:32.991 right,
NOTE Confidence: 0.924256980419159
00:35:32.991 --> 00:35:35.719 up and down in a 2 dimensional maze.
NOTE Confidence: 0.924256980419159

00:35:35.720 --> 00:35:38.720 To avoid this red dot OK.
NOTE Confidence: 0.924256980419159

00:35:38.720 --> 00:35:40.862 Now what we're interested in is
NOTE Confidence: 0.924256980419159

00:35:40.862 --> 00:35:42.658 parametrically what happens in the
NOTE Confidence: 0.924256980419159

00:35:42.658 --> 00:35:44.793 brain when the threat is further away
NOTE Confidence: 0.924256980419159

00:35:44.793 --> 00:35:47.136 versus when the threat is closer to them.
NOTE Confidence: 0.924256980419159

00:35:47.140 --> 00:35:50.380 OK, what we found is that when the red dot,
NOTE Confidence: 0.924256980419159

00:35:50.380 --> 00:35:52.648 which I should say if it can't,
NOTE Confidence: 0.924256980419159

00:35:52.650 --> 00:35:54.600 if the red dot captured them,
NOTE Confidence: 0.924256980419159

00:35:54.600 --> 00:35:56.538 they will receive an electric shock.
NOTE Confidence: 0.924256980419159

00:35:56.540 --> 00:35:58.626 OK, we removed the conditions and create
NOTE Confidence: 0.924256980419159

00:35:58.626 --> 00:36:01.079 a time to time delay between shots,
NOTE Confidence: 0.924256980419159

00:36:01.080 --> 00:36:03.664 and we're not looking at stock effects here,
NOTE Confidence: 0.924256980419159

00:36:03.670 --> 00:36:04.276 OK?
NOTE Confidence: 0.924256980419159

00:36:04.276 --> 00:36:05.488 What we?
NOTE Confidence: 0.924256980419159

00:36:05.488 --> 00:36:09.730 Discoveries when the threat was further away,
NOTE Confidence: 0.924256980419159

00:36:09.730 --> 00:36:11.790 this activated regions of the

NOTE Confidence: 0.924256980419159
00:36:11.790 --> 00:36:13.438 venture medial prefrontal cortex,
NOTE Confidence: 0.924256980419159
00:36:13.440 --> 00:36:15.330 particularly extending to the subgenual
NOTE Confidence: 0.924256980419159
00:36:15.330 --> 00:36:18.390 regions of that of the prefrontal cortex.
NOTE Confidence: 0.924256980419159
00:36:18.390 --> 00:36:19.623 We also found,
NOTE Confidence: 0.924256980419159
00:36:19.623 --> 00:36:20.856 because we did,
NOTE Confidence: 0.924256980419159
00:36:20.860 --> 00:36:24.046 our resolution image in here with
NOTE Confidence: 0.924256980419159
00:36:24.046 --> 00:36:26.540 the 1.5 millimeter slices we.
NOTE Confidence: 0.924256980419159
00:36:26.540 --> 00:36:29.235 Found that natural pastor Mixer also active,
NOTE Confidence: 0.924256980419159
00:36:29.240 --> 00:36:31.496 although we bet will look to
NOTE Confidence: 0.924256980419159
00:36:31.496 --> 00:36:33.880 talk about that in the paper.
NOTE Confidence: 0.924256980419159
00:36:33.880 --> 00:36:35.515 Mainly because people at that
NOTE Confidence: 0.924256980419159
00:36:35.515 --> 00:36:37.150 time didn't believe that you
NOTE Confidence: 0.924256980419159
00:36:37.214 --> 00:36:38.742 could separate using everybody
NOTE Confidence: 0.924256980419159
00:36:38.742 --> 00:36:40.652 why you couldn't separate the.
NOTE Confidence: 0.924256980419159
00:36:40.660 --> 00:36:42.024 Regions of the amygdala.
NOTE Confidence: 0.924256980419159

00:36:42.024 --> 00:36:43.047 So after threats,
NOTE Confidence: 0.924256980419159
00:36:43.050 --> 00:36:45.102 which is to start coming closer
NOTE Confidence: 0.924256980419159
00:36:45.102 --> 00:36:46.128 to the subject,
NOTE Confidence: 0.924256980419159
00:36:46.130 --> 00:36:48.524 we see switching out to the midbrain.
NOTE Confidence: 0.924256980419159
00:36:48.530 --> 00:36:49.556 Parker Dr Gray.
NOTE Confidence: 0.924256980419159
00:36:49.556 --> 00:36:52.629 OK, those you don't know much about the park.
NOTE Confidence: 0.924256980419159
00:36:52.630 --> 00:36:54.961 Dr Gray is the region that's associated
NOTE Confidence: 0.924256980419159
00:36:54.961 --> 00:36:57.418 with fight flight and freeze in behaviors,
NOTE Confidence: 0.924256980419159
00:36:57.420 --> 00:36:58.386 along with hypothalamus,
NOTE Confidence: 0.924256980419159
00:36:58.386 --> 00:37:00.640 which is believed to also be involved
NOTE Confidence: 0.924256980419159
00:37:00.696 --> 00:37:02.128 in instigating those responses
NOTE Confidence: 0.924256980419159
00:37:02.128 --> 00:37:03.918 along with the amygdala output.
NOTE Confidence: 0.924256980419159
00:37:03.920 --> 00:37:05.887 And we know that if you go
NOTE Confidence: 0.924256980419159
00:37:05.887 --> 00:37:06.730 into rodents and
NOTE Confidence: 0.780320346355438
00:37:06.804 --> 00:37:09.204 you stimulate specific columns of the
NOTE Confidence: 0.780320346355438
00:37:09.204 --> 00:37:11.502 power grid Tegra, you will evoke.

NOTE Confidence: 0.780320346355438
00:37:11.502 --> 00:37:13.686 Active coping such things as fight
NOTE Confidence: 0.780320346355438
00:37:13.686 --> 00:37:16.406 and flight, and if you go to the
NOTE Confidence: 0.780320346355438
00:37:16.406 --> 00:37:18.556 eventual parts of the back doctor
NOTE Confidence: 0.780320346355438
00:37:18.556 --> 00:37:20.741 value will see freezing behavior
NOTE Confidence: 0.780320346355438
00:37:20.741 --> 00:37:23.199 of those regions are stimulated.
NOTE Confidence: 0.780320346355438
00:37:23.200 --> 00:37:25.488 OK, so it was noise to show that
NOTE Confidence: 0.780320346355438
00:37:25.488 --> 00:37:27.515 there were these switches between
NOTE Confidence: 0.780320346355438
00:37:27.515 --> 00:37:29.815 cortical and mid brain regions
NOTE Confidence: 0.780320346355438
00:37:29.815 --> 00:37:32.049 associated with more strategizing of
NOTE Confidence: 0.780320346355438
00:37:32.049 --> 00:37:34.539 the prefrontal cortex is I believe,
NOTE Confidence: 0.780320346355438
00:37:34.540 --> 00:37:36.965 and more reactive responses in
NOTE Confidence: 0.780320346355438
00:37:36.965 --> 00:37:39.390 the Midlands threat came closer.
NOTE Confidence: 0.780320346355438
00:37:39.390 --> 00:37:41.100 Now we followed this up with
NOTE Confidence: 0.780320346355438
00:37:41.100 --> 00:37:43.019 the paper we published a couple
NOTE Confidence: 0.780320346355438
00:37:43.019 --> 00:37:44.809 years later and general cognitive
NOTE Confidence: 0.780320346355438

00:37:44.809 --> 00:37:46.974 neuroscience and what we found was

NOTE Confidence: 0.780320346355438

00:37:46.974 --> 00:37:48.689 we festival replicated this finding.

NOTE Confidence: 0.780320346355438

00:37:48.690 --> 00:37:50.846 But what we also found is that

NOTE Confidence: 0.780320346355438

00:37:50.846 --> 00:37:52.504 when subjects made more refer

NOTE Confidence: 0.780320346355438

00:37:52.504 --> 00:37:54.502 to Hispanic related motel is the

NOTE Confidence: 0.780320346355438

00:37:54.502 --> 00:37:56.368 more miss presses they play.

NOTE Confidence: 0.780320346355438

00:37:56.370 --> 00:37:58.080 When they were being attacked

NOTE Confidence: 0.780320346355438

00:37:58.080 --> 00:37:59.448 by this virtual predator,

NOTE Confidence: 0.780320346355438

00:37:59.450 --> 00:38:01.430 we found that that they rated

NOTE Confidence: 0.780320346355438

00:38:01.430 --> 00:38:03.166 themselves is really more panicky

NOTE Confidence: 0.780320346355438

00:38:03.166 --> 00:38:04.916 when the threat was closer,

NOTE Confidence: 0.780320346355438

00:38:04.920 --> 00:38:06.630 but also that correlated with

NOTE Confidence: 0.780320346355438

00:38:06.630 --> 00:38:08.340 increased activity in the midbrain.

NOTE Confidence: 0.780320346355438

00:38:08.340 --> 00:38:10.386 Popular Tegra, along with the door.

NOTE Confidence: 0.780320346355438

00:38:10.390 --> 00:38:11.686 So raffle nuclear,

NOTE Confidence: 0.780320346355438

00:38:11.686 --> 00:38:13.846 which is really been implicated

NOTE Confidence: 0.780320346355438
00:38:13.846 --> 00:38:16.030 in panic disorder as well.
NOTE Confidence: 0.780320346355438
00:38:16.030 --> 00:38:17.324 OK, so.
NOTE Confidence: 0.780320346355438
00:38:17.324 --> 00:38:20.559 That was quite primitive task,
NOTE Confidence: 0.780320346355438
00:38:20.560 --> 00:38:21.379 very simple task.
NOTE Confidence: 0.780320346355438
00:38:21.379 --> 00:38:23.625 We wanted to see again is that what
NOTE Confidence: 0.780320346355438
00:38:23.625 --> 00:38:25.809 happens if we create a task that seems
NOTE Confidence: 0.780320346355438
00:38:25.809 --> 00:38:27.532 more realistic to the individuals
NOTE Confidence: 0.780320346355438
00:38:27.532 --> 00:38:29.921 where we place a transfer closer or
NOTE Confidence: 0.780320346355438
00:38:29.921 --> 00:38:31.727 further away from the subjects foot.
NOTE Confidence: 0.780320346355438
00:38:31.730 --> 00:38:33.706 So what we did is we put people
NOTE Confidence: 0.780320346355438
00:38:33.706 --> 00:38:36.030 in the MRI scan it and we convince
NOTE Confidence: 0.780320346355438
00:38:36.030 --> 00:38:38.326 them that we move in this transfer
NOTE Confidence: 0.780320346355438
00:38:38.326 --> 00:38:40.438 the closer or further away from
NOTE Confidence: 0.780320346355438
00:38:40.438 --> 00:38:42.284 their foot in this open top box
NOTE Confidence: 0.780320346355438
00:38:42.284 --> 00:38:44.746 here OK is a picture of the actual
NOTE Confidence: 0.780320346355438

00:38:44.746 --> 00:38:46.834 tarantula is a pink salmon bird
NOTE Confidence: 0.780320346355438

00:38:46.904 --> 00:38:48.808 eating tarantula from Brazil.
NOTE Confidence: 0.780320346355438

00:38:48.810 --> 00:38:51.170 And the subjects in the MRI scan and
NOTE Confidence: 0.780320346355438

00:38:51.170 --> 00:38:53.328 they believe in Avaya live video feed.
NOTE Confidence: 0.780320346355438

00:38:53.330 --> 00:38:55.423 They can see me moving this transfer
NOTE Confidence: 0.780320346355438

00:38:55.423 --> 00:38:57.537 closer or further away from their foot.
NOTE Confidence: 0.780320346355438

00:38:57.540 --> 00:38:59.502 Now the good thing about doing
NOTE Confidence: 0.780320346355438

00:38:59.502 --> 00:39:01.495 these types of problems that we
NOTE Confidence: 0.780320346355438

00:39:01.495 --> 00:39:03.040 could decorrelate space and time
NOTE Confidence: 0.780320346355438

00:39:03.040 --> 00:39:04.760 so I would do St Box 5.
NOTE Confidence: 0.780320346355438

00:39:04.760 --> 00:39:06.872 Now go to Box 1, box 3,
NOTE Confidence: 0.780320346355438

00:39:06.872 --> 00:39:08.979 box 4, box 2 and so on.
NOTE Confidence: 0.780320346355438

00:39:08.980 --> 00:39:11.080 So I could decorrelate space and time,
NOTE Confidence: 0.780320346355438

00:39:11.080 --> 00:39:12.754 he couldn't really do that when
NOTE Confidence: 0.780320346355438

00:39:12.754 --> 00:39:14.579 you're being pursued by a threat
NOTE Confidence: 0.780320346355438

00:39:14.579 --> 00:39:15.895 that's actively attacking you.

NOTE Confidence: 0.780320346355438
00:39:15.900 --> 00:39:17.420 It's difficult to separate those
NOTE Confidence: 0.780320346355438
00:39:17.420 --> 00:39:18.940 two components in the task.
NOTE Confidence: 0.780320346355438
00:39:18.940 --> 00:39:21.068 But we could do that day and
NOTE Confidence: 0.780320346355438
00:39:21.068 --> 00:39:22.340 that's what we did.
NOTE Confidence: 0.780320346355438
00:39:22.340 --> 00:39:24.300 So the subjects looking down and they
NOTE Confidence: 0.780320346355438
00:39:24.300 --> 00:39:26.198 can see this translate in either
NOTE Confidence: 0.780320346355438
00:39:26.198 --> 00:39:28.515 closer or further away from their foot.
NOTE Confidence: 0.780320346355438
00:39:28.520 --> 00:39:30.060 In these open top aspects.
NOTE Confidence: 0.780320346355438
00:39:30.060 --> 00:39:31.300 Apart of these boxes,
NOTE Confidence: 0.780320346355438
00:39:31.300 --> 00:39:31.920 we put,
NOTE Confidence: 0.780320346355438
00:39:31.920 --> 00:39:35.048 the curtain is so they can't look down.
NOTE Confidence: 0.780320346355438
00:39:35.050 --> 00:39:37.546 And a lot of people say to me,
NOTE Confidence: 0.780320346355438
00:39:37.550 --> 00:39:39.734 did you get a lot of movement
NOTE Confidence: 0.780320346355438
00:39:39.734 --> 00:39:40.670 during this task?
NOTE Confidence: 0.780320346355438
00:39:40.670 --> 00:39:42.756 You know people will probably scared when
NOTE Confidence: 0.780320346355438

00:39:42.756 --> 00:39:44.739 the transfer was closed there footin.
NOTE Confidence: 0.780320346355438

00:39:44.740 --> 00:39:46.819 I say no because we told them if they
NOTE Confidence: 0.780320346355438

00:39:46.819 --> 00:39:48.651 move their foot they might overtake
NOTE Confidence: 0.780320346355438

00:39:48.651 --> 00:39:50.782 the transfer and it might get upset
NOTE Confidence: 0.780320346355438

00:39:50.782 --> 00:39:52.894 and run up the scanner and point them.
NOTE Confidence: 0.780320346355438

00:39:52.900 --> 00:39:55.320 So we told him to keep still so we didn't
NOTE Confidence: 0.815684199333191

00:39:55.387 --> 00:39:56.911 get too much movement in this
NOTE Confidence: 0.815684199333191

00:39:56.911 --> 00:39:58.880 task is a bit more difficult.
NOTE Confidence: 0.815684199333191

00:39:58.880 --> 00:40:00.240 Control movement in these other
NOTE Confidence: 0.815684199333191

00:40:00.240 --> 00:40:01.878 virtual tasks. Again we call that
NOTE Confidence: 0.815684199333191

00:40:01.878 --> 00:40:03.780 stuff out and request that stuff out.
NOTE Confidence: 0.815684199333191

00:40:03.780 --> 00:40:05.790 It's natural picture of a subject
NOTE Confidence: 0.815684199333191

00:40:05.790 --> 00:40:07.948 in the MRI scan of the box.
NOTE Confidence: 0.815684199333191

00:40:07.950 --> 00:40:09.380 OK, what do we find?
NOTE Confidence: 0.815684199333191

00:40:09.380 --> 00:40:10.675 We reorganized the conditions and
NOTE Confidence: 0.815684199333191

00:40:10.675 --> 00:40:12.597 we want to look here purely and

NOTE Confidence: 0.815684199333191

00:40:12.597 --> 00:40:14.325 parametrically at what happens in the

NOTE Confidence: 0.815684199333191

00:40:14.325 --> 00:40:15.845 brains that transfers place closer

NOTE Confidence: 0.815684199333191

00:40:15.845 --> 00:40:18.041 and closer further to their foot, OK?

NOTE Confidence: 0.815684199333191

00:40:18.041 --> 00:40:20.046 So what do we find?

NOTE Confidence: 0.815684199333191

00:40:20.050 --> 00:40:22.164 We find that the midbrain regions and

NOTE Confidence: 0.815684199333191

00:40:22.164 --> 00:40:24.066 the password or so singular regions

NOTE Confidence: 0.815684199333191

00:40:24.066 --> 00:40:26.257 come online as the threat is placed

NOTE Confidence: 0.815684199333191

00:40:26.318 --> 00:40:28.271 closer and closer the subjects for we

NOTE Confidence: 0.815684199333191

00:40:28.271 --> 00:40:30.350 didn't do I resolution image in there,

NOTE Confidence: 0.815684199333191

00:40:30.350 --> 00:40:32.210 so we couldn't specifically say if

NOTE Confidence: 0.815684199333191

00:40:32.262 --> 00:40:33.936 it was the power conductor grade.

NOTE Confidence: 0.815684199333191

00:40:33.940 --> 00:40:36.054 But when we looked at the peak

NOTE Confidence: 0.815684199333191

00:40:36.054 --> 00:40:36.960 of those voxels,

NOTE Confidence: 0.815684199333191

00:40:36.960 --> 00:40:39.678 it was right there in the power to great.

NOTE Confidence: 0.815684199333191

00:40:39.680 --> 00:40:40.508 But you know,

NOTE Confidence: 0.815684199333191

00:40:40.508 --> 00:40:42.164 we like to side with caution
NOTE Confidence: 0.815684199333191

00:40:42.164 --> 00:40:43.908 when we make these decisions.
NOTE Confidence: 0.815684199333191

00:40:43.910 --> 00:40:46.318 So we generally refer to as the midbrain.
NOTE Confidence: 0.815684199333191

00:40:46.320 --> 00:40:48.138 But again, we're talking about this.
NOTE Confidence: 0.815684199333191

00:40:48.140 --> 00:40:50.860 Switch to the midbrain regions.
NOTE Confidence: 0.815684199333191

00:40:50.860 --> 00:40:53.800 What happens when the when the tranches
NOTE Confidence: 0.815684199333191

00:40:53.800 --> 00:40:56.607 move further away from the foot we
NOTE Confidence: 0.815684199333191

00:40:56.607 --> 00:40:58.815 found a different set of regions,
NOTE Confidence: 0.815684199333191

00:40:58.820 --> 00:41:00.720 particularly in the automated
NOTE Confidence: 0.815684199333191

00:41:00.720 --> 00:41:02.620 prefrontal region and we.
NOTE Confidence: 0.815684199333191

00:41:02.620 --> 00:41:05.260 Proposed at the time that this may be
NOTE Confidence: 0.815684199333191

00:41:05.260 --> 00:41:07.705 related to some form of safety signal
NOTE Confidence: 0.815684199333191

00:41:07.705 --> 00:41:10.354 that when the threat is being placed
NOTE Confidence: 0.815684199333191

00:41:10.354 --> 00:41:13.350 further away from there for their feelings,
NOTE Confidence: 0.815684199333191

00:41:13.350 --> 00:41:15.583 feeling safer and safer and we follow
NOTE Confidence: 0.815684199333191

00:41:15.583 --> 00:41:17.905 this up now with three experiments

NOTE Confidence: 0.815684199333191
00:41:17.905 --> 00:41:20.055 and theoretical paper that we're
NOTE Confidence: 0.815684199333191
00:41:20.055 --> 00:41:22.229 just about to submit to ticks.
NOTE Confidence: 0.815684199333191
00:41:22.230 --> 00:41:25.390 And a meta analysis in there that shows
NOTE Confidence: 0.815684199333191
00:41:25.390 --> 00:41:28.679 that when we look at this region across,
NOTE Confidence: 0.815684199333191
00:41:28.680 --> 00:41:31.720 I think now about 15 studies are purely
NOTE Confidence: 0.815684199333191
00:41:31.720 --> 00:41:34.317 safety signals or safety type paradigms,
NOTE Confidence: 0.815684199333191
00:41:34.320 --> 00:41:37.224 that this region seems to be the core
NOTE Confidence: 0.815684199333191
00:41:37.224 --> 00:41:39.960 region in the perception of safety.
NOTE Confidence: 0.815684199333191
00:41:39.960 --> 00:41:43.072 OK, what we also find this very interesting
NOTE Confidence: 0.815684199333191
00:41:43.072 --> 00:41:45.199 different from our previous study,
NOTE Confidence: 0.815684199333191
00:41:45.200 --> 00:41:45.846 is that.
NOTE Confidence: 0.815684199333191
00:41:45.846 --> 00:41:47.784 Or similar to our previous study,
NOTE Confidence: 0.815684199333191
00:41:47.790 --> 00:41:48.356 the Packmaster.
NOTE Confidence: 0.815684199333191
00:41:48.356 --> 00:41:50.337 She says that what we find is
NOTE Confidence: 0.815684199333191
00:41:50.337 --> 00:41:52.148 that when it's a danger signal,
NOTE Confidence: 0.815684199333191

00:41:52.150 --> 00:41:53.210 when the sweats distant,
NOTE Confidence: 0.815684199333191

00:41:53.210 --> 00:41:55.640 but it's it's more of a danger signal,
NOTE Confidence: 0.815684199333191

00:41:55.640 --> 00:41:57.488 we see increased activity in the
NOTE Confidence: 0.815684199333191

00:41:57.488 --> 00:41:59.024 posterior pass ultimate pre funded
NOTE Confidence: 0.815684199333191

00:41:59.024 --> 00:42:00.781 courses and I'm going to show you
NOTE Confidence: 0.815684199333191

00:42:00.781 --> 00:42:02.552 our last experiment that shows this
NOTE Confidence: 0.815684199333191

00:42:02.552 --> 00:42:04.370 distinction on the task we refer
NOTE Confidence: 0.815684199333191

00:42:04.370 --> 00:42:06.407 to as a margin of safety task.
NOTE Confidence: 0.865671455860138

00:42:09.060 --> 00:42:10.804 We want to also look at what happens
NOTE Confidence: 0.865671455860138

00:42:10.804 --> 00:42:12.911 in the brain when the individuals and
NOTE Confidence: 0.865671455860138

00:42:12.911 --> 00:42:14.840 monitoring over longer periods of time,
NOTE Confidence: 0.865671455860138

00:42:14.840 --> 00:42:16.210 the movements of the threat.
NOTE Confidence: 0.865671455860138

00:42:16.210 --> 00:42:18.762 OK, so I'm gonna give you a simple
NOTE Confidence: 0.865671455860138

00:42:18.762 --> 00:42:20.924 example of what we did is we
NOTE Confidence: 0.865671455860138

00:42:20.924 --> 00:42:22.880 look for example just a box 3.
NOTE Confidence: 0.865671455860138

00:42:22.880 --> 00:42:24.896 That is more complex than this,

NOTE Confidence: 0.865671455860138
00:42:24.900 --> 00:42:26.910 but we looked at Box 3.
NOTE Confidence: 0.865671455860138
00:42:26.910 --> 00:42:28.926 What we was interested in is,
NOTE Confidence: 0.865671455860138
00:42:28.930 --> 00:42:30.610 is the threat moving from
NOTE Confidence: 0.865671455860138
00:42:30.610 --> 00:42:31.618 a previous position,
NOTE Confidence: 0.865671455860138
00:42:31.620 --> 00:42:34.635 say of Box 5 year or box 4 OK?
NOTE Confidence: 0.865671455860138
00:42:34.640 --> 00:42:37.090 Or is it moving from box 1
NOTE Confidence: 0.865671455860138
00:42:37.090 --> 00:42:39.340 or box 2 to 2 box 3?
NOTE Confidence: 0.865671455860138
00:42:39.340 --> 00:42:41.769 So if it's moving from keeping the
NOTE Confidence: 0.865671455860138
00:42:41.769 --> 00:42:43.040 spatial position identical OK,
NOTE Confidence: 0.865671455860138
00:42:43.040 --> 00:42:45.224 we just look into the history of
NOTE Confidence: 0.865671455860138
00:42:45.224 --> 00:42:47.298 the movements of the spine and
NOTE Confidence: 0.865671455860138
00:42:47.298 --> 00:42:49.088 how they impact their decision.
NOTE Confidence: 0.865671455860138
00:42:49.090 --> 00:42:51.435 OK, or their perception of the threshers.
NOTE Confidence: 0.865671455860138
00:42:51.440 --> 00:42:53.790 There's no decisions in this.
NOTE Confidence: 0.865671455860138
00:42:53.790 --> 00:42:55.878 And what we proposed is that
NOTE Confidence: 0.865671455860138

00:42:55.878 --> 00:42:57.644 this long term monitoring of
NOTE Confidence: 0.865671455860138

00:42:57.644 --> 00:42:59.468 the threat as it's ramping up,
NOTE Confidence: 0.865671455860138

00:42:59.470 --> 00:43:01.135 it's it's movements to become
NOTE Confidence: 0.865671455860138

00:43:01.135 --> 00:43:02.467 close to the subject.
NOTE Confidence: 0.865671455860138

00:43:02.470 --> 00:43:03.810 This should activate more
NOTE Confidence: 0.865671455860138

00:43:03.810 --> 00:43:05.150 of these anxiety circuits,
NOTE Confidence: 0.865671455860138

00:43:05.150 --> 00:43:06.820 particularly regions of the bed.
NOTE Confidence: 0.865671455860138

00:43:06.820 --> 00:43:08.152 Next right term analysis.
NOTE Confidence: 0.865671455860138

00:43:08.152 --> 00:43:09.484 Exactly what we found.
NOTE Confidence: 0.865671455860138

00:43:09.490 --> 00:43:11.828 We found that for this comparison here,
NOTE Confidence: 0.865671455860138

00:43:11.830 --> 00:43:13.798 we just subtracted as it's moving
NOTE Confidence: 0.865671455860138

00:43:13.798 --> 00:43:15.500 closer versus moving away again,
NOTE Confidence: 0.865671455860138

00:43:15.500 --> 00:43:17.498 keeping the spatial position the same.
NOTE Confidence: 0.865671455860138

00:43:17.500 --> 00:43:19.522 We found that the bed extra
NOTE Confidence: 0.865671455860138

00:43:19.522 --> 00:43:20.870 term analysis was increasingly
NOTE Confidence: 0.865671455860138

00:43:20.931 --> 00:43:22.845 active for this type of response.

NOTE Confidence: 0.865671455860138
00:43:22.850 --> 00:43:24.044 Therefore we proposed.
NOTE Confidence: 0.865671455860138
00:43:24.044 --> 00:43:25.238 Associated with increased,
NOTE Confidence: 0.865671455860138
00:43:25.240 --> 00:43:26.804 sustained and increased vigilance
NOTE Confidence: 0.865671455860138
00:43:26.804 --> 00:43:27.977 of that threat.
NOTE Confidence: 0.865671455860138
00:43:27.980 --> 00:43:31.316 OK over longer periods of time.
NOTE Confidence: 0.865671455860138
00:43:31.320 --> 00:43:34.736 So what we are shown in this again,
NOTE Confidence: 0.865671455860138
00:43:34.740 --> 00:43:36.890 this is building our model.
NOTE Confidence: 0.865671455860138
00:43:36.890 --> 00:43:38.930 Dimension of space and Time Model
NOTE Confidence: 0.865671455860138
00:43:38.930 --> 00:43:41.918 affair is that space and time to throw
NOTE Confidence: 0.865671455860138
00:43:41.918 --> 00:43:43.873 out determine the defensive responses.
NOTE Confidence: 0.865671455860138
00:43:43.880 --> 00:43:46.848 OK on the brain regions associated with that.
NOTE Confidence: 0.865671455860138
00:43:46.850 --> 00:43:48.258 History of the threats,
NOTE Confidence: 0.865671455860138
00:43:48.258 --> 00:43:48.610 movements,
NOTE Confidence: 0.865671455860138
00:43:48.610 --> 00:43:50.195 and proximity will activate regions
NOTE Confidence: 0.865671455860138
00:43:50.195 --> 00:43:52.526 such as the bad News Journal Terminal
NOTE Confidence: 0.865671455860138

00:43:52.526 --> 00:43:54.226 and talk about his predictions
NOTE Confidence: 0.865671455860138

00:43:54.226 --> 00:43:56.330 that we call expectancy errors.
NOTE Confidence: 0.865671455860138

00:43:56.330 --> 00:43:56.656 OK,
NOTE Confidence: 0.865671455860138

00:43:56.656 --> 00:43:58.286 we found that when individuals
NOTE Confidence: 0.865671455860138

00:43:58.286 --> 00:44:00.401 rated the spiders being more scarier
NOTE Confidence: 0.865671455860138

00:44:00.401 --> 00:44:02.286 than what they originally thought,
NOTE Confidence: 0.865671455860138

00:44:02.290 --> 00:44:03.698 that activated the amygdala.
NOTE Confidence: 0.865671455860138

00:44:03.698 --> 00:44:04.050 OK,
NOTE Confidence: 0.865671455860138

00:44:04.050 --> 00:44:06.546 supporting this idea that the the
NOTE Confidence: 0.865671455860138

00:44:06.546 --> 00:44:09.137 amygdala may be associated with the
NOTE Confidence: 0.865671455860138

00:44:09.137 --> 00:44:11.687 detection of threats in the environment.
NOTE Confidence: 0.865671455860138

00:44:11.690 --> 00:44:14.994 So and also things like surprise as well.
NOTE Confidence: 0.865671455860138

00:44:15.000 --> 00:44:17.121 And these are all going on at
NOTE Confidence: 0.865671455860138

00:44:17.121 --> 00:44:18.540 a different temple levels,
NOTE Confidence: 0.865671455860138

00:44:18.540 --> 00:44:22.806 but they were going on at the same time.
NOTE Confidence: 0.865671455860138

00:44:22.810 --> 00:44:27.730 But you could argue here that that the.

NOTE Confidence: 0.865671455860138
00:44:27.730 --> 00:44:28.566 The.
NOTE Confidence: 0.865671455860138
00:44:28.566 --> 00:44:31.910 These studies don't really
NOTE Confidence: 0.865671455860138
00:44:31.910 --> 00:44:35.254 explicitly measure decisions OK.
NOTE Confidence: 0.865671455860138
00:44:35.260 --> 00:44:37.381 So we went back to the ecology
NOTE Confidence: 0.865671455860138
00:44:37.381 --> 00:44:39.138 literature were very much influenced
NOTE Confidence: 0.865671455860138
00:44:39.138 --> 00:44:41.490 by this quite famous theoretical paper
NOTE Confidence: 0.865671455860138
00:44:41.490 --> 00:44:43.792 here called the economics of fleeing
NOTE Confidence: 0.865671455860138
00:44:43.792 --> 00:44:45.970 from Predators by Edenburg and deal.
NOTE Confidence: 0.865671455860138
00:44:45.970 --> 00:44:47.760 And this was a paper.
NOTE Confidence: 0.865671455860138
00:44:47.760 --> 00:44:49.540 It wasn't the 1st paper,
NOTE Confidence: 0.865671455860138
00:44:49.540 --> 00:44:51.844 it was a paper that really made the
NOTE Confidence: 0.865671455860138
00:44:51.844 --> 00:44:53.741 concept of flight initiation distance
NOTE Confidence: 0.865671455860138
00:44:53.741 --> 00:44:56.674 famous in the field of behavior ecology.
NOTE Confidence: 0.865671455860138
00:44:56.680 --> 00:44:58.470 What is flow initiation distance?
NOTE Confidence: 0.865671455860138
00:44:58.470 --> 00:45:00.570 Is the distance at which prey will
NOTE Confidence: 0.865671455860138

00:45:00.570 --> 00:45:02.750 flee from an approaching threat.
NOTE Confidence: 0.865671455860138

00:45:02.750 --> 00:45:03.120 OK,
NOTE Confidence: 0.865671455860138

00:45:03.120 --> 00:45:04.970 so is your decision variable
NOTE Confidence: 0.865671455860138

00:45:04.970 --> 00:45:06.710 the economic component to it?
NOTE Confidence: 0.865671455860138

00:45:06.710 --> 00:45:08.747 Is related to Audi flee from a
NOTE Confidence: 0.865671455860138

00:45:08.747 --> 00:45:10.095 threat when you're performing
NOTE Confidence: 0.865671455860138

00:45:10.095 --> 00:45:11.735 other survival behaviors and
NOTE Confidence: 0.865671455860138

00:45:11.735 --> 00:45:13.785 this very much captured here.
NOTE Confidence: 0.815084517002106

00:45:13.790 --> 00:45:15.908 So as an example of fluctuation,
NOTE Confidence: 0.815084517002106

00:45:15.910 --> 00:45:18.430 distance to zebra is keeping its distance
NOTE Confidence: 0.815084517002106

00:45:18.430 --> 00:45:21.217 from the predator and the distance to safety.
NOTE Confidence: 0.815084517002106

00:45:21.220 --> 00:45:23.260 OK, now if the predator begins
NOTE Confidence: 0.815084517002106

00:45:23.260 --> 00:45:25.469 to move closer to our prayer,
NOTE Confidence: 0.815084517002106

00:45:25.470 --> 00:45:28.294 there will be a certain point where the
NOTE Confidence: 0.815084517002106

00:45:28.294 --> 00:45:30.734 danger threshold is breached and the prey
NOTE Confidence: 0.815084517002106

00:45:30.734 --> 00:45:32.910 will flee towards its safety refuge.

NOTE Confidence: 0.815084517002106
00:45:32.910 --> 00:45:35.374 OK, there's many different models of this.
NOTE Confidence: 0.815084517002106
00:45:35.380 --> 00:45:37.928 I'm giving you the simple one here.
NOTE Confidence: 0.815084517002106
00:45:37.930 --> 00:45:40.463 When it makes these decisions, there's.
NOTE Confidence: 0.815084517002106
00:45:40.463 --> 00:45:43.367 A cost of not fleeing if it doesn't
NOTE Confidence: 0.815084517002106
00:45:43.367 --> 00:45:45.668 flee is eaten by the predator,
NOTE Confidence: 0.815084517002106
00:45:45.670 --> 00:45:48.008 but there's also this is the economic
NOTE Confidence: 0.815084517002106
00:45:48.008 --> 00:45:50.566 component to the task or cost of fleeing.
NOTE Confidence: 0.815084517002106
00:45:50.570 --> 00:45:52.859 OK, so what's as every doing here?
NOTE Confidence: 0.815084517002106
00:45:52.860 --> 00:45:54.435 Well, maybe it's doing some
NOTE Confidence: 0.815084517002106
00:45:54.435 --> 00:45:56.460 other server will be a dream.
NOTE Confidence: 0.815084517002106
00:45:56.460 --> 00:45:58.090 Maybe it's trying to mate.
NOTE Confidence: 0.815084517002106
00:45:58.090 --> 00:46:00.740 Maybe it's feeding OK, so.
NOTE Confidence: 0.815084517002106
00:46:00.740 --> 00:46:02.744 It's not going to run every
NOTE Confidence: 0.815084517002106
00:46:02.744 --> 00:46:04.560 time it sees a lion.
NOTE Confidence: 0.815084517002106
00:46:04.560 --> 00:46:07.288 OK, in the environment it just to get
NOTE Confidence: 0.815084517002106

00:46:07.288 --> 00:46:10.105 to certain point where it feels that OK.
NOTE Confidence: 0.815084517002106

00:46:10.110 --> 00:46:12.558 I need to give up this once if I
NOTE Confidence: 0.815084517002106

00:46:12.558 --> 00:46:15.484 will be able to be eating to protect
NOTE Confidence: 0.815084517002106

00:46:15.484 --> 00:46:17.400 myself against the predators.
NOTE Confidence: 0.815084517002106

00:46:17.400 --> 00:46:19.130 And depending on the internal
NOTE Confidence: 0.815084517002106

00:46:19.130 --> 00:46:21.558 states of the zebra, is it hungry?
NOTE Confidence: 0.815084517002106

00:46:21.558 --> 00:46:22.596 Thirsty for example,
NOTE Confidence: 0.815084517002106

00:46:22.600 --> 00:46:25.376 how far away is it from the refuge?
NOTE Confidence: 0.815084517002106

00:46:25.380 --> 00:46:27.110 How fast is the predator?
NOTE Confidence: 0.815084517002106

00:46:27.110 --> 00:46:29.694 There will be an optimal point which we
NOTE Confidence: 0.815084517002106

00:46:29.694 --> 00:46:31.990 called East area that will determine.
NOTE Confidence: 0.815084517002106

00:46:31.990 --> 00:46:34.482 The the time at which the prey
NOTE Confidence: 0.815084517002106

00:46:34.482 --> 00:46:36.669 will flee from the predator.
NOTE Confidence: 0.815084517002106

00:46:36.670 --> 00:46:38.990 So the backdrop to this is what we
NOTE Confidence: 0.815084517002106

00:46:38.990 --> 00:46:40.848 propose is that this will allow
NOTE Confidence: 0.815084517002106

00:46:40.848 --> 00:46:43.440 us to still each two stops of fear

NOTE Confidence: 0.815084517002106
00:46:43.440 --> 00:46:44.856 that I mentioned earlier,
NOTE Confidence: 0.815084517002106
00:46:44.860 --> 00:46:47.695 the first of what we refer to as reactive.
NOTE Confidence: 0.815084517002106
00:46:47.700 --> 00:46:49.898 Here we refer to this or define.
NOTE Confidence: 0.815084517002106
00:46:49.900 --> 00:46:51.480 This is a quick phrase.
NOTE Confidence: 0.815084517002106
00:46:51.480 --> 00:46:53.115 It coordinated reaction in response
NOTE Confidence: 0.815084517002106
00:46:53.115 --> 00:46:55.386 to an imminent threat that is or
NOTE Confidence: 0.815084517002106
00:46:55.386 --> 00:46:56.836 proceed to be directed towards
NOTE Confidence: 0.815084517002106
00:46:56.836 --> 00:46:58.710 Organism and where there is little
NOTE Confidence: 0.815084517002106
00:46:58.710 --> 00:46:59.974 time to cognitively comprehend
NOTE Confidence: 0.815084517002106
00:46:59.974 --> 00:47:01.510 the danger of the situation,
NOTE Confidence: 0.815084517002106
00:47:01.510 --> 00:47:03.250 this reactive fear is about trying
NOTE Confidence: 0.815084517002106
00:47:03.250 --> 00:47:05.019 to optimize your defensive response.
NOTE Confidence: 0.815084517002106
00:47:05.020 --> 00:47:07.316 Do I freeze or do I flee?
NOTE Confidence: 0.815084517002106
00:47:07.320 --> 00:47:08.196 For example, OK,
NOTE Confidence: 0.815084517002106
00:47:08.196 --> 00:47:10.240 you've got that time to do that.
NOTE Confidence: 0.815084517002106

00:47:10.240 --> 00:47:12.228 This is different from panic and panic
NOTE Confidence: 0.815084517002106

00:47:12.228 --> 00:47:14.616 is the next level up in some respects,
NOTE Confidence: 0.815084517002106

00:47:14.620 --> 00:47:16.372 but you don't have time to
NOTE Confidence: 0.815084517002106

00:47:16.372 --> 00:47:17.248 make those decisions.
NOTE Confidence: 0.815084517002106

00:47:17.250 --> 00:47:18.846 Now those decisions are not going
NOTE Confidence: 0.815084517002106

00:47:18.846 --> 00:47:20.460 to be more conscious decisions.
NOTE Confidence: 0.815084517002106

00:47:20.460 --> 00:47:22.584 They're going to be more over
NOTE Confidence: 0.815084517002106

00:47:22.584 --> 00:47:24.690 reflexive Nate type of decision.
NOTE Confidence: 0.815084517002106

00:47:24.690 --> 00:47:26.797 Cognitive fell on the other hand is
NOTE Confidence: 0.815084517002106

00:47:26.797 --> 00:47:29.267 where we begin to particular focused on,
NOTE Confidence: 0.815084517002106

00:47:29.270 --> 00:47:31.370 you must say is there's a conscious
NOTE Confidence: 0.815084517002106

00:47:31.370 --> 00:47:33.212 feeling of terror which results from
NOTE Confidence: 0.815084517002106

00:47:33.212 --> 00:47:35.270 the presence of threat that is or
NOTE Confidence: 0.815084517002106

00:47:35.333 --> 00:47:37.769 perceived to be directed towards organisms,
NOTE Confidence: 0.815084517002106

00:47:37.770 --> 00:47:39.938 and where there is not any time to
NOTE Confidence: 0.815084517002106

00:47:39.938 --> 00:47:42.424 strategy or just keep it also comprehend

NOTE Confidence: 0.815084517002106
00:47:42.424 --> 00:47:44.309 forbidding nature of the situation.
NOTE Confidence: 0.815084517002106
00:47:44.310 --> 00:47:46.599 OK, now now the threat is attacking,
NOTE Confidence: 0.815084517002106
00:47:46.600 --> 00:47:48.644 but it's distant so you can begin
NOTE Confidence: 0.815084517002106
00:47:48.644 --> 00:47:50.511 to say to yourself, OK?
NOTE Confidence: 0.815084517002106
00:47:50.511 --> 00:47:51.444 Feeling very good,
NOTE Confidence: 0.815084517002106
00:47:51.444 --> 00:47:53.310 this makes me feel terrible or
NOTE Confidence: 0.815084517002106
00:47:53.373 --> 00:47:55.368 getting butterflies in my stomach,
NOTE Confidence: 0.815084517002106
00:47:55.370 --> 00:47:57.290 but also account that's the better
NOTE Confidence: 0.815084517002106
00:47:57.290 --> 00:47:59.470 direction to flee than that direction.
NOTE Confidence: 0.815084517002106
00:47:59.470 --> 00:48:02.698 OK, you can strategize.
NOTE Confidence: 0.815084517002106
00:48:02.700 --> 00:48:05.031 So we create a very simple task
NOTE Confidence: 0.815084517002106
00:48:05.031 --> 00:48:06.030 where and this
NOTE Confidence: 0.80804967880249
00:48:06.112 --> 00:48:08.345 is the song to my former grad
NOTE Confidence: 0.80804967880249
00:48:08.345 --> 00:48:10.828 student is now at NIH as a postdoc,
NOTE Confidence: 0.80804967880249
00:48:10.830 --> 00:48:12.780 and we create is very simple
NOTE Confidence: 0.80804967880249

00:48:12.780 --> 00:48:14.080 sort of platform here.
NOTE Confidence: 0.80804967880249

00:48:14.080 --> 00:48:16.690 OK, what we have is two types of predators
NOTE Confidence: 0.80804967880249

00:48:16.690 --> 00:48:18.948 and early attack and later attack,
NOTE Confidence: 0.80804967880249

00:48:18.950 --> 00:48:21.198 which allows us to look at fast and
NOTE Confidence: 0.80804967880249

00:48:21.198 --> 00:48:23.271 slow escaped decisions so the subject
NOTE Confidence: 0.80804967880249

00:48:23.271 --> 00:48:25.449 controls this triangle just there OK.
NOTE Confidence: 0.80804967880249

00:48:25.450 --> 00:48:27.436 And the longer this subject allows
NOTE Confidence: 0.80804967880249

00:48:27.436 --> 00:48:29.680 that triangle to be in a position,
NOTE Confidence: 0.80804967880249

00:48:29.680 --> 00:48:31.300 the more money they run.
NOTE Confidence: 0.80804967880249

00:48:31.300 --> 00:48:33.000 This is the economic component.
NOTE Confidence: 0.80804967880249

00:48:33.000 --> 00:48:33.717 Of the escapes,
NOTE Confidence: 0.80804967880249

00:48:33.717 --> 00:48:36.189 the goal is subject is to flee from these
NOTE Confidence: 0.80804967880249

00:48:36.189 --> 00:48:38.044 virtual predators without being caught,
NOTE Confidence: 0.80804967880249

00:48:38.050 --> 00:48:40.318 but also trying to maximize the amount
NOTE Confidence: 0.80804967880249

00:48:40.318 --> 00:48:42.496 of money that they earned more there
NOTE Confidence: 0.80804967880249

00:48:42.496 --> 00:48:45.082 and what they can do is just press a

NOTE Confidence: 0.80804967880249
00:48:45.082 --> 00:48:47.256 burn to escape to this exit at anytime,
NOTE Confidence: 0.80804967880249
00:48:47.256 --> 00:48:49.624 and it always flees at the same speed.
NOTE Confidence: 0.80804967880249
00:48:49.630 --> 00:48:52.997 We keep this first version very simple.
NOTE Confidence: 0.80804967880249
00:48:53.000 --> 00:48:54.608 There's two different types of predators.
NOTE Confidence: 0.80804967880249
00:48:54.610 --> 00:48:56.242 OK, as I mentioned that one
NOTE Confidence: 0.80804967880249
00:48:56.242 --> 00:48:57.819 that will attack early is here,
NOTE Confidence: 0.80804967880249
00:48:57.820 --> 00:48:59.428 and the one that were attacked
NOTE Confidence: 0.80804967880249
00:48:59.428 --> 00:49:00.500 late will be here,
NOTE Confidence: 0.80804967880249
00:49:00.500 --> 00:49:02.644 the red one and then always start here.
NOTE Confidence: 0.80804967880249
00:49:02.650 --> 00:49:04.258 They will oscillate towards the subject.
NOTE Confidence: 0.80804967880249
00:49:04.260 --> 00:49:05.600 They'll go back and forth,
NOTE Confidence: 0.80804967880249
00:49:05.600 --> 00:49:07.469 will always do this sort of oscillation,
NOTE Confidence: 0.80804967880249
00:49:07.470 --> 00:49:11.220 you know, I used to be a boxer years ago and.
NOTE Confidence: 0.80804967880249
00:49:11.220 --> 00:49:12.888 The thing you do in boxing
NOTE Confidence: 0.80804967880249
00:49:12.888 --> 00:49:14.340 is you faint a lot,
NOTE Confidence: 0.80804967880249

00:49:14.340 --> 00:49:16.328 so you pretend you're going to punch.
NOTE Confidence: 0.80804967880249

00:49:16.330 --> 00:49:18.922 So we thought we just keep the subject on
NOTE Confidence: 0.80804967880249

00:49:18.922 --> 00:49:21.729 edge by trying to do a lot of this fainting.
NOTE Confidence: 0.80804967880249

00:49:21.730 --> 00:49:21.974 OK,
NOTE Confidence: 0.80804967880249

00:49:21.974 --> 00:49:23.682 so the subject so that is moving
NOTE Confidence: 0.80804967880249

00:49:23.682 --> 00:49:25.423 towards a service they always start
NOTE Confidence: 0.80804967880249

00:49:25.423 --> 00:49:27.690 here and they move towards the subject.
NOTE Confidence: 0.80804967880249

00:49:27.690 --> 00:49:30.183 Now this blue one will attack at some point
NOTE Confidence: 0.80804967880249

00:49:30.183 --> 00:49:32.236 within this Gaussian and the red ones.
NOTE Confidence: 0.80804967880249

00:49:32.240 --> 00:49:33.660 Some point in this Gaussian,
NOTE Confidence: 0.80804967880249

00:49:33.660 --> 00:49:33.906 OK.
NOTE Confidence: 0.80804967880249

00:49:33.906 --> 00:49:36.120 We didn't want it to always be the same
NOTE Confidence: 0.80804967880249

00:49:36.177 --> 00:49:38.373 position because the subject will quickly
NOTE Confidence: 0.80804967880249

00:49:38.373 --> 00:49:40.555 always going to attack and they'll
NOTE Confidence: 0.80804967880249

00:49:40.555 --> 00:49:42.865 be optimum very optimal in their escape.
NOTE Confidence: 0.80804967880249

00:49:42.870 --> 00:49:44.628 You wanted some element of uncertainty,

NOTE Confidence: 0.80804967880249

00:49:44.630 --> 00:49:46.576 but we kept them as a normal

NOTE Confidence: 0.80804967880249

00:49:46.576 --> 00:49:48.079 distribution and or Gaussian so

NOTE Confidence: 0.80804967880249

00:49:48.079 --> 00:49:50.200 they could get better at this task,

NOTE Confidence: 0.80804967880249

00:49:50.200 --> 00:49:50.525 OK?

NOTE Confidence: 0.80804967880249

00:49:50.525 --> 00:49:53.125 We will see what we do is reverse.

NOTE Confidence: 0.80804967880249

00:49:53.130 --> 00:49:54.280 Thereafter trials they would be.

NOTE Confidence: 0.80804967880249

00:49:54.280 --> 00:49:56.096 The exit would be this side and they

NOTE Confidence: 0.80804967880249

00:49:56.096 --> 00:49:57.782 would start out after Charles it would

NOTE Confidence: 0.80804967880249

00:49:57.782 --> 00:49:59.657 switch and that made it a bit more

NOTE Confidence: 0.80804967880249

00:49:59.657 --> 00:50:01.148 difficult for them to to learn it.

NOTE Confidence: 0.821882367134094

00:50:03.440 --> 00:50:05.309 If they are caught by the virtual

NOTE Confidence: 0.821882367134094

00:50:05.309 --> 00:50:06.966 predator air, they will receive the

NOTE Confidence: 0.821882367134094

00:50:06.966 --> 00:50:08.944 lectric shock and they will lose any

NOTE Confidence: 0.821882367134094

00:50:08.944 --> 00:50:12.550 money they are in that round, OK?

NOTE Confidence: 0.821882367134094

00:50:12.550 --> 00:50:14.706 So we had all the various control

NOTE Confidence: 0.821882367134094

00:50:14.706 --> 00:50:16.639 conditions to control for any time
NOTE Confidence: 0.821882367134094

00:50:16.639 --> 00:50:18.214 and confounds in the experiment,
NOTE Confidence: 0.821882367134094

00:50:18.220 --> 00:50:20.044 which are the first 3 bars
NOTE Confidence: 0.821882367134094

00:50:20.044 --> 00:50:21.690 that you can see here.
NOTE Confidence: 0.821882367134094

00:50:21.690 --> 00:50:23.550 OK across all of the different
NOTE Confidence: 0.821882367134094

00:50:23.550 --> 00:50:25.469 conditions and what this shows here.
NOTE Confidence: 0.821882367134094

00:50:25.470 --> 00:50:28.550 These blobs in the brain Air Show is.
NOTE Confidence: 0.821882367134094

00:50:28.550 --> 00:50:30.430 When they made their decision,
NOTE Confidence: 0.821882367134094

00:50:30.430 --> 00:50:32.970 the two seconds before they
NOTE Confidence: 0.821882367134094

00:50:32.970 --> 00:50:34.494 made their decision.
NOTE Confidence: 0.821882367134094

00:50:34.500 --> 00:50:36.756 To escape from the approaching threat,
NOTE Confidence: 0.821882367134094

00:50:36.760 --> 00:50:39.016 and this is when it was
NOTE Confidence: 0.821882367134094

00:50:39.016 --> 00:50:40.520 the fast attacking threat.
NOTE Confidence: 0.821882367134094

00:50:40.520 --> 00:50:43.440 OK, and what you're seeing is that when
NOTE Confidence: 0.821882367134094

00:50:43.440 --> 00:50:45.762 they're making it fast decision to
NOTE Confidence: 0.821882367134094

00:50:45.762 --> 00:50:48.036 the quick or early attacking threat,

NOTE Confidence: 0.821882367134094

00:50:48.040 --> 00:50:50.595 you see this increased activity in the

NOTE Confidence: 0.821882367134094

00:50:50.595 --> 00:50:52.527 midbrain encompassed in Parker, Dr.

NOTE Confidence: 0.821882367134094

00:50:52.527 --> 00:50:54.669 Gray and the mid singular cortex

NOTE Confidence: 0.821882367134094

00:50:54.669 --> 00:50:56.996 which we know already connected to

NOTE Confidence: 0.821882367134094

00:50:56.996 --> 00:50:59.747 each of these two regions as well.

NOTE Confidence: 0.821882367134094

00:50:59.750 --> 00:51:00.120 Again,

NOTE Confidence: 0.821882367134094

00:51:00.120 --> 00:51:01.970 so mentioned pages associated with

NOTE Confidence: 0.821882367134094

00:51:01.970 --> 00:51:03.787 these flight escape responses may

NOTE Confidence: 0.821882367134094

00:51:03.787 --> 00:51:05.167 be more complex motor processes

NOTE Confidence: 0.821882367134094

00:51:05.167 --> 00:51:07.009 going on there in the singular,

NOTE Confidence: 0.821882367134094

00:51:07.010 --> 00:51:09.584 and we do find that when we apply a

NOTE Confidence: 0.821882367134094

00:51:09.584 --> 00:51:11.956 Bayesian decision model here to optimal,

NOTE Confidence: 0.821882367134094

00:51:11.960 --> 00:51:13.916 they're joined their task.

NOTE Confidence: 0.821882367134094

00:51:13.916 --> 00:51:17.519 Also was probably the right word to use,

NOTE Confidence: 0.821882367134094

00:51:17.520 --> 00:51:20.530 but what we find is that there's.

NOTE Confidence: 0.821882367134094

00:51:20.530 --> 00:51:22.364 Correlates with activity in the in the
NOTE Confidence: 0.821882367134094

00:51:22.364 --> 00:51:24.387 mid singular but not the paradoxical Gray,
NOTE Confidence: 0.821882367134094

00:51:24.390 --> 00:51:26.147 so this may be important in driving
NOTE Confidence: 0.821882367134094

00:51:26.147 --> 00:51:27.709 their their decision making processes,
NOTE Confidence: 0.821882367134094

00:51:27.710 --> 00:51:29.684 and we can see across all the
NOTE Confidence: 0.821882367134094

00:51:29.684 --> 00:51:30.850 different conditions will start
NOTE Confidence: 0.821882367134094

00:51:30.850 --> 00:51:32.446 in mid attacking threat which I'm
NOTE Confidence: 0.821882367134094

00:51:32.446 --> 00:51:34.328 not going to talk about this one.
NOTE Confidence: 0.821882367134094

00:51:34.330 --> 00:51:35.710 Keep the story bit simpler,
NOTE Confidence: 0.821882367134094

00:51:35.710 --> 00:51:37.854 but what we can see is the blue
NOTE Confidence: 0.821882367134094

00:51:37.854 --> 00:51:39.568 increased activity in these two regions,
NOTE Confidence: 0.821882367134094

00:51:39.570 --> 00:51:41.778 but in the red one it's a slow
NOTE Confidence: 0.821882367134094

00:51:41.778 --> 00:51:42.330 attacking threat.
NOTE Confidence: 0.821882367134094

00:51:42.330 --> 00:51:44.269 We don't see these regions come online.
NOTE Confidence: 0.821882367134094

00:51:44.270 --> 00:51:45.330 I think about this.
NOTE Confidence: 0.821882367134094

00:51:45.330 --> 00:51:46.920 The context of previous study that

NOTE Confidence: 0.821882367134094

00:51:46.969 --> 00:51:49.049 I've shown you where we just look at

NOTE Confidence: 0.821882367134094

00:51:49.049 --> 00:51:50.921 special temporal distance, it seems to.

NOTE Confidence: 0.821882367134094

00:51:50.921 --> 00:51:52.069 To to mirror that.

NOTE Confidence: 0.821882367134094

00:51:52.070 --> 00:51:52.678 But yeah,

NOTE Confidence: 0.821882367134094

00:51:52.678 --> 00:51:54.806 of course we're looking more at sort

NOTE Confidence: 0.821882367134094

00:51:54.806 --> 00:51:57.040 of temporal distance and spatial.

NOTE Confidence: 0.821882367134094

00:51:57.040 --> 00:52:00.652 When we're looking at the slow

NOTE Confidence: 0.821882367134094

00:52:00.652 --> 00:52:01.856 attacking threat,

NOTE Confidence: 0.821882367134094

00:52:01.860 --> 00:52:04.880 we find a different profile.

NOTE Confidence: 0.821882367134094

00:52:04.880 --> 00:52:06.312 You find that the.

NOTE Confidence: 0.821882367134094

00:52:06.312 --> 00:52:08.460 Parts of the prefrontal cortex and

NOTE Confidence: 0.821882367134094

00:52:08.532 --> 00:52:11.046 epic campus come online and positive

NOTE Confidence: 0.821882367134094

00:52:11.046 --> 00:52:13.231 leasing that when they're making

NOTE Confidence: 0.821882367134094

00:52:13.231 --> 00:52:15.426 a slower escaped decision again,

NOTE Confidence: 0.821882367134094

00:52:15.430 --> 00:52:16.882 we're controlling here against

NOTE Confidence: 0.821882367134094

00:52:16.882 --> 00:52:18.697 all of the control conditions.
NOTE Confidence: 0.821882367134094

00:52:18.700 --> 00:52:21.340 For any timing confounds OK and we can
NOTE Confidence: 0.821882367134094

00:52:21.340 --> 00:52:24.526 see here that particular campus and I guess,
NOTE Confidence: 0.821882367134094

00:52:24.530 --> 00:52:25.256 positive singular,
NOTE Confidence: 0.821882367134094

00:52:25.256 --> 00:52:27.434 not so much the media prefix.
NOTE Confidence: 0.821882367134094

00:52:27.440 --> 00:52:29.035 So all these are significant
NOTE Confidence: 0.821882367134094

00:52:29.035 --> 00:52:30.630 against each other against their
NOTE Confidence: 0.821882367134094

00:52:30.690 --> 00:52:32.725 control conditions and against the
NOTE Confidence: 0.821882367134094

00:52:32.725 --> 00:52:34.353 relative fast attacking conditions.
NOTE Confidence: 0.821882367134094

00:52:34.360 --> 00:52:36.894 We find that these regions come along.
NOTE Confidence: 0.821882367134094

00:52:36.900 --> 00:52:39.060 An argument here was that this
NOTE Confidence: 0.821882367134094

00:52:39.060 --> 00:52:40.910 may be associated with more.
NOTE Confidence: 0.821882367134094

00:52:40.910 --> 00:52:42.740 Of strategic escape from that
NOTE Confidence: 0.821882367134094

00:52:42.740 --> 00:52:45.080 threat or using their memory system.
NOTE Confidence: 0.821882367134094

00:52:45.080 --> 00:52:47.834 So imagine where that threat may
NOTE Confidence: 0.821882367134094

00:52:47.834 --> 00:52:50.293 have attacked him before more

NOTE Confidence: 0.821882367134094
00:52:50.293 --> 00:52:52.978 information processing is going on.
NOTE Confidence: 0.821882367134094
00:52:52.980 --> 00:52:56.166 So our prediction then was that.
NOTE Confidence: 0.821882367134094
00:52:56.170 --> 00:52:58.319 To become anxious if anxiety is a
NOTE Confidence: 0.821882367134094
00:52:58.319 --> 00:53:00.096 future stay, it's a slow state.
NOTE Confidence: 0.821882367134094
00:53:00.096 --> 00:53:01.830 We made this prediction that when
NOTE Confidence: 0.812339782714844
00:53:01.885 --> 00:53:03.254 subject, so escaping from
NOTE Confidence: 0.812339782714844
00:53:03.254 --> 00:53:04.486 a fast attacking threat,
NOTE Confidence: 0.812339782714844
00:53:04.490 --> 00:53:05.770 anxiety or individual difference
NOTE Confidence: 0.812339782714844
00:53:05.770 --> 00:53:07.690 in transite should have no effect
NOTE Confidence: 0.812339782714844
00:53:07.738 --> 00:53:09.406 upon their behavior or no circuits.
NOTE Confidence: 0.812339782714844
00:53:09.410 --> 00:53:11.643 We should see the most prominent effect
NOTE Confidence: 0.812339782714844
00:53:11.643 --> 00:53:14.078 when they've got time to think and their
NOTE Confidence: 0.812339782714844
00:53:14.078 --> 00:53:16.189 damn pioneers talked a lot about this.
NOTE Confidence: 0.812339782714844
00:53:16.190 --> 00:53:17.374 Where to become anxious?
NOTE Confidence: 0.812339782714844
00:53:17.374 --> 00:53:19.580 You need to have time to think.
NOTE Confidence: 0.812339782714844

00:53:19.580 --> 00:53:21.575 You don't need to have time to
NOTE Confidence: 0.812339782714844

00:53:21.575 --> 00:53:22.970 think that you're anxious.
NOTE Confidence: 0.812339782714844

00:53:22.970 --> 00:53:24.986 OK, so our prediction is that anxiety
NOTE Confidence: 0.812339782714844

00:53:24.986 --> 00:53:26.905 would only have an effect upon
NOTE Confidence: 0.812339782714844

00:53:26.905 --> 00:53:28.570 the slower processor system which.
NOTE Confidence: 0.812339782714844

00:53:28.570 --> 00:53:31.062 Targets these or is a vote by
NOTE Confidence: 0.812339782714844

00:53:31.062 --> 00:53:32.600 these hippocampal and prefrontal
NOTE Confidence: 0.812339782714844

00:53:32.600 --> 00:53:35.407 regions of the brain which we know.
NOTE Confidence: 0.812339782714844

00:53:35.410 --> 00:53:36.410 Josh Gordon.
NOTE Confidence: 0.812339782714844

00:53:36.410 --> 00:53:39.410 Others show another work on that.
NOTE Confidence: 0.812339782714844

00:53:39.410 --> 00:53:41.576 And that's what we found for
NOTE Confidence: 0.812339782714844

00:53:41.576 --> 00:53:42.659 fast attacking conditions.
NOTE Confidence: 0.812339782714844

00:53:42.660 --> 00:53:43.021 Again,
NOTE Confidence: 0.812339782714844

00:53:43.021 --> 00:53:45.187 we control for variance and everything.
NOTE Confidence: 0.812339782714844

00:53:45.190 --> 00:53:47.356 Here we add in their mid
NOTE Confidence: 0.812339782714844

00:53:47.356 --> 00:53:48.800 conditions and so on.

NOTE Confidence: 0.812339782714844

00:53:48.800 --> 00:53:51.565 We still find that for fast attacking

NOTE Confidence: 0.812339782714844

00:53:51.565 --> 00:53:53.850 threats trainings on T as no effect.

NOTE Confidence: 0.812339782714844

00:53:53.850 --> 00:53:56.282 OK, however we see that I try and

NOTE Confidence: 0.812339782714844

00:53:56.282 --> 00:53:57.818 just individuals when they're

NOTE Confidence: 0.812339782714844

00:53:57.818 --> 00:53:59.988 encountering a slow attacking threat.

NOTE Confidence: 0.812339782714844

00:53:59.990 --> 00:54:02.150 OK, it predicts or not predict.

NOTE Confidence: 0.812339782714844

00:54:02.150 --> 00:54:03.634 So she's word predicts,

NOTE Confidence: 0.812339782714844

00:54:03.634 --> 00:54:05.489 but correlates with then fleeing

NOTE Confidence: 0.812339782714844

00:54:05.489 --> 00:54:06.849 earlier from the threat.

NOTE Confidence: 0.812339782714844

00:54:06.850 --> 00:54:09.419 OK, I am just individuals flee earlier.

NOTE Confidence: 0.812339782714844

00:54:09.420 --> 00:54:12.620 The slow attacking threat OK?

NOTE Confidence: 0.812339782714844

00:54:12.620 --> 00:54:15.014 What do we see in the brain?

NOTE Confidence: 0.812339782714844

00:54:15.020 --> 00:54:15.340 Well,

NOTE Confidence: 0.812339782714844

00:54:15.340 --> 00:54:16.940 if we look at correlations

NOTE Confidence: 0.812339782714844

00:54:16.940 --> 00:54:18.659 with track anxiety with the

NOTE Confidence: 0.812339782714844

00:54:18.659 --> 00:54:20.167 fast attacking threat before,
NOTE Confidence: 0.812339782714844

00:54:20.170 --> 00:54:21.880 it doesn't correlate with anything.
NOTE Confidence: 0.812339782714844

00:54:21.880 --> 00:54:24.274 If we look at slow attacking threat,
NOTE Confidence: 0.812339782714844

00:54:24.280 --> 00:54:26.164 we find significant effect of increased
NOTE Confidence: 0.812339782714844

00:54:26.164 --> 00:54:28.399 activity in the upper campus eventually.
NOTE Confidence: 0.812339782714844

00:54:28.400 --> 00:54:29.784 Proven coaches and the
NOTE Confidence: 0.812339782714844

00:54:29.784 --> 00:54:31.168 install so limited singular.
NOTE Confidence: 0.812339782714844

00:54:31.170 --> 00:54:33.450 That those those regions correlate with
NOTE Confidence: 0.812339782714844

00:54:33.450 --> 00:54:35.869 increasing car like with trade anxiety.
NOTE Confidence: 0.812339782714844

00:54:35.870 --> 00:54:38.702 If we run a PPI to look at
NOTE Confidence: 0.812339782714844

00:54:38.702 --> 00:54:40.359 functional connectivity or coupling
NOTE Confidence: 0.812339782714844

00:54:40.359 --> 00:54:42.534 between those brain regions OK,
NOTE Confidence: 0.812339782714844

00:54:42.540 --> 00:54:45.228 then we find the strength of the
NOTE Confidence: 0.812339782714844

00:54:45.228 --> 00:54:46.380 connectivity between hippocampus
NOTE Confidence: 0.812339782714844

00:54:46.446 --> 00:54:48.054 and vengeance medial prefrontal
NOTE Confidence: 0.812339782714844

00:54:48.054 --> 00:54:50.064 quarters increased as as they

NOTE Confidence: 0.812339782714844
00:54:50.064 --> 00:54:51.950 scored higher on trait anxiety.
NOTE Confidence: 0.812339782714844
00:54:51.950 --> 00:54:53.171 OK, and again,
NOTE Confidence: 0.812339782714844
00:54:53.171 --> 00:54:56.020 this fit really beautifully with the work
NOTE Confidence: 0.812339782714844
00:54:56.093 --> 00:54:58.997 of Josh Gordon and others in this group,
NOTE Confidence: 0.812339782714844
00:54:59.000 --> 00:55:00.600 showing that this circuit
NOTE Confidence: 0.812339782714844
00:55:00.600 --> 00:55:02.600 may be associated with try.
NOTE Confidence: 0.812339782714844
00:55:02.600 --> 00:55:05.270 Anxiety.
NOTE Confidence: 0.812339782714844
00:55:05.270 --> 00:55:08.528 OK, so I'll go through this one pretty quick.
NOTE Confidence: 0.812339782714844
00:55:08.530 --> 00:55:12.355 We have what 5 minutes feel is that correct?
NOTE Confidence: 0.812339782714844
00:55:12.360 --> 00:55:14.260 Yeah alright yeah thank you.
NOTE Confidence: 0.812339782714844
00:55:14.260 --> 00:55:14.956 Yeah OK,
NOTE Confidence: 0.812339782714844
00:55:14.956 --> 00:55:17.044 so here we're looking at what's
NOTE Confidence: 0.812339782714844
00:55:17.044 --> 00:55:18.819 called spatial marginal safety.
NOTE Confidence: 0.812339782714844
00:55:18.820 --> 00:55:20.340 Another paradigm or theory,
NOTE Confidence: 0.812339782714844
00:55:20.340 --> 00:55:23.070 that sort of we stole from the
NOTE Confidence: 0.812339782714844

00:55:23.070 --> 00:55:24.590 field of behavioral psychology
NOTE Confidence: 0.812339782714844

00:55:24.590 --> 00:55:28.021 and what we want to look at is how
NOTE Confidence: 0.812339782714844

00:55:28.021 --> 00:55:29.846 people make decisions about how
NOTE Confidence: 0.812339782714844

00:55:29.846 --> 00:55:32.586 close to be to safety in the face
NOTE Confidence: 0.812339782714844

00:55:32.586 --> 00:55:34.400 of uncertain attack distances.
NOTE Confidence: 0.812339782714844

00:55:34.400 --> 00:55:36.566 And imagine the safeties just simply
NOTE Confidence: 0.812339782714844

00:55:36.566 --> 00:55:38.868 defined here as the distance which
NOTE Confidence: 0.812339782714844

00:55:38.868 --> 00:55:41.537 prey will move from safety refuge, OK?
NOTE Confidence: 0.812339782714844

00:55:41.537 --> 00:55:44.824 And we can see that if the prey is in
NOTE Confidence: 0.812339782714844

00:55:44.824 --> 00:55:48.040 a volatile or identity predatory environment,
NOTE Confidence: 0.812339782714844

00:55:48.040 --> 00:55:49.785 it would always for which
NOTE Confidence: 0.812339782714844

00:55:49.785 --> 00:55:51.530 closer to its safety refuge.
NOTE Confidence: 0.812339782714844

00:55:51.530 --> 00:55:51.872 OK,
NOTE Confidence: 0.812339782714844

00:55:51.872 --> 00:55:54.266 if it's in a situation where it's
NOTE Confidence: 0.812339782714844

00:55:54.266 --> 00:55:57.115 not seen approach to for a long time,
NOTE Confidence: 0.812339782714844

00:55:57.120 --> 00:55:58.860 it knows the environment well,

NOTE Confidence: 0.812339782714844
00:55:58.860 --> 00:56:01.310 it can predict the environment very well.
NOTE Confidence: 0.812339782714844
00:56:01.310 --> 00:56:04.094 It will move further away from its safety.
NOTE Confidence: 0.812339782714844
00:56:04.100 --> 00:56:05.078 Refuge, OK?
NOTE Confidence: 0.812339782714844
00:56:05.078 --> 00:56:08.990 So we create a a fairly simple task
NOTE Confidence: 0.772177497545878
00:56:09.103 --> 00:56:12.098 here again, where subjects are given
NOTE Confidence: 0.772177497545878
00:56:12.098 --> 00:56:14.744 contingency, Avaya libeled oil shock,
NOTE Confidence: 0.772177497545878
00:56:14.744 --> 00:56:16.928 they encounter three different
NOTE Confidence: 0.772177497545878
00:56:16.928 --> 00:56:19.430 virtual predators that asked are
NOTE Confidence: 0.772177497545878
00:56:19.430 --> 00:56:22.082 confident they are escaped from the
NOTE Confidence: 0.772177497545878
00:56:22.082 --> 00:56:24.891 predator and then what happens is they
NOTE Confidence: 0.772177497545878
00:56:24.891 --> 00:56:27.396 after make a decision here about.
NOTE Confidence: 0.772177497545878
00:56:27.396 --> 00:56:30.812 How close they want to place their
NOTE Confidence: 0.772177497545878
00:56:30.812 --> 00:56:33.975 triangle to the safety refuge, OK?
NOTE Confidence: 0.772177497545878
00:56:33.975 --> 00:56:37.550 What happens next is they?
NOTE Confidence: 0.772177497545878
00:56:37.550 --> 00:56:39.692 Make that decision and the execute that
NOTE Confidence: 0.772177497545878

00:56:39.692 --> 00:56:41.877 exists decision so they made the decision.
NOTE Confidence: 0.772177497545878

00:56:41.880 --> 00:56:42.888 They can't move.
NOTE Confidence: 0.772177497545878

00:56:42.888 --> 00:56:45.240 The triangle should say in that condition
NOTE Confidence: 0.772177497545878

00:56:45.305 --> 00:56:47.441 and then what will happen is they can
NOTE Confidence: 0.772177497545878

00:56:47.441 --> 00:56:49.598 move the triangle to move it closer.
NOTE Confidence: 0.772177497545878

00:56:49.600 --> 00:56:52.256 Now the reason is this is because we
NOTE Confidence: 0.772177497545878

00:56:52.256 --> 00:56:54.863 use motivate panels to say we want to
NOTE Confidence: 0.772177497545878

00:56:54.863 --> 00:56:57.060 control for any motor confounds OK.
NOTE Confidence: 0.772177497545878

00:56:57.060 --> 00:56:58.740 So we have a pure decision where
NOTE Confidence: 0.772177497545878

00:56:58.740 --> 00:57:00.666 they look at the screen and Kate
NOTE Confidence: 0.772177497545878

00:57:00.666 --> 00:57:02.394 what decision you're going to make
NOTE Confidence: 0.772177497545878

00:57:02.449 --> 00:57:04.369 and then they execute that decision.
NOTE Confidence: 0.772177497545878

00:57:04.370 --> 00:57:05.770 That's what we're interested in.
NOTE Confidence: 0.772177497545878

00:57:05.770 --> 00:57:07.456 Is that when they're going to
NOTE Confidence: 0.772177497545878

00:57:07.456 --> 00:57:08.299 make that decision,
NOTE Confidence: 0.772177497545878

00:57:08.300 --> 00:57:09.920 they then see the outcome and

NOTE Confidence: 0.772177497545878
00:57:09.920 --> 00:57:11.949 they see if they escaped or not,
NOTE Confidence: 0.772177497545878
00:57:11.950 --> 00:57:14.478 but they see the position at which the
NOTE Confidence: 0.772177497545878
00:57:14.478 --> 00:57:16.488 predator would have attacked them OK.
NOTE Confidence: 0.772177497545878
00:57:16.490 --> 00:57:18.954 So this is actually a speed up version.
NOTE Confidence: 0.772177497545878
00:57:18.960 --> 00:57:20.500 Some respects of the flight
NOTE Confidence: 0.772177497545878
00:57:20.500 --> 00:57:21.424 initiation distance task.
NOTE Confidence: 0.772177497545878
00:57:21.430 --> 00:57:23.887 Now we didn't want to have the same flight
NOTE Confidence: 0.772177497545878
00:57:23.887 --> 00:57:25.567 initiation distance task here because
NOTE Confidence: 0.772177497545878
00:57:25.567 --> 00:57:27.601 we would have rather enough conditions.
NOTE Confidence: 0.772177497545878
00:57:27.610 --> 00:57:28.960 It would have extended the
NOTE Confidence: 0.772177497545878
00:57:28.960 --> 00:57:31.010 length of the of the experiment.
NOTE Confidence: 0.772177497545878
00:57:31.010 --> 00:57:32.864 So this task was already 2
NOTE Confidence: 0.772177497545878
00:57:32.864 --> 00:57:34.100 hours long per subject.
NOTE Confidence: 0.772177497545878
00:57:34.100 --> 00:57:36.872 So we do once before hours long post subject.
NOTE Confidence: 0.772177497545878
00:57:36.880 --> 00:57:38.812 So what we did is we just
NOTE Confidence: 0.772177497545878

00:57:38.812 --> 00:57:40.280 showed in the outcome.
NOTE Confidence: 0.772177497545878

00:57:40.280 --> 00:57:42.280 But what we want them to do is
NOTE Confidence: 0.772177497545878

00:57:42.280 --> 00:57:44.305 begin to learn overtime where they
NOTE Confidence: 0.772177497545878

00:57:44.305 --> 00:57:46.495 think this red one for example.
NOTE Confidence: 0.772177497545878

00:57:46.500 --> 00:57:48.642 Will attack them begin to build
NOTE Confidence: 0.772177497545878

00:57:48.642 --> 00:57:50.709 a model of wherever the tax.
NOTE Confidence: 0.772177497545878

00:57:50.710 --> 00:57:51.412 So therefore,
NOTE Confidence: 0.772177497545878

00:57:51.412 --> 00:57:53.518 when they make their next imagine
NOTE Confidence: 0.772177497545878

00:57:53.518 --> 00:57:54.220 safety decision,
NOTE Confidence: 0.772177497545878

00:57:54.220 --> 00:57:55.624 they'll take in consideration
NOTE Confidence: 0.772177497545878

00:57:55.624 --> 00:57:57.028 where attack them before,
NOTE Confidence: 0.772177497545878

00:57:57.030 --> 00:57:59.136 but we make this more difficult.
NOTE Confidence: 0.772177497545878

00:57:59.140 --> 00:58:01.240 We have two Gaussians dear OK,
NOTE Confidence: 0.772177497545878

00:58:01.240 --> 00:58:03.424 and we have one which is one of
NOTE Confidence: 0.772177497545878

00:58:03.424 --> 00:58:05.497 interest which is electric kurtick
NOTE Confidence: 0.772177497545878

00:58:05.497 --> 00:58:07.445 positive ptosis distribution and

NOTE Confidence: 0.772177497545878
00:58:07.445 --> 00:58:09.532 electric kurtick distribution is 1
NOTE Confidence: 0.772177497545878
00:58:09.532 --> 00:58:11.485 where you have an increase in outlaws
NOTE Confidence: 0.772177497545878
00:58:11.485 --> 00:58:13.218 it's more difficult to predict.
NOTE Confidence: 0.772177497545878
00:58:13.218 --> 00:58:15.790 OK let's occur tick lept means skinny
NOTE Confidence: 0.772177497545878
00:58:15.790 --> 00:58:18.086 account so you can see it skinnier.
NOTE Confidence: 0.772177497545878
00:58:18.090 --> 00:58:19.900 But what you see here?
NOTE Confidence: 0.772177497545878
00:58:19.900 --> 00:58:21.500 Is that there's more outliers?
NOTE Confidence: 0.772177497545878
00:58:21.500 --> 00:58:21.883 OK,
NOTE Confidence: 0.772177497545878
00:58:21.883 --> 00:58:24.947 so that makes it more difficult to predict.
NOTE Confidence: 0.772177497545878
00:58:24.950 --> 00:58:25.452 Um?
NOTE Confidence: 0.772177497545878
00:58:25.452 --> 00:58:27.764 What we are here, then,
NOTE Confidence: 0.772177497545878
00:58:27.764 --> 00:58:28.980 is a matched variance.
NOTE Confidence: 0.772177497545878
00:58:28.980 --> 00:58:29.286 OK,
NOTE Confidence: 0.772177497545878
00:58:29.286 --> 00:58:31.428 but normal distribution and then just a
NOTE Confidence: 0.772177497545878
00:58:31.428 --> 00:58:32.918 normal distribution with our ferrets.
NOTE Confidence: 0.772177497545878

00:58:32.920 --> 00:58:34.726 So this was the easiest to.
NOTE Confidence: 0.772177497545878

00:58:34.730 --> 00:58:36.250 Blue is easiest to predict.
NOTE Confidence: 0.772177497545878

00:58:36.250 --> 00:58:38.422 The green second easiest and the
NOTE Confidence: 0.772177497545878

00:58:38.422 --> 00:58:40.660 red the most difficult to predict.
NOTE Confidence: 0.772177497545878

00:58:40.660 --> 00:58:42.770 So Long story short here,
NOTE Confidence: 0.772177497545878

00:58:42.770 --> 00:58:45.248 what we see is that subjects place
NOTE Confidence: 0.772177497545878

00:58:45.248 --> 00:58:47.344 themselves closer to safety when
NOTE Confidence: 0.772177497545878

00:58:47.344 --> 00:58:49.759 they encounter the more uncertain
NOTE Confidence: 0.772177497545878

00:58:49.759 --> 00:58:51.208 leptokurtic virtual predator.
NOTE Confidence: 0.772177497545878

00:58:51.210 --> 00:58:52.101 So it worked.
NOTE Confidence: 0.772177497545878

00:58:52.101 --> 00:58:54.180 We also found we only have 20
NOTE Confidence: 0.772177497545878

00:58:54.249 --> 00:58:56.114 subjects in this explain because
NOTE Confidence: 0.772177497545878

00:58:56.114 --> 00:58:58.946 it was we won't focus on individual
NOTE Confidence: 0.772177497545878

00:58:58.946 --> 00:59:01.640 differences for two hours per subject.
NOTE Confidence: 0.772177497545878

00:59:01.640 --> 00:59:03.936 So we have a nice dense data
NOTE Confidence: 0.772177497545878

00:59:03.936 --> 00:59:04.920 certain as powerful

NOTE Confidence: 0.805091321468353
00:59:04.994 --> 00:59:07.500 data set, but we don't really have a good
NOTE Confidence: 0.805091321468353
00:59:07.500 --> 00:59:09.579 large datasets look individual differences,
NOTE Confidence: 0.805091321468353
00:59:09.580 --> 00:59:11.566 but we still looked at it.
NOTE Confidence: 0.805091321468353
00:59:11.570 --> 00:59:13.880 We didn't put this in the paper,
NOTE Confidence: 0.805091321468353
00:59:13.880 --> 00:59:15.987 but what we found is that trait
NOTE Confidence: 0.805091321468353
00:59:15.987 --> 00:59:17.681 anxiety predicted out close the
NOTE Confidence: 0.805091321468353
00:59:17.681 --> 00:59:19.506 subjects replacing close to safety,
NOTE Confidence: 0.805091321468353
00:59:19.510 --> 00:59:21.160 particularly for the leptokurtic thread.
NOTE Confidence: 0.805091321468353
00:59:21.160 --> 00:59:22.840 Now we didn't find a
NOTE Confidence: 0.805091321468353
00:59:22.840 --> 00:59:23.848 significant correlation here.
NOTE Confidence: 0.805091321468353
00:59:23.850 --> 00:59:25.506 For the other types of throughout
NOTE Confidence: 0.805091321468353
00:59:25.506 --> 00:59:26.610 the other two Gaussians.
NOTE Confidence: 0.805091321468353
00:59:26.610 --> 00:59:28.719 But as you can see, there's a trend,
NOTE Confidence: 0.805091321468353
00:59:28.719 --> 00:59:31.039 and I think if we have run 200 people
NOTE Confidence: 0.805091321468353
00:59:31.039 --> 00:59:32.978 on this report would have found all
NOTE Confidence: 0.805091321468353

00:59:32.978 --> 00:59:35.379 of them with the all of them would
NOTE Confidence: 0.805091321468353

00:59:35.379 --> 00:59:36.822 have correlated with try anxiety.
NOTE Confidence: 0.805091321468353

00:59:36.822 --> 00:59:39.030 But again, when you've gone end of 20,
NOTE Confidence: 0.805091321468353

00:59:39.030 --> 00:59:40.686 we only see the effect here.
NOTE Confidence: 0.805091321468353

00:59:40.690 --> 00:59:44.956 So we might extend on that as another paper.
NOTE Confidence: 0.805091321468353

00:59:44.960 --> 00:59:46.958 OK, So what do we find in the brain?
NOTE Confidence: 0.805091321468353

00:59:46.960 --> 00:59:48.070 I'll go over this cooks.
NOTE Confidence: 0.805091321468353

00:59:48.070 --> 00:59:50.406 I know we don't have much time so.
NOTE Confidence: 0.805091321468353

00:59:50.410 --> 00:59:52.180 We again as we do,
NOTE Confidence: 0.805091321468353

00:59:52.180 --> 00:59:54.105 we use machine learning approaches
NOTE Confidence: 0.805091321468353

00:59:54.105 --> 00:59:56.030 from multivariate panelists and what
NOTE Confidence: 0.805091321468353

00:59:56.085 --> 00:59:58.199 we're interested in is just the choice.
NOTE Confidence: 0.805091321468353

00:59:58.200 --> 01:00:00.360 We're not interested where they make
NOTE Confidence: 0.805091321468353

01:00:00.360 --> 01:00:02.896 a safe choice or a dangerous choice
NOTE Confidence: 0.805091321468353

01:00:02.896 --> 01:00:05.276 in this first pass of the data,
NOTE Confidence: 0.805091321468353

01:00:05.280 --> 01:00:07.590 we just interested what's going on their

NOTE Confidence: 0.805091321468353

01:00:07.590 --> 01:00:09.878 brain when they make these decisions.

NOTE Confidence: 0.805091321468353

01:00:09.880 --> 01:00:12.607 OK, and what we find is that some more

NOTE Confidence: 0.805091321468353

01:00:12.607 --> 01:00:15.187 cognitive fear anxiety circuit coming online,

NOTE Confidence: 0.805091321468353

01:00:15.190 --> 01:00:16.606 hippocampus and venture medial

NOTE Confidence: 0.805091321468353

01:00:16.606 --> 01:00:17.668 prefrontal cortex regions.

NOTE Confidence: 0.805091321468353

01:00:17.670 --> 01:00:20.148 Now we were very interested in this,

NOTE Confidence: 0.805091321468353

01:00:20.150 --> 01:00:22.346 defined in here.

NOTE Confidence: 0.805091321468353

01:00:22.346 --> 01:00:23.810 OK, because.

NOTE Confidence: 0.805091321468353

01:00:23.810 --> 01:00:26.477 What we had predicted that when they're

NOTE Confidence: 0.805091321468353

01:00:26.477 --> 01:00:28.964 making safety decisions is going to be

NOTE Confidence: 0.805091321468353

01:00:28.964 --> 01:00:30.884 more this anterior region when they're

NOTE Confidence: 0.805091321468353

01:00:30.953 --> 01:00:32.949 making more dangerous conditions.

NOTE Confidence: 0.805091321468353

01:00:32.950 --> 01:00:35.025 More posterior mentioned in the

NOTE Confidence: 0.805091321468353

01:00:35.025 --> 01:00:37.100 original studies and meta analysis

NOTE Confidence: 0.805091321468353

01:00:37.163 --> 01:00:39.047 we found we found this region.

NOTE Confidence: 0.805091321468353

01:00:39.050 --> 01:00:41.300 There seems to be associated with
NOTE Confidence: 0.805091321468353

01:00:41.300 --> 01:00:42.800 safety signals and potential
NOTE Confidence: 0.805091321468353

01:00:42.866 --> 01:00:44.378 safety decisions as well.
NOTE Confidence: 0.805091321468353

01:00:44.380 --> 01:00:46.290 OK or more predictable environments.
NOTE Confidence: 0.805091321468353

01:00:46.290 --> 01:00:48.774 So what we did is we looked at these
NOTE Confidence: 0.805091321468353

01:00:48.774 --> 01:00:51.620 two regions separately with hippocampus,
NOTE Confidence: 0.805091321468353

01:00:51.620 --> 01:00:52.766 posterior immediate venture,
NOTE Confidence: 0.805091321468353

01:00:52.766 --> 01:00:54.676 me from cortex and anterior.
NOTE Confidence: 0.805091321468353

01:00:54.680 --> 01:00:58.180 Make venture mini proofing cortex.
NOTE Confidence: 0.805091321468353

01:00:58.180 --> 01:01:00.560 I will be following up a campus
NOTE Confidence: 0.805091321468353

01:01:00.560 --> 01:01:03.476 seems to be active for all of them.
NOTE Confidence: 0.805091321468353

01:01:03.480 --> 01:01:06.904 There seems to be a trend towards the.
NOTE Confidence: 0.805091321468353

01:01:06.910 --> 01:01:09.920 Epic Campus being more active
NOTE Confidence: 0.805091321468353

01:01:09.920 --> 01:01:12.328 for the Leptokurtic uncertain,
NOTE Confidence: 0.805091321468353

01:01:12.330 --> 01:01:15.936 but still there was not significant.
NOTE Confidence: 0.805091321468353

01:01:15.940 --> 01:01:21.526 Are all significantly above our threshold OK?

NOTE Confidence: 0.805091321468353

01:01:21.530 --> 01:01:23.770 We found that when it was the

NOTE Confidence: 0.805091321468353

01:01:23.770 --> 01:01:24.730 more uncertain threat,

NOTE Confidence: 0.805091321468353

01:01:24.730 --> 01:01:26.010 the only significant above

NOTE Confidence: 0.805091321468353

01:01:26.010 --> 01:01:27.290 threshold was the posterior,

NOTE Confidence: 0.805091321468353

01:01:27.290 --> 01:01:29.024 and when it was the easiest

NOTE Confidence: 0.805091321468353

01:01:29.024 --> 01:01:30.810 one to predict the greenest.

NOTE Confidence: 0.805091321468353

01:01:30.810 --> 01:01:33.370 So this should be the other way around.

NOTE Confidence: 0.805091321468353

01:01:33.370 --> 01:01:35.290 This cream is the easiest ones,

NOTE Confidence: 0.805091321468353

01:01:35.290 --> 01:01:37.210 that one 'cause it's my fault.

NOTE Confidence: 0.805091321468353

01:01:37.210 --> 01:01:39.770 We found that the anterior is more active,

NOTE Confidence: 0.805091321468353

01:01:39.770 --> 01:01:43.090 so we want to prove that even further.

NOTE Confidence: 0.805091321468353

01:01:43.090 --> 01:01:46.820 So what we did then is we run it again.

NOTE Confidence: 0.805091321468353

01:01:46.820 --> 01:01:49.010 But in universe analysis and we

NOTE Confidence: 0.805091321468353

01:01:49.010 --> 01:01:52.042 wanted to look at the use in those

NOTE Confidence: 0.805091321468353

01:01:52.042 --> 01:01:54.280 two regions of the venture media,

NOTE Confidence: 0.805091321468353

01:01:54.280 --> 01:01:55.736 prefrontal cortex of seeds.
NOTE Confidence: 0.805091321468353

01:01:55.736 --> 01:01:57.920 Where is their connectivity to and
NOTE Confidence: 0.805091321468353

01:01:57.988 --> 01:02:00.238 what we found that the posterior
NOTE Confidence: 0.805091321468353

01:02:00.238 --> 01:02:00.988 passed eventually.
NOTE Confidence: 0.805091321468353

01:02:00.990 --> 01:02:03.240 Prefrontal cortex seem to be oh
NOTE Confidence: 0.805091321468353

01:02:03.240 --> 01:02:04.740 central increased coupling with
NOTE Confidence: 0.805091321468353

01:02:04.803 --> 01:02:06.588 the amygdala and their campus,
NOTE Confidence: 0.805091321468353

01:02:06.590 --> 01:02:08.936 but For the more anterior parts
NOTE Confidence: 0.805091321468353

01:02:08.936 --> 01:02:10.500 of the venture River
NOTE Confidence: 0.7744380235672

01:02:10.583 --> 01:02:12.904 cortex, it seems to be the chordate
NOTE Confidence: 0.7744380235672

01:02:12.904 --> 01:02:15.593 seems to be more active if we run
NOTE Confidence: 0.7744380235672

01:02:15.593 --> 01:02:17.363 a parametric modulator on when
NOTE Confidence: 0.7744380235672

01:02:17.363 --> 01:02:19.560 they made a dangerous decision,
NOTE Confidence: 0.7744380235672

01:02:19.560 --> 01:02:21.320 the more dangerous the further
NOTE Confidence: 0.7744380235672

01:02:21.320 --> 01:02:23.080 away they went from safety.
NOTE Confidence: 0.7744380235672

01:02:23.080 --> 01:02:24.484 Posterior parts of the

NOTE Confidence: 0.7744380235672
01:02:24.484 --> 01:02:25.888 venture media from cortex.
NOTE Confidence: 0.7744380235672
01:02:25.890 --> 01:02:28.362 If they made more of a safety decision
NOTE Confidence: 0.7744380235672
01:02:28.362 --> 01:02:30.159 towards safety venture anterior parts
NOTE Confidence: 0.7744380235672
01:02:30.159 --> 01:02:32.397 of the venturing readable from the
NOTE Confidence: 0.7744380235672
01:02:32.397 --> 01:02:34.277 cortex that preliminary model where
NOTE Confidence: 0.7744380235672
01:02:34.277 --> 01:02:36.443 was was that the more predictable
NOTE Confidence: 0.7744380235672
01:02:36.450 --> 01:02:38.628 threats will activate more of these.
NOTE Confidence: 0.7744380235672
01:02:38.630 --> 01:02:40.705 Safety signals that we see
NOTE Confidence: 0.7744380235672
01:02:40.705 --> 01:02:42.365 in the anterior regions,
NOTE Confidence: 0.7744380235672
01:02:42.370 --> 01:02:45.268 and this seems to have contact too.
NOTE Confidence: 0.7744380235672
01:02:45.270 --> 01:02:47.160 Coupling with the stratum and more
NOTE Confidence: 0.7744380235672
01:02:47.160 --> 01:02:49.410 posterior parts seem to be associated
NOTE Confidence: 0.7744380235672
01:02:49.410 --> 01:02:51.745 with more unpredictable threats that
NOTE Confidence: 0.7744380235672
01:02:51.745 --> 01:02:53.146 increased connectivity hippocampus,
NOTE Confidence: 0.7744380235672
01:02:53.150 --> 01:02:54.299 and the amygdala.
NOTE Confidence: 0.7744380235672

01:02:54.299 --> 01:02:57.480 And we ran a simple model on this,
NOTE Confidence: 0.7744380235672

01:02:57.480 --> 01:03:01.160 showing that these two regions also seem to
NOTE Confidence: 0.7744380235672

01:03:01.160 --> 01:03:05.148 be such J with prediction errors as well.
NOTE Confidence: 0.7744380235672

01:03:05.150 --> 01:03:07.178 So summary is that fair alongside
NOTE Confidence: 0.7744380235672

01:03:07.178 --> 01:03:08.981 her dynamic process involving the
NOTE Confidence: 0.7744380235672

01:03:08.981 --> 01:03:10.569 complexity of defensive circuits,
NOTE Confidence: 0.7744380235672

01:03:10.570 --> 01:03:12.736 this still or slow gradual attacking
NOTE Confidence: 0.7744380235672

01:03:12.736 --> 01:03:14.180 threats with activate more.
NOTE Confidence: 0.7744380235672

01:03:14.180 --> 01:03:15.620 This cognitive fear circuitry,
NOTE Confidence: 0.7744380235672

01:03:15.620 --> 01:03:17.420 which involves adventure mode equivalent,
NOTE Confidence: 0.7744380235672

01:03:17.420 --> 01:03:17.781 cortex,
NOTE Confidence: 0.7744380235672

01:03:17.781 --> 01:03:18.142 hippocampus,
NOTE Confidence: 0.7744380235672

01:03:18.142 --> 01:03:20.669 posterior singular and parts of the middle,
NOTE Confidence: 0.7744380235672

01:03:20.670 --> 01:03:23.393 again recalling fear because we define it
NOTE Confidence: 0.7744380235672

01:03:23.393 --> 01:03:26.368 by the context that you're under attack.
NOTE Confidence: 0.7744380235672

01:03:26.370 --> 01:03:28.155 Proxamol or fast attacking threats

NOTE Confidence: 0.7744380235672
01:03:28.155 --> 01:03:30.425 seem to activate more of this
NOTE Confidence: 0.7744380235672
01:03:30.425 --> 01:03:32.117 reactive fair circuit current,
NOTE Confidence: 0.7744380235672
01:03:32.120 --> 01:03:33.636 including the midbrain pack,
NOTE Confidence: 0.7744380235672
01:03:33.636 --> 01:03:35.910 doctor Gray and the motor circuits
NOTE Confidence: 0.7744380235672
01:03:35.979 --> 01:03:38.073 and more avoidance decisions in these
NOTE Confidence: 0.7744380235672
01:03:38.073 --> 01:03:40.381 new circuits seem to be searching
NOTE Confidence: 0.7744380235672
01:03:40.381 --> 01:03:42.069 more perspection and anxiety.
NOTE Confidence: 0.7744380235672
01:03:42.070 --> 01:03:44.918 When argument is that we found again is
NOTE Confidence: 0.7744380235672
01:03:44.918 --> 01:03:47.267 that maybe these I order representations
NOTE Confidence: 0.7744380235672
01:03:47.267 --> 01:03:50.120 of fear maybe in front of block.
NOTE Confidence: 0.7744380235672
01:03:50.120 --> 01:03:52.210 That's what Joe reduced stats
NOTE Confidence: 0.7744380235672
01:03:52.210 --> 01:03:55.369 for us to test in the future.
NOTE Confidence: 0.7744380235672
01:03:55.370 --> 01:03:57.872 Again, we thank all these wonderful
NOTE Confidence: 0.7744380235672
01:03:57.872 --> 01:04:00.490 people and my lab at Caltech.
NOTE Confidence: 0.7744380235672
01:04:00.490 --> 01:04:01.350 Thank you.
NOTE Confidence: 0.814905345439911

01:04:04.330 --> 01:04:07.570 Thanks so much Dean. That was fabulous.

NOTE Confidence: 0.892442941665649

01:04:07.570 --> 01:04:10.040 Does anyone have any questions?

NOTE Confidence: 0.82994544506073

01:04:15.360 --> 01:04:18.378 I'll start if there aren't any.

NOTE Confidence: 0.82994544506073

01:04:18.380 --> 01:04:20.472 So first of all,

NOTE Confidence: 0.82994544506073

01:04:20.472 --> 01:04:24.245 I love the laptop kurtick finding it

NOTE Confidence: 0.82994544506073

01:04:24.245 --> 01:04:27.906 makes me think that 2020 might be

NOTE Confidence: 0.82994544506073

01:04:27.906 --> 01:04:30.452 a leptokurtic easier for everybody.

NOTE Confidence: 0.82994544506073

01:04:30.452 --> 01:04:33.044 But you know the really nice

NOTE Confidence: 0.82994544506073

01:04:33.044 --> 01:04:34.989 model that you set up.

NOTE Confidence: 0.82994544506073

01:04:34.990 --> 01:04:36.509 I wonder if there are other ways

NOTE Confidence: 0.82994544506073

01:04:36.509 --> 01:04:38.199 to sort of leverage the differences

NOTE Confidence: 0.82994544506073

01:04:38.199 --> 01:04:39.839 between the different modules and

NOTE Confidence: 0.82994544506073

01:04:39.839 --> 01:04:41.713 one of the things I was thinking

NOTE Confidence: 0.82994544506073

01:04:41.713 --> 01:04:43.876 of that sort of came to mind as

NOTE Confidence: 0.82994544506073

01:04:43.876 --> 01:04:45.868 you were laying out the model.

NOTE Confidence: 0.82994544506073

01:04:45.870 --> 01:04:48.882 Are the differences between sort of

NOTE Confidence: 0.82994544506073
01:04:48.882 --> 01:04:50.890 experienced and instructed extinction
NOTE Confidence: 0.82994544506073
01:04:50.962 --> 01:04:53.370 that we see in the cognitive world,
NOTE Confidence: 0.82994544506073
01:04:53.370 --> 01:04:56.898 so the idea would be that you've learned,
NOTE Confidence: 0.82994544506073
01:04:56.900 --> 01:04:59.170 say, that in this leptokurtic
NOTE Confidence: 0.82994544506073
01:04:59.170 --> 01:05:02.209 environment that you ought to go quick.
NOTE Confidence: 0.82994544506073
01:05:02.210 --> 01:05:03.293 But but you,
NOTE Confidence: 0.82994544506073
01:05:03.293 --> 01:05:04.737 having learned those those
NOTE Confidence: 0.82994544506073
01:05:04.737 --> 01:05:05.459 statistical distributions,
NOTE Confidence: 0.82994544506073
01:05:05.460 --> 01:05:07.987 you tell them that now you're in
NOTE Confidence: 0.82994544506073
01:05:07.987 --> 01:05:09.070 a safe environment,
NOTE Confidence: 0.82994544506073
01:05:09.070 --> 01:05:11.597 but it's not the same context anymore,
NOTE Confidence: 0.82994544506073
01:05:11.600 --> 01:05:14.480 and the extent to which people believe you,
NOTE Confidence: 0.82994544506073
01:05:14.480 --> 01:05:16.720 they can actually very rapidly switch their
NOTE Confidence: 0.82994544506073
01:05:16.720 --> 01:05:18.819 assumptions about the underlying statistics.
NOTE Confidence: 0.82994544506073
01:05:18.820 --> 01:05:21.340 That works really nicely with JSR responses,
NOTE Confidence: 0.82994544506073

01:05:21.340 --> 01:05:22.074 for example,
NOTE Confidence: 0.82994544506073

01:05:22.074 --> 01:05:24.276 and I wondered how you might
NOTE Confidence: 0.82994544506073

01:05:24.276 --> 01:05:26.399 think about that in the context
NOTE Confidence: 0.845582783222198

01:05:26.400 --> 01:05:27.483 of your model.
NOTE Confidence: 0.845582783222198

01:05:27.483 --> 01:05:29.288 That I think that's beautiful.
NOTE Confidence: 0.845582783222198

01:05:29.290 --> 01:05:31.663 I think you know what we clearly
NOTE Confidence: 0.845582783222198

01:05:31.663 --> 01:05:33.310 see these differences overtime.
NOTE Confidence: 0.845582783222198

01:05:33.310 --> 01:05:35.260 In terms of the changing,
NOTE Confidence: 0.845582783222198

01:05:35.260 --> 01:05:37.594 once they learn that we speak
NOTE Confidence: 0.845582783222198

01:05:37.594 --> 01:05:39.150 into see down regulation,
NOTE Confidence: 0.845582783222198

01:05:39.150 --> 01:05:41.873 I think showed the work on the
NOTE Confidence: 0.845582783222198

01:05:41.873 --> 01:05:43.720 tarantula that overtime, the pH,
NOTE Confidence: 0.845582783222198

01:05:43.720 --> 01:05:46.100 PG and middle of the old circuit
NOTE Confidence: 0.845582783222198

01:05:46.100 --> 01:05:48.868 just begins to dampen down overtime,
NOTE Confidence: 0.845582783222198

01:05:48.870 --> 01:05:51.042 you know, and of course they're
NOTE Confidence: 0.845582783222198

01:05:51.042 --> 01:05:53.659 learning that is a dynamic system.

NOTE Confidence: 0.845582783222198
01:05:53.660 --> 01:05:55.694 And I think that doing that
NOTE Confidence: 0.845582783222198
01:05:55.694 --> 01:05:57.330 type of paradigm would be,
NOTE Confidence: 0.845582783222198
01:05:57.330 --> 01:05:58.670 you know, really fast,
NOTE Confidence: 0.845582783222198
01:05:58.670 --> 01:06:00.010 not thought about it,
NOTE Confidence: 0.845582783222198
01:06:00.010 --> 01:06:02.346 in that in that in that perspective you
NOTE Confidence: 0.845582783222198
01:06:02.346 --> 01:06:04.792 know one of the questions are typically
NOTE Confidence: 0.845582783222198
01:06:04.792 --> 01:06:07.020 related to that is basically there.
NOTE Confidence: 0.845582783222198
01:06:07.020 --> 01:06:09.954 What if you've got this small verse of Nate
NOTE Confidence: 0.845582783222198
01:06:09.954 --> 01:06:12.360 response that from fleeing from a thread,
NOTE Confidence: 0.845582783222198
01:06:12.360 --> 01:06:14.298 but then you switch people around
NOTE Confidence: 0.845582783222198
01:06:14.298 --> 01:06:16.360 to actually doing this paradigm and
NOTE Confidence: 0.845582783222198
01:06:16.360 --> 01:06:18.120 slightly different way you switch
NOTE Confidence: 0.845582783222198
01:06:18.120 --> 01:06:20.048 them around to say well look,
NOTE Confidence: 0.845582783222198
01:06:20.050 --> 01:06:22.332 it's normal for you to feel that
NOTE Confidence: 0.845582783222198
01:06:22.332 --> 01:06:25.060 when you see through it to avoid it.
NOTE Confidence: 0.845582783222198

01:06:25.060 --> 01:06:27.148 But actually to avoid the threat.
NOTE Confidence: 0.845582783222198

01:06:27.150 --> 01:06:29.310 You have to approach it around,
NOTE Confidence: 0.845582783222198

01:06:29.310 --> 01:06:30.162 you know.
NOTE Confidence: 0.845582783222198

01:06:30.162 --> 01:06:33.144 I think it's so similar type of.
NOTE Confidence: 0.845582783222198

01:06:33.150 --> 01:06:34.812 While I'm thinking about your question
NOTE Confidence: 0.845582783222198

01:06:34.812 --> 01:06:36.924 is that you know our plastic is this
NOTE Confidence: 0.845582783222198

01:06:36.924 --> 01:06:38.785 system and is that what the hippocampus
NOTE Confidence: 0.845582783222198

01:06:38.785 --> 01:06:40.715 and medial prefrontal cortex does?
NOTE Confidence: 0.845582783222198

01:06:40.720 --> 01:06:42.460 It allows you to be plastic.
NOTE Confidence: 0.845582783222198

01:06:42.460 --> 01:06:44.508 Say, OK, I can approach a threat if
NOTE Confidence: 0.845582783222198

01:06:44.508 --> 01:06:46.539 it's the most optimal strategy to.
NOTE Confidence: 0.845582783222198

01:06:46.540 --> 01:06:48.286 Of course, then you have these
NOTE Confidence: 0.845582783222198

01:06:48.286 --> 01:06:49.740 urges and drives that end,
NOTE Confidence: 0.845582783222198

01:06:49.740 --> 01:06:50.904 you know, know, know.
NOTE Confidence: 0.845582783222198

01:06:50.904 --> 01:06:52.359 But we all feel it.
NOTE Confidence: 0.845582783222198

01:06:52.360 --> 01:06:54.010 You know if you have not

NOTE Confidence: 0.845582783222198
01:06:54.010 --> 01:06:55.560 done the power she drunk,
NOTE Confidence: 0.845582783222198
01:06:55.560 --> 01:06:58.071 but I'm sure if I was to my brains
NOTE Confidence: 0.845582783222198
01:06:58.071 --> 01:07:00.210 telling me don't do it my midbrain,
NOTE Confidence: 0.845582783222198
01:07:00.210 --> 01:07:02.538 but my prefrontal cortex is saying do it.
NOTE Confidence: 0.845582783222198
01:07:02.540 --> 01:07:03.664 'cause you save and.
NOTE Confidence: 0.845582783222198
01:07:03.664 --> 01:07:05.794 You know it's not something that we
NOTE Confidence: 0.845582783222198
01:07:05.794 --> 01:07:07.699 would normally experience for evolution.
NOTE Confidence: 0.845582783222198
01:07:07.700 --> 01:07:09.680 I don't think that those says,
NOTE Confidence: 0.845582783222198
01:07:09.680 --> 01:07:12.020 but we have a way of being able to
NOTE Confidence: 0.845582783222198
01:07:12.020 --> 01:07:13.916 overcome our threats through changing
NOTE Confidence: 0.845582783222198
01:07:13.916 --> 01:07:16.274 the environment or approaches to it.
NOTE Confidence: 0.845582783222198
01:07:16.280 --> 01:07:18.260 Yeah, absolutely, that's a great idea.
NOTE Confidence: 0.845582783222198
01:07:18.260 --> 01:07:20.240 Maybe should talk more about that.
NOTE Confidence: 0.837555408477783
01:07:20.240 --> 01:07:22.550 Yeah, I'd love to see you in
NOTE Confidence: 0.837555408477783
01:07:22.550 --> 01:07:23.540 your tarantula experiment.
NOTE Confidence: 0.837555408477783

01:07:23.540 --> 01:07:25.850 It was a real tarantula, yeah, So
NOTE Confidence: 0.837555408477783

01:07:25.850 --> 01:07:27.806 what we did is we showed
NOTE Confidence: 0.837555408477783

01:07:27.806 --> 01:07:29.809 them trying to in the box,
NOTE Confidence: 0.837555408477783

01:07:29.810 --> 01:07:32.450 but then we actually switched out to videos.
NOTE Confidence: 0.837555408477783

01:07:32.450 --> 01:07:34.816 We lost a few people about five
NOTE Confidence: 0.837555408477783

01:07:34.816 --> 01:07:37.051 people out of 25. In that study.
NOTE Confidence: 0.837555408477783

01:07:37.051 --> 01:07:39.200 Didn't believe it but we got it
NOTE Confidence: 0.837555408477783

01:07:39.275 --> 01:07:41.681 and that was really the beginning
NOTE Confidence: 0.837555408477783

01:07:41.681 --> 01:07:43.285 experience event with you.
NOTE Confidence: 0.837555408477783

01:07:43.290 --> 01:07:45.026 Kind of got down the protocol but
NOTE Confidence: 0.837555408477783

01:07:45.026 --> 01:07:47.016 we got it down to convince them
NOTE Confidence: 0.837555408477783

01:07:47.016 --> 01:07:49.098 and we got everything so that we
NOTE Confidence: 0.837555408477783

01:07:49.098 --> 01:07:50.622 got 20 good people who believe
NOTE Confidence: 0.837555408477783

01:07:50.622 --> 01:07:52.245 that I was moving the tarantula.
NOTE Confidence: 0.837555408477783

01:07:52.245 --> 01:07:53.955 Now the reason why we didn't
NOTE Confidence: 0.837555408477783

01:07:53.955 --> 01:07:55.831 put the transfer in there was

NOTE Confidence: 0.837555408477783
01:07:55.831 --> 01:07:57.361 number of different reasons but.
NOTE Confidence: 0.837555408477783
01:07:57.370 --> 01:08:00.250 That were simple such things as you know,
NOTE Confidence: 0.837555408477783
01:08:00.250 --> 01:08:02.770 it was difficult to get Abby to
NOTE Confidence: 0.837555408477783
01:08:02.770 --> 01:08:05.290 actually put ranch in there with them.
NOTE Confidence: 0.837555408477783
01:08:05.290 --> 01:08:08.038 And also we didn't quite know how he's
NOTE Confidence: 0.837555408477783
01:08:08.038 --> 01:08:11.400 going to react in the magnetic field.
NOTE Confidence: 0.837555408477783
01:08:11.400 --> 01:08:12.728 Control the movements and
NOTE Confidence: 0.837555408477783
01:08:12.728 --> 01:08:14.056 direction every across subjects.
NOTE Confidence: 0.837555408477783
01:08:14.060 --> 01:08:17.057 So if you want to look at any variation
NOTE Confidence: 0.837555408477783
01:08:17.057 --> 01:08:19.412 across subjects you know it could just
NOTE Confidence: 0.837555408477783
01:08:19.412 --> 01:08:22.417 be in that it was the spider was moving
NOTE Confidence: 0.837555408477783
01:08:22.417 --> 01:08:25.298 more in one day and less on another day.
NOTE Confidence: 0.837555408477783
01:08:25.298 --> 01:08:28.378 So we want to have some control over it,
NOTE Confidence: 0.837555408477783
01:08:28.380 --> 01:08:31.044 and that's the way that we did it.
NOTE Confidence: 0.837555408477783
01:08:31.050 --> 01:08:33.381 We have actually had my two transfers
NOTE Confidence: 0.837555408477783

01:08:33.381 --> 01:08:35.379 here there just just there actually
NOTE Confidence: 0.837555408477783

01:08:35.380 --> 01:08:37.366 can see what where we wanted.
NOTE Confidence: 0.837555408477783

01:08:37.370 --> 01:08:39.040 Some more studies on transfers,
NOTE Confidence: 0.837555408477783

01:08:39.040 --> 01:08:41.110 but the problem is is just
NOTE Confidence: 0.837555408477783

01:08:41.110 --> 01:08:42.930 trying to get control over.
NOTE Confidence: 0.837555408477783

01:08:42.930 --> 01:08:43.832 In attic.
NOTE Confidence: 0.837555408477783

01:08:43.832 --> 01:08:46.538 And we're not quite sure would
NOTE Confidence: 0.837555408477783

01:08:46.538 --> 01:08:49.009 function in a magnetic field.
NOTE Confidence: 0.837555408477783

01:08:49.010 --> 01:08:51.440 It might just freaked him out.
NOTE Confidence: 0.837555408477783

01:08:51.440 --> 01:08:55.340 So we we try to keep it as real and realistic
NOTE Confidence: 0.837555408477783

01:08:55.340 --> 01:08:59.309 and the Irbe originally rejected it in.
NOTE Confidence: 0.837555408477783

01:08:59.310 --> 01:08:59.639 Cambridge,
NOTE Confidence: 0.837555408477783

01:08:59.639 --> 01:09:01.613 but then they think they once
NOTE Confidence: 0.837555408477783

01:09:01.613 --> 01:09:03.269 they the wire be wasn't.
NOTE Confidence: 0.837555408477783

01:09:03.270 --> 01:09:04.590 They didn't reject it
NOTE Confidence: 0.837555408477783

01:09:04.590 --> 01:09:05.910 because of this transfer.

NOTE Confidence: 0.837555408477783
01:09:05.910 --> 01:09:07.962 The last thing big thing was
NOTE Confidence: 0.837555408477783
01:09:07.962 --> 01:09:10.515 that I was lying to the subjects.
NOTE Confidence: 0.837555408477783
01:09:10.515 --> 01:09:12.798 I I was not allowed to say you're
NOTE Confidence: 0.837555408477783
01:09:12.798 --> 01:09:14.410 going to see a real translor.
NOTE Confidence: 0.837555408477783
01:09:14.410 --> 01:09:16.210 I just said on the screen you're going
NOTE Confidence: 0.837555408477783
01:09:16.210 --> 01:09:18.085 to see a tarantula moving closer to
NOTE Confidence: 0.837555408477783
01:09:18.085 --> 01:09:19.910 your foot that's not lying to them.
NOTE Confidence: 0.837555408477783
01:09:19.910 --> 01:09:21.667 It is lying, but it's not really.
NOTE Confidence: 0.837555408477783
01:09:21.670 --> 01:09:22.966 Because they were seen that ranch,
NOTE Confidence: 0.837555408477783
01:09:22.970 --> 01:09:25.340 I just didn't tell him if it was real or not,
NOTE Confidence: 0.837555408477783
01:09:25.340 --> 01:09:27.284 but this is what I mean in the beginning.
NOTE Confidence: 0.837555408477783
01:09:27.290 --> 01:09:28.580 It was sort of like this.
NOTE Confidence: 0.837555408477783
01:09:28.580 --> 01:09:30.560 You have to get the pro club down and.
NOTE Confidence: 0.837555408477783
01:09:30.560 --> 01:09:32.639 And I think we had one person
NOTE Confidence: 0.837555408477783
01:09:32.639 --> 01:09:33.530 in psychology student,
NOTE Confidence: 0.837555408477783

01:09:33.530 --> 01:09:35.066 and you never want you never
NOTE Confidence: 0.837555408477783

01:09:35.066 --> 01:09:36.510 want to scan psychologist years
NOTE Confidence: 0.837555408477783

01:09:36.510 --> 01:09:37.990 because they question everything.
NOTE Confidence: 0.837555408477783

01:09:37.990 --> 01:09:39.170 Yeah, we're terrible subjects.
NOTE Confidence: 0.837555408477783

01:09:39.170 --> 01:09:39.766 Yeah, subjects.
NOTE Confidence: 0.837555408477783

01:09:39.766 --> 01:09:42.146 I don't know what the hypothesis is that
NOTE Confidence: 0.837555408477783

01:09:42.146 --> 01:09:44.218 this study you know, like, no don't.
NOTE Confidence: 0.837555408477783

01:09:44.218 --> 01:09:45.994 We don't want you to think.
NOTE Confidence: 0.837555408477783

01:09:46.000 --> 01:09:47.635 Just do it.
NOTE Confidence: 0.837555408477783

01:09:47.635 --> 01:09:48.180 Does
NOTE Confidence: 0.845884501934052

01:09:48.180 --> 01:09:50.427 anyone else have any anymore questions I
NOTE Confidence: 0.845884501934052

01:09:50.427 --> 01:09:53.115 could I could keep talking to you all day?
NOTE Confidence: 0.845884501934052

01:09:53.120 --> 01:09:55.346 Does anyone else have any anything
NOTE Confidence: 0.845884501934052

01:09:55.346 --> 01:09:57.450 that they'd like to ask him?
NOTE Confidence: 0.845884501934052

01:09:57.450 --> 01:10:00.523 Maybe you could raise your hands or
NOTE Confidence: 0.845884501934052

01:10:00.523 --> 01:10:02.908 just unmute yourselves and speak up.

NOTE Confidence: 0.877907633781433
01:10:02.910 --> 01:10:09.320 OK.
NOTE Confidence: 0.832282304763794
01:10:09.320 --> 01:10:12.474 I have a quick question so
NOTE Confidence: 0.832282304763794
01:10:12.474 --> 01:10:14.578 I was very interesting.
NOTE Confidence: 0.832282304763794
01:10:14.580 --> 01:10:16.504 You're talking was fantastic
NOTE Confidence: 0.832282304763794
01:10:16.504 --> 01:10:20.070 and so you talked about the the
NOTE Confidence: 0.832282304763794
01:10:20.070 --> 01:10:23.005 connectivity between the Pfc stratum.
NOTE Confidence: 0.832282304763794
01:10:23.010 --> 01:10:25.650 And like active escape conditions. So
NOTE Confidence: 0.873662292957306
01:10:25.650 --> 01:10:27.850 I was curious whether some
NOTE Confidence: 0.873662292957306
01:10:27.850 --> 01:10:30.155 of the same circuitry that's
NOTE Confidence: 0.873662292957306
01:10:30.155 --> 01:10:32.942 involved in working memory is also
NOTE Confidence: 0.873662292957306
01:10:32.942 --> 01:10:35.324 involved in some of this fear.
NOTE Confidence: 0.873662292957306
01:10:35.330 --> 01:10:36.650 Learning behavior, particularly
NOTE Confidence: 0.873662292957306
01:10:36.650 --> 01:10:37.970 something like extinction.
NOTE Confidence: 0.817043542861938
01:10:38.730 --> 01:10:41.306 Yeah, so for the so two questions
NOTE Confidence: 0.817043542861938
01:10:41.306 --> 01:10:43.348 because the first part is yes.
NOTE Confidence: 0.817043542861938

01:10:43.350 --> 01:10:44.766 You see the join,
NOTE Confidence: 0.817043542861938

01:10:44.766 --> 01:10:45.828 particularly on avoidance,
NOTE Confidence: 0.817043542861938

01:10:45.830 --> 01:10:48.670 which is what we're kind of looking at.
NOTE Confidence: 0.817043542861938

01:10:48.670 --> 01:10:51.848 A bit of a Joule. Imagine a safety.
NOTE Confidence: 0.817043542861938

01:10:51.848 --> 01:10:54.178 Question experiment is that we
NOTE Confidence: 0.817043542861938

01:10:54.178 --> 01:10:57.276 kind of look into the neuber
NOTE Confidence: 0.817043542861938

01:10:57.276 --> 01:10:59.356 between escape and avoidance.
NOTE Confidence: 0.817043542861938

01:10:59.360 --> 01:11:02.510 You're making an avoidance response.
NOTE Confidence: 0.817043542861938

01:11:02.510 --> 01:11:04.290 Which is really related to
NOTE Confidence: 0.817043542861938

01:11:04.290 --> 01:11:05.714 an escape response later,
NOTE Confidence: 0.817043542861938

01:11:05.720 --> 01:11:07.670 so it's annoyed between those two
NOTE Confidence: 0.817043542861938

01:11:07.670 --> 01:11:10.076 and what you see is the animal
NOTE Confidence: 0.817043542861938

01:11:10.076 --> 01:11:12.146 that shows that the stratum is
NOTE Confidence: 0.817043542861938

01:11:12.146 --> 01:11:13.988 involved in avoidance behavior.
NOTE Confidence: 0.817043542861938

01:11:13.990 --> 01:11:16.598 We bout to the second power working memory.
NOTE Confidence: 0.817043542861938

01:11:16.600 --> 01:11:18.814 Yes, I think it is just this is Jose

NOTE Confidence: 0.817043542861938
01:11:18.814 --> 01:11:21.304 and he thinks that the higher level
NOTE Confidence: 0.817043542861938
01:11:21.304 --> 01:11:23.440 cognitive process is really important.
NOTE Confidence: 0.817043542861938
01:11:23.440 --> 01:11:26.086 Part is the working memory system.
NOTE Confidence: 0.817043542861938
01:11:26.090 --> 01:11:29.044 So absolutely I think it is important
NOTE Confidence: 0.817043542861938
01:11:29.044 --> 01:11:31.300 because it's there where we're,
NOTE Confidence: 0.817043542861938
01:11:31.300 --> 01:11:32.234 you know,
NOTE Confidence: 0.817043542861938
01:11:32.234 --> 01:11:34.569 processing information online and I
NOTE Confidence: 0.817043542861938
01:11:34.569 --> 01:11:37.509 would have to do the experiments to
NOTE Confidence: 0.817043542861938
01:11:37.509 --> 01:11:40.410 be able to look at these effects.
NOTE Confidence: 0.817043542861938
01:11:40.410 --> 01:11:43.448 We talked a little bit about him,
NOTE Confidence: 0.817043542861938
01:11:43.450 --> 01:11:46.318 similar experiments to look at the
NOTE Confidence: 0.817043542861938
01:11:46.318 --> 01:11:48.230 relationship between working memory
NOTE Confidence: 0.817043542861938
01:11:48.300 --> 01:11:51.126 and some of the decision somewhere
NOTE Confidence: 0.817043542861938
01:11:51.126 --> 01:11:52.539 completely different paradigm
NOTE Confidence: 0.817043542861938
01:11:52.539 --> 01:11:54.786 with Thomas Love is in my lap.
NOTE Confidence: 0.817043542861938

01:11:54.790 --> 01:11:56.656 We were doing a lot these
NOTE Confidence: 0.817043542861938

01:11:56.656 --> 01:11:57.589 experiments online now,
NOTE Confidence: 0.817043542861938

01:11:57.590 --> 01:11:59.456 so we're just going to behavior,
NOTE Confidence: 0.817043542861938

01:11:59.460 --> 01:12:01.182 but it would be sort of interesting
NOTE Confidence: 0.817043542861938

01:12:01.182 --> 01:12:03.397 to see if we can predict the
NOTE Confidence: 0.817043542861938

01:12:03.397 --> 01:12:05.172 working memory ability and capacity
NOTE Confidence: 0.817043542861938

01:12:05.172 --> 01:12:06.299 influences these prices.
NOTE Confidence: 0.817043542861938

01:12:06.300 --> 01:12:08.498 And we did do one study with.
NOTE Confidence: 0.817043542861938

01:12:08.500 --> 01:12:08.806 See,
NOTE Confidence: 0.817043542861938

01:12:08.806 --> 01:12:10.948 that's what 7 Tim Dalglish where we
NOTE Confidence: 0.817043542861938

01:12:10.948 --> 01:12:13.115 looked at working memory training in
NOTE Confidence: 0.817043542861938

01:12:13.115 --> 01:12:15.347 the ability to regulate in appraise
NOTE Confidence: 0.817043542861938

01:12:15.416 --> 01:12:17.396 your threats and the environment.
NOTE Confidence: 0.817043542861938

01:12:17.400 --> 01:12:19.794 And we found that that that not
NOTE Confidence: 0.817043542861938

01:12:19.794 --> 01:12:21.988 quite sure they all the brain
NOTE Confidence: 0.817043542861938

01:12:21.988 --> 01:12:23.808 training stuff is held up,

NOTE Confidence: 0.817043542861938

01:12:23.810 --> 01:12:27.005 but we did show in effect there of that.

NOTE Confidence: 0.817043542861938

01:12:27.010 --> 01:12:29.404 So yeah I think what can we just play

NOTE Confidence: 0.817043542861938

01:12:29.404 --> 01:12:31.933 an important role but again we've

NOTE Confidence: 0.817043542861938

01:12:31.933 --> 01:12:34.128 not tested that directly ourselves.

NOTE Confidence: 0.807112872600555

01:12:38.660 --> 01:12:39.750 Anymore questions.

NOTE Confidence: 0.793975710868835

01:12:43.750 --> 01:12:45.212 Well, thank you again Dean.

NOTE Confidence: 0.793975710868835

01:12:45.212 --> 01:12:46.940 Thanks for getting up early in

NOTE Confidence: 0.793975710868835

01:12:46.999 --> 01:12:48.659 joining us and thanks for

NOTE Confidence: 0.793975710868835

01:12:48.659 --> 01:12:49.655 sharing your beautiful

NOTE Confidence: 0.793975710868835

01:12:49.660 --> 01:12:50.852 work. Yeah thanks Phil.

NOTE Confidence: 0.793975710868835

01:12:50.852 --> 01:12:53.276 And yeah I'm going to do some more

NOTE Confidence: 0.793975710868835

01:12:53.276 --> 01:12:55.271 coffee and going to keep you want

NOTE Confidence: 0.793975710868835

01:12:55.271 --> 01:12:57.427 me ioffer the politics and given

NOTE Confidence: 0.793975710868835

01:12:57.430 --> 01:12:59.000 the talk, I wasn't sure

NOTE Confidence: 0.793975710868835

01:12:59.000 --> 01:13:00.570 whether there was an approach.