

KWANTUM
Episode 3: Analytics

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CABLE NEWS INTRO MUSIC.

1. CINDY: TONIGHT: There may be an energy crisis, but we've got plenty of energy here... for debate! Welcome to *Both Sides with Cindy Lee*, with me, Cindy Lee. Joining me on my left is Emmy Gorgon, a physician who's worked on large scale fusion reactors or something at Freedom University. Emmy believes her "rEsEaRcH" holds the "kEy" to safely replicating expired "KuJu" parts.
2. ELLIE: Uhm, my name is actually--
3. CINDY: On the right side opposing her is the people's champion, "Last Coal Power Lobbyist" and all-around great guy, Madhur Bachchan.
4. MADHUR: Great to be here, Cindy. How are my godchildren?
5. CINDY: They can't wait to see you at Thanksgiving, Madhur. Now, you detail in your latest book, *Once and Future Coal*, that it's time to shake off these Kuju pests and fire up the old coal power plants again.

EMOTIONAL PIANO MUSIC.

6. MADHUR: That's right, Cindy. It's time to Make America Coal Again. Like the Rocky Mountains from which it comes, coal is the backbone of our once-great country. Let's go back to the days of backyard B-B-Qs, with real Texan beef, and honest, blue-collar, sixteen-hour workdays.

MUSIC STOPS.

7. CINDY: Delightful! I'll bring the ribs. Now Effie, you claim you can replicate Kuju parts, but dozens have died trying to open their Kuju's core. On a scale of 1-10, how much better do you think you are than the dearly departed patriots?
8. ELLIE: I'm-- that's not-- First of all, my name is Dr. Ellie Gagnon, and I'm a physicist, not a physician. If I can get access to Fenton Kwan's early ejectors, then yes, replication is possible. Opening your Kuju's core will always be dangerous, but my experience with fusion reactors makes me one of about two people in the world who could actually--
9. CINDY: So what I'm hearing here, Alley Canyon--
10. ELLIE: Ellie. Gagnon. Doctor.
11. CINDY: -- is that you think you're better than everyone else. Madhur, do you think you're better than everyone?

EMOTIONAL PIANO MUSIC.

12. MADHUR: I'm just speaking up for the average Joe, who's lost a finger or two to these robo-mutts.
13. ELLIE: Who's lost a finger? No one loses a finger!
14. MADHUR: Anecdotal! Now let me tell you a story. Back in the '40s, there was a Kuju-caused blackout that left 89% of Europe without power for forty-five whole minutes. They were powerless! And all this because a few Kuju had their feelings hurt. COAL HAS NO FEELINGS! We need to fire up the plants, connect them back to the grid! Fenton Kwan's fusion bots are ticking time bombs, they always have been, always will be! End of sentence, period, argument over!

MUSIC STOPS.

15. ELLIE: If I may, responsible Kuju--
16. MADHUR: Argument back on, sweetie!

MUSIC RESUMES.

17. MADHUR (CONT.) A friend of mine calls me this morning; he's just been diagnosed with pre-cancer... He's getting rid of his Kuju and moving to a commune away from these emissaries of death! Who's to say they won't explode at random?
18. CINDY: Hold me, I'm scared!
19. ELLIE: Excuse me, I'm a scientist--
20. MADHUR: (*sad trombone sound*)
21. ELLIE: And you can't possibly think this buffoon is--
22. CINDY: Both Sides!
23. MADHUR: Yeah, can it, Dr. Strangelove!
24. ELLIE: (*exasperated grunt*)

MAIN TITLE THEME.

25. TITLE: You're listening to Kwantum, an audio miniseries from Andres Wong and Highly Scientific Productions.
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MAIN TITLE THEME ENDS.THE BROADCAST PLAYED THROUGH
LAPTOP SPEAKERS.

26. CINDY: *(distorted)*

That's extraordinary! Tell me more.

27. MADHUR: *(distorted)*

Mutations! Humanity's next generation will have to live underground. They won't be able to handle sunlight and they'll hide their lizard genitalia from the ape-like creatures coming out of the caves, who were created from that yogurt that everyone *said* wouldn't turn you gay, but--

28. ELLIE: Turn it off, Marnie.

BROADCAST TURNS OFF.

29. NARRATOR: Marnie, a Gen 2 Kitty Kuju, closes the KwanTube projection, and limps across the kitchen table with a look of concern for her owner, Dr. Ellie Gagnon, who has played this clip-- nine times now? Are you kidding me? Dude.

30. MARNIE: Video playback terminated. (*kindly*) Maybe you should stop replaying it?

31. ELLIE: I need a drink.

32. MARNIE: There's some ginseng cola in the fridge. I'd get it for you, but...

33. ELLIE: *(gentle)*

We'll get your leg fixed when I can find the parts.

FRIDGE DOOR OPENING. SODA CAN
OPENING. THEN, A KNOCK ON THE DOOR.

34. ELLIE (CONT.): ... who the hell?

35. YING: (off)

Hello?

36. LUNA: (off)

Look at all these letters!

37. YING: (off)

Luna, don't touch!

DOOR OPENS, CHAIN LOCK RATTLES.

38. ELLIE: Who are you?

39. YING: Um, hi. I'm Ying, this is Luna, you're-- wow, your hair is just as pretty as on TV.

40. ELLIE: Great. I'm not doing interviews, signing petitions, taking selfies, entertaining new religious deities, or debating *anyone*. Please leave.

41. YING: Oh, we're not-- look, I promise we're not just a couple of randos--

42. ELLIE: Oh look, the door is closing all on its own.

43. LUNA: Freddie says hello!

44. ELLIE: You were at the Off-Off Grid?

45. YING: Sure were.

46. LUNA: We almost got murdered by crazy hippies!

47. ELLIE: Please tell me you took a decontamination shower.

48. YING: We both did.

49. LUNA: *(resentful growl)*
50. ELLIE: And... Freddie's still there?
51. YING: Yes...
52. LUNA: But he seemed like a tough cookie!
53. YING: And he wanted to stay. We didn't just, like, abandon him to his radioactive cult family.
54. LUNA: Nope!
55. ELLIE: He didn't want to come with me either. Crazy family is still family. Come in. How did you find me?
56. YING: The coal guy posted your address on Reddit.
57. LUNA: Where should I put all this mail?
58. ELLIE: Give it to Marnie, she'll shred it.
59. LUNA: Ooh, this one says "DIE" on it... in nine languages! And this one has an angry face!
60. MARNIE: I'll take that.

SHREDDER NOISES.

61. ELLIE: So hold on, why were you at the compound?
62. YING: We were trying to steal back Kuju parts they took from our local dealer.
63. ELLIE: Mm. They fucked my supply too. That's why I went. I take it you found the shed?
64. YING: Freddie showed us.

65. ELLIE: Nice kid.
66. YING: We couldn't salvage anything, but we were hoping that... maybe you did?
67. ELLIE: Ha! If I did, I'd be at the lab with grant money pouring out of my ears.
68. YING: (*defeated*)

Right.
69. LUNA: Ooh, a postcard! (*clears throat*) "Dear Dr. Gangnam, you are an elitist science Nazi and--"
70. MARNIE: Nope.

SHREDDER NOISES.

71. LUNA: Aww.
72. ELLIE: You know, it's worse than one lone outpost of nutbars. There's an Off-Off Grid compound outside every major city, and they're all holding little nuclear fire-cleansing ceremonies with every Kuju they can get their hands on. Supplies are scarce all over.
73. YING: That's insane. How are they coordinating that? They don't even have phones.
74. MARNIE: Carrier pug.
75. YING: Come again?
76. ELLIE: It doesn't matter. If I could just crack replication, I could solve this whole supply problem. But trying to find a Gen 1 core to study has gone from darn tricky to impossible.

77. YING: Wait wait. You need a Gen 1 core and then you can make new parts?
78. ELLIE: *Good* new parts. And yes.
79. NARRATOR: Ying and Luna exchange raised-eyebrow glances. Impressive, since Luna doesn't even have eyebrows.
80. LUNA: Does the core need to be operational?
81. ELLIE: I mean, ideally. But most Gen 1 Kujus went catatonic once their ejectors failed, and ended up in landfill. They're exceedingly rare, and the few people who own them aren't exactly leaping to pry open--
82. YING: Would you like to study my Granny's Cheeseburger?
83. ELLIE: ...What?

SOUNDS OF A CITY STREET. MOTOR
RICKSHAW ENGINE.

84. NARRATOR: With some extra context, Ellie decides that she would indeed like to study Granny's Cheeseburger. Ying hails a rickshaw, whose driver has some educated opinions about the energy crisis.
85. DRIVER: What I'm saying is, nuclear power is the backbone of this nation. Fenton Kwan's fusion bots are diseased, they're, uh, emmi-mysteries of death.
86. LUNA: Just drive, please!
87. ELLIE: So look, I know you're keen to help your grandmother-- and to be honest *I'm* really fucking excited!-- but I have to warn you, opening up a core

compartment is risky business. I hope you have home insurance.

88. YING: Nope. But if you're going to help Cheeseburger stay online a bit longer *and* give us a new synthesized ejector as thanks, that's worth the risk.
89. ELLIE: It might take a while for that second part, but I promise, it's yours, and it'll be the best ejector you've ever seen.
90. NARRATOR: Reminder: they're talking about robo-buttholes.
91. YING: Why are *you* doing it? You wanna corner the market on Kuju parts?
92. ELLIE: ... You know I met him once?
93. YING: Who?
94. ELLIE: Fenton Kwan?
95. LUNA: Whaaaaat?!
96. YING: Seriously?!
97. DRIVER: The chief emmi-mystery of death?!
98. ELLIE: Ears on the road, bud. I grew up in the Kwan Orphanage of Japan, and he was passing through Calgary, so he came to visit us while he was there.
99. LUNA: Calgary is in Alberta, not Japan.
100. ELLIE: The Japanese orphanages did so well he franchised out to other countries and kept the name.
101. YING: What was he like?

102. ELLIE: Important. Busy. Smelled great. He told me to study hard, and someday I could work with him at Kwantum. He even gave me Marnie to help with school.
103. NARRATOR: Marnie peeks out of Ellie's purse, all cute n' shit.
104. MARNIE: I'm filled with every scientific textbook ever written. And some art history. Ellie likes art.
105. ELLIE: We both do, don't we Marnie?
106. YING: So he's, like, a big deal to you, huh?
107. ELLIE: I've worked on large reactors, and the mechanisms are massive, and massively expensive. Fenton Kwan found a way to simplify and shrink down things that can't possibly be simplified. He's more than a genius. He's a revolutionary. Once I understand his reactors I'll be able to help billions of people, like he did, only better. We all need clean energy.
108. NARRATOR: Man, I wish I had someone who'd look at me the way Ying is looking at Ellie right now.

RICKSHAW STOPS.

109. YING: Oh, we're here. Let's get to work.

FOOTSTEPS AWAY.

110. DRIVER: Hey, who's gonna pay me?
111. LUNA: Who can say? It's an emmi-mystery!

GRANNY'S MEDICAL MACHINES. QUICKLY
PATTERING KUJU FEET.

112. NARRATOR: Upstairs, they find Granny awake and scowling, and a jittery Cheeseburger sprinting from bed to machine to bed and back again, adjusting everything by millimetres. When he sees Ying he comes to immediate twitchy attention. Not his usual.
113. CHEESEBURGER: (*fast*)
- Hi there how are you all, all of you, may I ask if you have my new ejector we have been doing well thank you for asking, the ejector is here? Who are you lady?
114. LUNA: (*whisper*)
- I don't think Cheeseburger is handling the ejector bypass very well.
115. CHEESEBURGER: (*fast*)
- Granny's doing okay she has not been resting as much as she usually does so that worries me a little I changed her bedding and then I had some energy left so I changed it again!
116. YING: Oh my god. I'm so sorry Granny. How are you doing?
117. GRANNY: (*mutter*)
118. CHEESEBURGER: (*fast... just keep up the fast for a while*)
- She is very tired and annoyed. She did not say why she is annoyed.
119. GRANNY: (*mutter*)
120. CHEESEBURGER: She is very happy to meet your friend.

121. ELLIE: Hi, I'm Dr. Gagnon. This is Marnie.
122. MARNIE: Hi there.
123. YING: Dr. Gagnon is here to... help with the ejector.
124. CHEESEBURGER: (*fast*)

Wonderful! Excellent! Dee-viiiine!
125. ELLIE: I'll need to take Cheeseburger away from his duties to run some scans, and from what Ying's told me it'll take a little longer than usual. Luna, could you run the life support system for a while? I need Marnie in the shop to help me.
126. LUNA: The system is unfortunately not compatible with my wireless power capabilities. It was built strictly for use with Gen 1 Kujus.
127. YING: Well, hold on. I *could* Frankenstein you up to the system with a jerry-rigged adapter.
128. LUNA: That sounds unpleasant and I would prefer not to!
129. YING: Do you have another option?
130. LUNA: ... I do not.
131. ELLIE: It would be a huge help, Luna, but if you really don't want to--
132. LUNA: It is all right. I will get Yings's jerry-rigging kit.
- LUNA PATTERS AWAY.
133. NARRATOR: As Luna scurries downstairs, Ying kneels down to Cheeseburger so she can make eye contact, which isn't easy because he's literally vibrating.

134. YING: Listen, Cheese. Part of this deal is that we open your core so Dr. Gagnon can examine it, okay?
135. CHEESEBURGER: Is it safe?
136. YING: It'll... be as safe as we can make it. We'll try to go fast.
137. CHEESEBURGER: Let me speak with Granny first I need to talk to Granny.
138. YING: Of course, take your time.
139. NARRATOR: Cheeseburger leaps up on the bed and he and Granny mutter back and forth. Ying notes how, even though he's buzzing like an overloaded washer, he still places one of his paws tenderly on Granny's arm.
140. YING: *(low)*
- This is safe, right? Cheeseburger generates Granny's power, but he's also the only one who really knows how to take care of her.
141. ELLIE: *(low)*
- What about you?
142. NARRATOR: Yeah Ying, what about *you*?
143. YING: *(low)*
- That's not the point. Will this work?
144. ELLIE: *(low)*
- I can do this.

LUNA'S FEET RETURNING.

145. NARRATOR: Luna trots back in, Ying's toolkit in her mouth.

146. LUNA: (*mouth full*)

Hee oo oh!

147. YING: Thanks Luna. Ready?

148. LUNA: Frankenstein away.

CLINKING OF TOOLS AND WIRES.

149. YING: Okay. I'm just going to wire you in here and... here.

SPARKING.

150. LUNA: Ow!

151. YING: I thought Kujus don't feel pain.

152. LUNA: Oh really, then what am I--

SPARKING.

153. LUNA (CONT.) OW!

154. YING: (*sincere*)

Sorry, sorry, sorry. How's this?

155. LUNA: (*tense*)

Bearable.

156. CHEESEBURGER: You've got this Luna! You can do it you can you can
I can do this too!

157. LUNA: Thank you, Cheeseburger. Come back in one piece, please.

158. CHEESEBURGER: I am ready let's goooo!!

159. YING: Okay. Well, my, uh, workshop's this way.

FOOTSTEPS LEAVING.

160. LUNA: So... Cheeseburger tells me you like soap operas?

161. GRANNY: (*mutter*)

162. LUNA: (*cheery*)

I cannot understand you!

YING'S WORKSHOP, TOOLS CLINKING
AND SHUFFLING ON THE TABLE.

163. NARRATOR: In the workshop, Ying gets Cheeseburger set on the workbench as Ellie dumps out a bag of diagnostic tools.

164. ELLIE: Marnie, notation mode, please.

BEEP BEEP OF A RECORDER.

165. YING: Time to power down, Cheese. ... You're quiet. Are you feeling okay?

166. CHEESEBURGER: A little nervous. But I believe in you. Good night, Ying.

167. YING: See you soon, Cheeseburger.

CHEESEBURGER BOOTING DOWN.

168. ELLIE: I could really go for one right now.

169. YING: What?
170. ELLIE: A cheeseburger. I always get hungry when I try something new. Damn this is exciting.
171. YING: Wait, something *new*? You've never done this before?
172. ELLIE: I've done most of it. Just not the part where I open the core.
173. YING: The part that *kills* people?
174. ELLIE: Yeah. But those people weren't nuclear physicists with three PhDs. Hah.
Okay. Let's look inside the chassis at the power compartment first...

SCREWDRIVER SQUEAKING, PANEL
CLUNKING OPEN.

175. YING: I bypassed the ejector here.
176. ELLIE: I see that. The core compartment is badly eroded; bypassing probably didn't help. How did you keep him running this long?
177. YING: Just standard maintenance and a few workarounds. I had to get creative with, you know, Granny's life on the line.
178. ELLIE: Honestly, pretty impressive for a self-taught tinkerer. Well done.
179. NARRATOR: Ying blushes redder than a Santa suit.
180. YING: Uh... thanks. (*chuckle*) You're not bad yourself.
(*low*) Shut up, Ying.

181. ELLIE: Reinstalling the ejector now, let me do a quick scan to see if I can't-- uh oh.

182. YING: Uh oh what?

183. ELLIE: So these numbers aren't great. I don't think I can do more for this ejector than you already have. But maybe the core scan will have answers for both of us.

184. NARRATOR: Ellie picks up her screwdriver and takes a deep breath.

185. ELLIE: Here we go. Ready?

186. YING: As I'll ever be.

187. NARRATOR: Ying watches in fangirl terror as Dr. Gagnon screws open the eroded core compartment, a delicate maneuver that maybe three people have survived attempting to--

CLICK, DANGEROUS HUM.

188. NARRATOR (CONT): Oh yeah, no, that's a whole lot of freaky. The core itself is tiny but it's imposing as fuck.

189. YING: I'm glad you know what you're doing.

190. ELLIE: Don't worry, I know what I'm doing.

191. YING: That's what I said. Do you--

192. ELLIE: I said I know what I'm doing.

193. NARRATOR: A familiar blue glow fills the room. Oh, I can't watch.

194. ELLIE: Scanning the core now. Safety systems should kick in in a second.

HUM INTENSIFIES.

195. ELLIE (CONT.): Maybe a few seconds.

HUM INTENSIFIES, ELECTRICITY SPARKS.

196. YING: (*yelling a bit to be heard*)

Have they kicked in?! It doesn't sound like they've kicked in!

197. ELLIE: (*also yelling*)

They have to... oh my god...

INTENSIFIES.

198. ELLIE (CONT.): There aren't any safeties!

199. YING: None?! Close it back up!

200. ELLIE: No! I need those readings!

201. YING: How much time do we have?

202. ELLIE: Ten seconds!

203. YING: For real?!

204. ELLIE: I hope so!

205. YING: Fuuuuck!

SPARKS AND CRACKLES OVER THE HUM.

206. ELLIE: Closing core compartment in three... two--

207. YING: One-zero-close-it-close-it-close-it!!

CCU SNAPS CLOSED AND THE SPARKING
AND HUMMING ABRUPTLY STOP. YING
AND ELLIE BREATHING HEAVILY.

208. ELLIE: (*calm, but breathing heavily*)
- Marnie, notation mode off. Are you okay?
209. MARNIE: (*dazed*)
- Uh. Yeah. Are you?
210. NARRATOR: Ellie picks up her screwdriver, and starts replacing the screws of the core. She's weirdly calm.
211. ELLIE: ... Well, I got the scan.
212. YING: And we almost got nuked! What was that?!
213. ELLIE: I wasn't expecting there to be no safeties.
214. YING: Well how did they go missing? *I've* never opened his core!
215. ELLIE: I don't know!
216. YING: Okay. So what happens to Cheeseburger without safeties?
217. ELLIE: Hypothetically he could get by without them for years. But eventually the erosion will degrade his system to the point that it can't contain the energy of the core, at which point... he'll explode.
218. YING: *Explode?*
219. ELLIE: Violently. ... We can't fix him.

220. YING: ... How long does he have? How long does Granny have?
221. ELLIE: Not long.
Oh my god. This must be why the other Gen 1s went catatonic! They shut down all non-essential functions to keep themselves stable. The owners throw them out, and no one notices when they go boom in a landfill.
222. YING: Cheeseburger isn't catatonic, though.
223. ELLIE: "Standard maintenance and a few workarounds."
Like I said, well done. But at this point, I'd give him a few days at best.
224. YING: Shit.
225. NARRATOR: ... Nobody moves. There's still something hanging unsaid. Ellie picks up Marnie and moves her to the workbench, closer. Ellie's not going to say it. Ying is.
226. YING: Did Kwan... know about this when he sold them?
227. ELLIE: (*unconvincing laugh*) This is Fenton Kwan we're talking about. You really think he'd sell thousands of devices that were going to explode at a certain age?
228. YING: If he had, what do you suppose he would do when the Kujus started to age out?
229. ELLIE: He'd... run away.
230. MARNIE: He'd disappear.

END CREDITS THEME.

231. TITLES:

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Kwantum is created by Andres Wong. Episode 3: Analytics, written by Samuel Smith, with Becca Friesen, Kira Hall, and Mitchell Rathgeb, and Andres Wong.

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And you, you beautiful listeners, thank you. Thank you for plucking our story out of the great sea of podcasts and putting it in your ears. We appreciate you so so much, and if you are digging the show, we'd extra appreciate if you told all your pals how much you like it, or if you shared us on your social feeds, which are sort of like pals.

See you soon for Episode 4: Embedded.