

Kate Mullen: Kate's linear and non-linear accidents in a multi dynamics ultra-fast circle-cycling city

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Narrator: Once upon a time in a romantic, peaceful small city of Boston, little innocent (but these times would be over soon...) American girl was facing the end of her studies and couldn't help but wondered: How does the big world look like in real? She's done what any highly educated glamorous American girl would do: she searched the net, looked at the pictures, listened to the stories of older, wiser and life-experienced fellow academics. And stories they told. Full of amazing adventures, brilliant science, interesting conferences... But one of the most recurring stories, the most scary one, involved mystical creatures known as Europeans. Our heroin, brave and curious like any self-respecting scientist should be, really wanted to see those monsters for herself. So after a bit more surfing she came across an invitingly-looking ad for a PhD position in biophysics.

Kate: Hm, I have no idea what biophysics actually is, but if they have a PhD then they have to be civilized! And those Dutch boys I saw on internet; they do look seriously interesting and really worth some researching. Besides, I really need to get out of here! My empire got possessed by an evil vegetarian hater! And what better place to go than Amsterdam: the truly free city! Finally I can have all those wild sex parties and try all the drugs available!!! And wait for the history to turn. I really believe in woman power! The time will come that Hillarious Clinton is going to be the first female US president.

Narrator: So she packed some advice, warnings, her sandals and beloved laptop and off she went across the ocean to beautiful Amsterdam.

Kate is always in sandals with no socks; always with a laptop, always losing keys

Kate arrives at the office (with her laptop that she carries everyday and everywhere).

Ivo van Stookkuuuuuuuuum is there working..

Kate: good morning (*she doesn't speak Dutch yet*). I am Kate. Your new student. I am looking for my room...

Ivo: Goedemorgen Kate. This is your room! But...you are late... it's already 9:03... Anyway how are you today? Are you ready and impatient to start your project with energy?

Kate: Yes, I came here to learn all the mysteries of “non-linear modeling of ultrafast spectroscopic data or something”.

Ivo: goed, goed. Here I wrote down in this ascii file what you have to do today.

He shows a roll that he unrolls or falls down.

Ivo: I am a bit worried as I have to go for my classes now. I am teaching and I am very busy. But don't worry-I will be back in two hours and 14 minutes. And I will then have exactly full 7 minutes to explain you everything.

Kate is looking at the list and, finally, she takes it and starts working with her headphones and music on.

Ivo goes back to work and suddenly he remembers something and goes to Kate.

Ivo: Ah Kate, there is something I have to give you. Here, this is the key of the office, this is the key of our sanctuary, keep it always with you, and, never, never lose it. This would be fatal!!!!

Kate: oh, don't worry. I never lose the keys!

Narrator: Kate settled down nicely in the always so welcoming international environment of biophysics group. She easily got on with her scientific tasks and social pleasantries and even got herself an excellent apartment in one of the most posh parts of the city.

Kate and a friend sitting over vegan koffie verkeerd with a soya milk

Kate: Oh you know? I have to leave my beautiful apartment in Rivierenbuurt!

Friend: Why? What happened? You liked it so much?

Kate: Well yes; but after we put down the floor last winter my landlord decided to install the heating so it will be too expensive for me to stay there..

Friend: oh, I see... Look, I have a friend whose boyfriend knows this girl who knows this guy whose third cousin's friend knows someone whose having a place to rent. It's actually very nice. Close to the Westerpark. Recently renovated and totally furnished but I think not so expensive...And the landlord is super friendly and easy going.

Kate: Echt waar? That would be super goed! Can you give me his number?

Kate (Calling): Goede dag! Ik ben op zoek naar een woning. I've heard from a friend that you are looking for someone?

Landlord: Jaaaaaaa, I have a gezellig echt leuke place, best you could get for little money.
So good offer that you just have to pay only 6 months in advance!
I'm right now in jail but we can make the contract very soon if you send me a metal saw.

Kate: Greaaaaaaat, super goed!

Kate arrives there...in the end she needs a saw to cut some wood to get a floor. Luckily our friendly Toh is there to help with that hell of a job.

The group talk

Poor student giving talk :

Rienk :

John :

Marloes :

Ivo :

Kate :

+audience sitting around, drinking coffee, staring holes into the air ...

Narrator: The Amsterdamse charming biophysics group is known for its very friendly way of sharing the ongoing effort in scientific progress. And on any given Wednesday at 9:45 sharp + some 20-30mins delay all group members gather readily for a group meeting to ask and be asked questions about their cutting edge research with full attention. Kate truly loved this family-like gatherings that taught her a lot about the art of experimental biophysics.

Student; Well, morning everybody, today I will talk about this molecule, I measured on. Here I did some global analysis... as you can see this black spectrum goes to the red one....and mh well

Rienk: This is pretty obvious...this is a conformational change for sure. Haven't you read the paper from Smith et al. from 1902....
(Grabbing stick and pointing at the screen)

Kate: sleeping on chair... *(Dressed in black clothes)*

John: *(excited (if possible..))* Yes, I think this is a nano-switch as I predicted: Very interesting, we should send it to Nature...
(Silent: with me as first author☺)

Marloes: (*very excited, too*) Yes, and as you clearly can see it makes a proton transfer from red to blue... This is very clear evidence of something important

Kate: snoring...

Ivo: Is this number in the left table, second column of your analysis significant...?

Student... well, mhhh, ahhh I used your model...

Ivo: Oh ok. I'm sure it's definitely significant.. This will change the view on this molecule within the scientific world for sure..

Kate: still sleeping, moving a bit on chair...

*While the group meeting with all its significant changing the world findings goes on...
(audience can throw paper pieces at Kate, not causing any reaction)
As the group meeting is over, Kate getting up, bosses are leaving..*

Kate: What is actually this LASER thing you are all using...can I run it under Linux?

She leaves forgetting her keys- she comes back for them ;-)

The conference in Paradise

Setting: A bunch of students meets in the coffee room

Aio 1 (Thomas)

Aio 2 (Andy)

Aio 3 (Alessandro)

Aio 4 (Tjaart)

Poor Kate (Eli/Alisa?)

Aio 1 meets Aio 2 in the coffee room:

Aio 1: Hey, have you seen the flyer of this conference on this tropical island in the Caribbean?

Aio 2: no...but what is it about...?

Aio 1: Well some "Separable nonlinear models: theory, implementation and applications in physics and chemistry" well I also don't know any of the speakers... but the hotel is 5 stars

Aio 3: hey, I just registered for this cool conference on this island, I forgot the title.. but was no problem to get the money. will just show my old poster from last year.

Aio 2: Cool, will just copy and paste something and join you...maybe we can stay another week or so after the conference...?

Aio 1: ok sound good...I'm in.

Aio 4 arriving: Hey everybody..whats going on?

Aio 1: we're just talking about this conference... you already applied?

Aio 4: Oh mhhh when is the deadline...?

Aio 3: Was 2 weeks ago.. but hey.. as always shouldn't be a problem at all if you are a little bit late..

Aio4 returns after 10min: I was already on 4 conferences this year, but I'm in...cu all there...

Poor Kate enters the room with a gratis coffee mug in her hands, and leaves her keys on a table

Poor Kate: Hi, what are you all talking about ..?

Aio 2: This conference soon. Have you registered...?

Poor Kate: Well I wanted to, but Ivo said it's not about my topic...but I can go to this 2 days workshop in Amstelveen next week...It so nice! They actually give free dutch lunch sandwiches and conference coffee.

After that she comes back running and picks up her keys forgotten in the coffee room

Kate and the nonlinear boat journey

Narrator: And so after many stimulating conferences in stimulating places and after even more informative group meetings Kate progressed in mysteries of biophysics; but she also never gave up the attempts to dig into the Dutch way of life. So besides mastering the Nederlandse taal and the art of drinking Dutch biertjes, she decided to experience the dutch ups and downs to the bone and got herself a boat. Nothing fancy, of course. Typical Dutch city-boat. The boat was beautiful and shapely and small and, let's not forget, totally environmentally friendly! Perfect opportunity to go on the grachts with friends (and biertjes) and enjoy the beauty of Amsterdam in pleasant Dutch weather without leaving any carbon footprint. There was however a one little teeny tiny catch...

The coffee room, a couple of people drinking coffee (Thomas drinking one espresso after another, Tjaart, Alessandro, Sandrine), Cosimo appears. (carrying Italian espresso machine)

Cosimo: Hey did you see this email from Kate?? (*reads e-mail:*

Dear colleagues,

I'd like to ask if any of you have time / energy / interest in helping me with a boat project --

I am going to buy a small rowboat that is currently in utrecht. there are various options to transport the boat from utrecht to amsterdam - and the one that appeals to me most is as follows:

-- tomorrow go to utrecht and help the current owner put the boat in the water)

She must have lost her mind !!!

Thomas : It wouldn't be a big surprise if she did. After all she works here with us! in this building... in this lab... with the bloody koffie machine or laser always broken! I am losing my mind every day here!

*With shaking hands he's drinking his 10th espresso one after another
Toh and Alisa enter with Kate keys that Alisa found in the ladies toilet.*

Cosimo: Did you see the e-mail from Kate? Who can be that crazy to go to row a boat without an engine from Utrecht to Amsterdam, on the shitty canal water and with this weather?!?!?

Toh: Hmmmm.... Interesting... Some training would be useful, and it is healthy to do some exercise every now and then. I have a badminton tournament in 2 days and I had time to run only 1000 km this week so I need to practice my endurance.

Alisa: It helps releasing the pressure and stress from the lab life, you know... And who said we cannot row??

They took the train early in the morning... Around 8 am.

Kate: An adventurous rowing journey from Utrecht to Amsterdam! Isn't that exciting? According to my calculation based on a linear model, we could reach Amsterdam by evening. We even have time to take a few cups of coffee along the journey!

Alisa & Toh: Wow!!! Sounds great, and it is such a beautiful and sunny day... Let's explore the canals!

Narrator: And so on a sunny weekend, Kate, Alisa, Toh and Kate's friend, Mr. Canada jump into the boat (chair) by a river in Utrecht. The day was warm and sunny, Kate was enjoying the row immensely and refusing to give up the right of rowing, especially in front of two boys.

They had a lot of fun being the only boat without engine in Noord Holland, and were something of a local sensation, especially when crossing the Rijn canal, the widest and busiest canal in Holland.

Alisa: Oh My God!!! Do you see that enormous boat, approaching with 50 miles/h??? How we gonna survive!!! *(starts rowing backwards in panic)*

Toh: Don't worry, we are ultrafast...*(takes over the paddle and crosses the canal)*

Narrator: Kate is a strong woman. She feels unity with the Nature. She feels linearity is manifested in everything with her in control of the journey... or so she thought... 4 hours later...when Alisa, Toh and Mr. Canada were in the midst of enjoying the rowing...suddenly

Kate *(panic)*: Oh my god, the calculation is off, we won't be able to reach Amsterdam, we need to do something!

Alisa: Oh yes, if the boat had an engine, things could get better.

Kate: That is out of question, I am a environmentalist you know, I don't want to use petrol in any case!
(Then Kate wave to other boat with engine to drag the boat)

Kate: Hey hey...goede middag, nice people, could you please drag us to Amsterdam... it will be sooo kind of you???
(someone pretend to act as other boat riders)

Kate: Wow, these people are so bad, many of them don't even bother to look at a sexy woman like me when I am waving my hand at them. Hoi... goede middag...

Narrator: In the end, the joined forces of charm application by Toh and Mr. Canada managed to hitch hike two boats for the journey to Amsterdam.

Alisa: Well, they could drag us for at least half an hour more... They are still in our direction... And we still have at least 15 km to Amsterdam...
(passing boat with people pointing to the boat)

Alisa: What are you looking at? Haven't you seen 4 scientists in a boat?

Kate: Well, finally we are in Amsterdam... Thanks guys... I'm going home... it's like past midnight and my landlord will be worried if I don't show up on time...

Narrator: This was a memorable and enlightening journey. This event led Kate to a novel discovery that the boat journey in a Dutch canal is a non-linear artifact in the otherwise linear Dutch way of life, especially for the boat without an engine.

Cut

Kate and the power of yoga

Coffieroom, people sitting around during lunch time, Eli with an overfilled plate, Sandrine with lots of small boxes of fine French cuisine, Andy warming up something dodgy, Alessandro with a salad, Alisa with a tray from canteen with a huge sausage, Rudi with a jar of finest Italian mayo

Kate passes by in a hurry

Eli: Hola Kate! We are eating good stuff; I brought some super good chorizo from Spain! And Sandrine made some nice apple cake. In three variations.

Sandrine: Yeah, well you know I wasn't sure which types of apples would be better: the sweet, the sour or the Dutch one. You have to help us choose!!!

Kate: Oh I would love to. But I can't. I am very busy. And I need to finish early today because there is this new yoga place I want to try out. I've passed by their windows the other day and I saw the instructor. He definitely looks like an environmentally conscious vegan. He is so flexible. And so gorgeous! At least it seemed so through the thick Dutch glass...

And off she goes (forgetting her keys)

The next day again people sitting around during lunchtime eating; Kate passes by in a hurry

Mariangela: Hey Kate! So how did your yoga go? If it's nice I'm thinking about joining. I am totally fed up with climbing. It soooo boring; There are only Italians in the gym; talking Italian all the time and I really want to improve my Dutch. Besides the routes are too easy. They don't make any interesting 12c+ or anything. Only superboring 8a...phew!

Kate: Oh, well. It was ok; the exercises were nice and painful. But the instructor wasn't actually Dutch nor a vegan!! Can you imagine! You are a yoga instructor and only vegetarian! That's absolutely unacceptable! He was beautiful though so if he wasn't gay I could look through the fingers at his non-veganism. Well just for a while. You know just to help him to see a right way and shed all this horrible animal-related products. But I think I will drop it. So you say there are many Italians in a climbing gym? Are they pretty?

Mariangela: Oh, they are okish I suppose. I am so not interested in Italian men. They just talk all the time! But you know- they eat meat! Don't try to separate Italian macho from his pancetta!

Kate: I couldn't have a boyfriend that is not vegetarian at least! Vegan is of course my perfect candidate but I am a tolerant person! I will work hard and turn any bloody Italian carnivore into an attentive vegetarian.

Cosimo: Good luck with that. Let me know if you succeeded!. Send me an sms; or better an e-mail! I can always read it on my iPhone!

Mariangela: did I forget to mention? Italian men and their gadgets: mobiles, mopeds...

Kate: what? No bikes? That's not very environmentally friendly!

Cosimo: are you joking? A bike? How would I take a woman on a romantic date? I have to drive her around!

Kate: drive her around? What about her driving you around?

Cosimo: WHAT???? Are you crazy? That's not how we do it in Italy! The men approach the woman and take care of her. That's how it was, that's how it is, that's how it will be! And believe me it's a good way. We have a high rate of success!!!

Kate: But what about emancipation? The equality? About what women want!

Cosimo(*to himself and Mariangela, making eyes etc*): Is she talking what I think she's talking? This new American thing? F-something? Femininizm? Uff- Luckily Mariane is not American!

Kate: (*she sighs*): Hmm. Maybe I should really stick to the Dutch guys. At least they are tall and emancipated. The Italians are beautiful but with this ridiculous meat-bondage and machoism it would be a real Italian job! I don't have time for this. Ivo asked me to make another 120025 simulations. If I only could cut it down to 12000 then maybe I could give it a try.

cut

Final

Ivo with the task list in the office.

Kate: Ok, ok... (reads the last items of the list herself). This thesis takes more than estimated.. I guess it's better to cut some 200 pages, otherwise the dutch IND will force me to leave before graduation... at least they will pay my ticket back home!!

Ivo: Did you notice this dot in the middle of the graph on page 115? I am worried that something might be wrong with it...

Kate: Where, I don't see it?

Ivo: Hm... that might mean that you really need some glasses, I would suggest you to go to check your eyes, Kate! I am so worried about you...

Kate (to herself): I guess he is right, as usual. I'm wondering... do I really need to check them? Of course not in this country, where medical services and health care are like totally unacceptable. They will tell me to drink tea and to come back again in three weeks... Well, I will go home and come back anyway in three weeks! For the defence! We'll see about this dot and everything!

Narrator: After three weeks she came back, and has survived the greatest challenge in the life of every PhD student in The Netherlands – The Defence, but it seems that she has forgotten something really important, and very worrying – the pair of glasses helping to notice any nonlinearity in the otherwise nearly linear world.

The crowd gives Kate the present in a box with a label “non linear glasses”