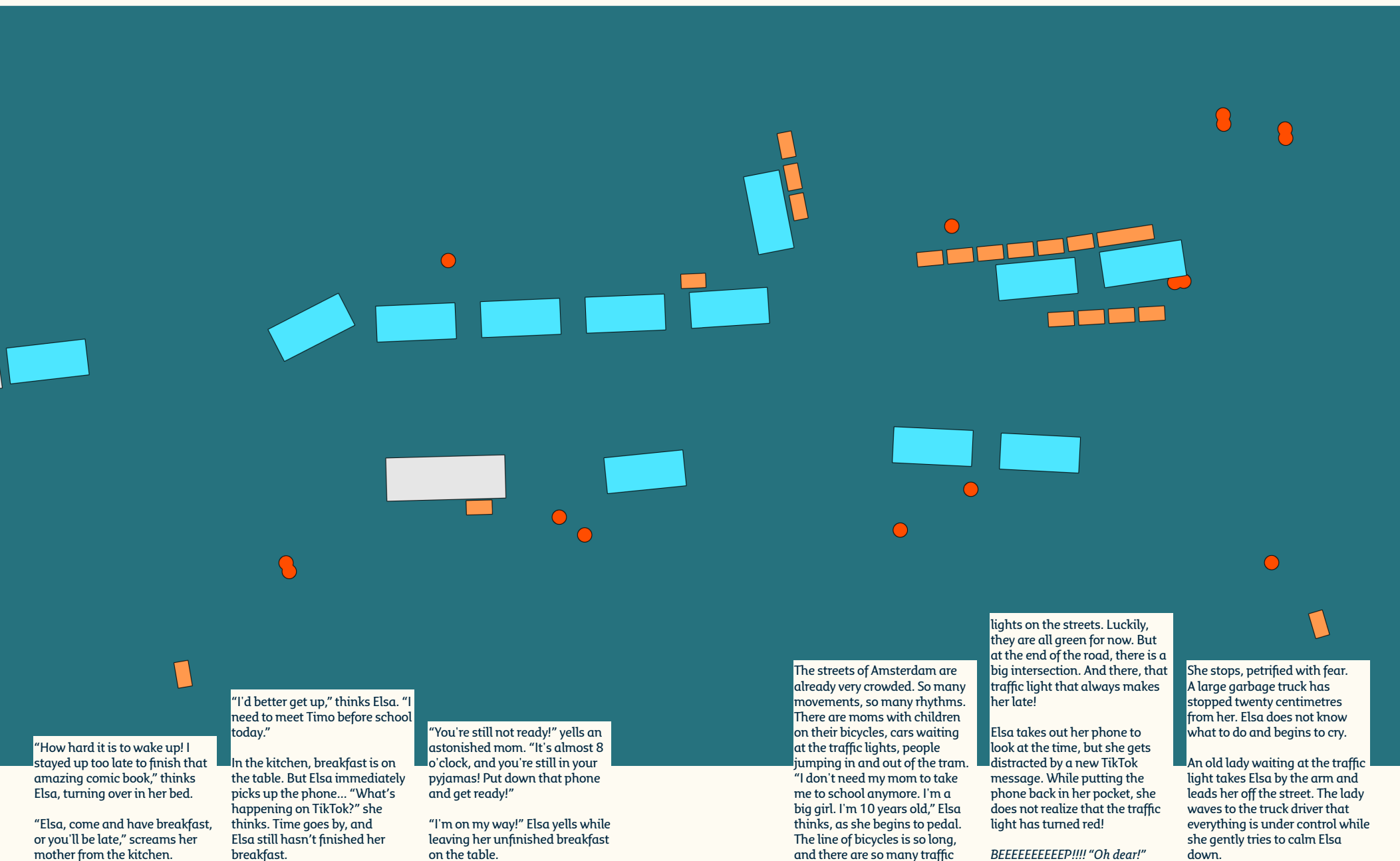


# RHYTHM & ALGORITHM 28

STORY BY ALESSANDRO BOZZON  
IMAGES BY RICHARD VIJGEN, BASED ON REAL TRAFFIC DATA FROM THE CITY OF AMSTERDAM





"How hard it is to wake up! I stayed up too late to finish that amazing comic book," thinks Elsa, turning over in her bed.

"Elsa, come and have breakfast, or you'll be late," screams her mother from the kitchen.

"I'd better get up," thinks Elsa. "I need to meet Timo before school today."

In the kitchen, breakfast is on the table. But Elsa immediately picks up the phone... "What's happening on TikTok?" she thinks. Time goes by, and Elsa still hasn't finished her breakfast.

"You're still not ready!" yells an astonished mom. "It's almost 8 o'clock, and you're still in your pyjamas! Put down that phone and get ready!"

"I'm on my way!" Elsa yells while leaving her unfinished breakfast on the table.

The streets of Amsterdam are already very crowded. So many movements, so many rhythms. There are moms with children on their bicycles, cars waiting at the traffic lights, people jumping in and out of the tram. "I don't need my mom to take me to school anymore. I'm a big girl. I'm 10 years old," Elsa thinks, as she begins to pedal. The line of bicycles is so long, and there are so many traffic

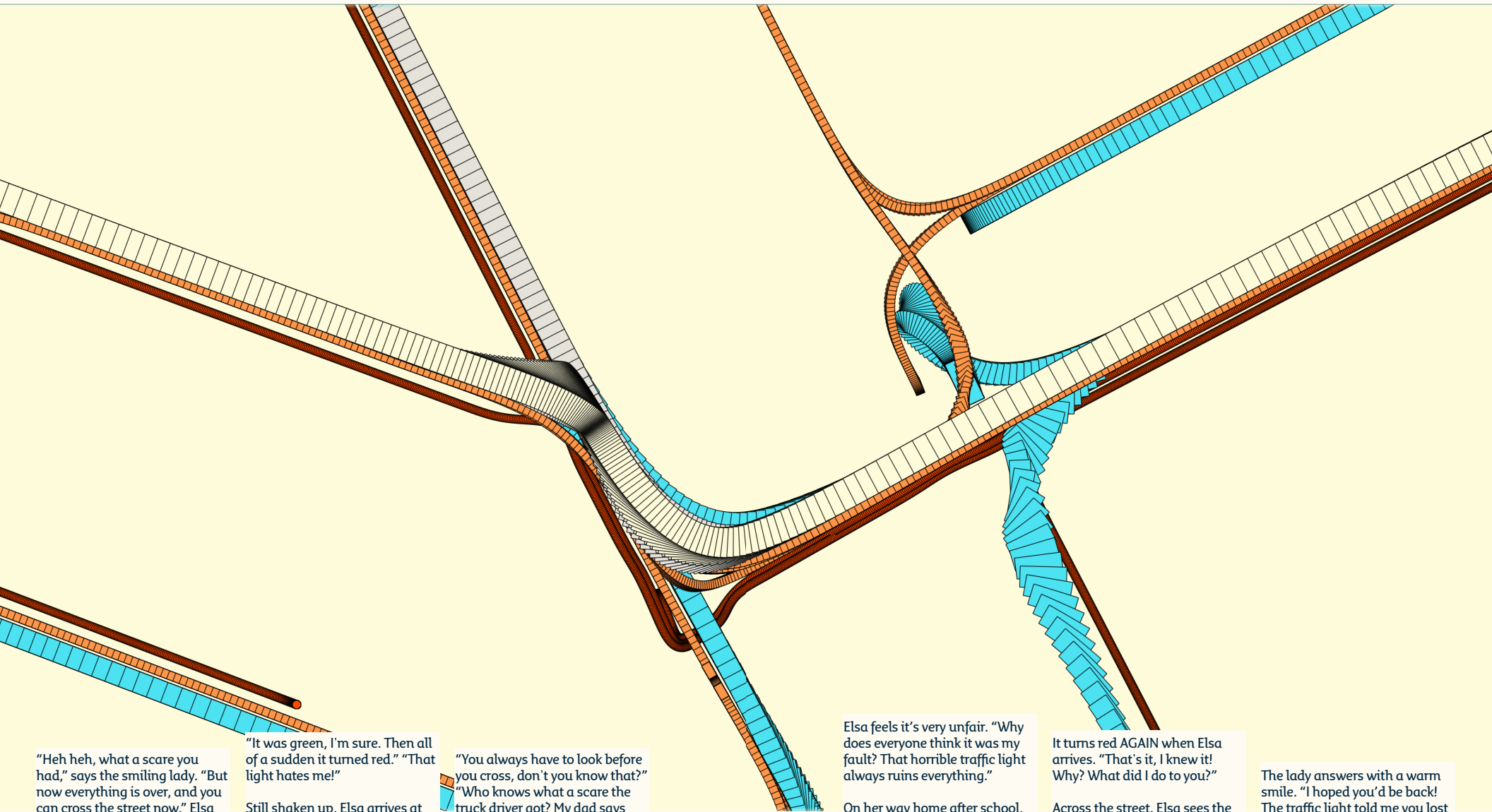
lights on the streets. Luckily, they are all green for now. But at the end of the road, there is a big intersection. And there, that traffic light that always makes her late!

Elsa takes out her phone to look at the time, but she gets distracted by a new TikTok message. While putting the phone back in her pocket, she does not realize that the traffic light has turned red!

*BEEEEEEEEEP!!!! "Oh dear!"*

She stops, petrified with fear. A large garbage truck has stopped twenty centimetres from her. Elsa does not know what to do and begins to cry.

An old lady waiting at the traffic light takes Elsa by the arm and leads her off the street. The lady waves to the truck driver that everything is under control while she gently tries to calm Elsa down.



"Heh heh, what a scare you had," says the smiling lady. "But now everything is over, and you can cross the street now." Elsa is still shocked and mumbles a simple "Okay."

The school is near, and Elsa can't understand why the traffic light played such a nasty trick.

"It was green, I'm sure. Then all of a sudden it turned red." "That light hates me!"

Still shaken up, Elsa arrives at school. "The traffic light played a trick on me," Elsa tells her classmates why she is late.

But everyone is angry at her. Even Timo looks really annoyed.

"You always have to look before you cross, don't you know that?" "Who knows what a scare the truck driver got? My dad says kids always cross through red lights, and then he's the one who gets in trouble," says another classmate. "Maybe you were on your cell phone again....," says Timo.

Elsa feels it's very unfair. "Why does everyone think it was my fault? That horrible traffic light always ruins everything."

On her way home after school, Elsa keeps thinking about that traffic light. "Every time, it makes me late! Yes, I could leave home a bit earlier, but the phone is so much fun! And why does it turn red all the time!?"

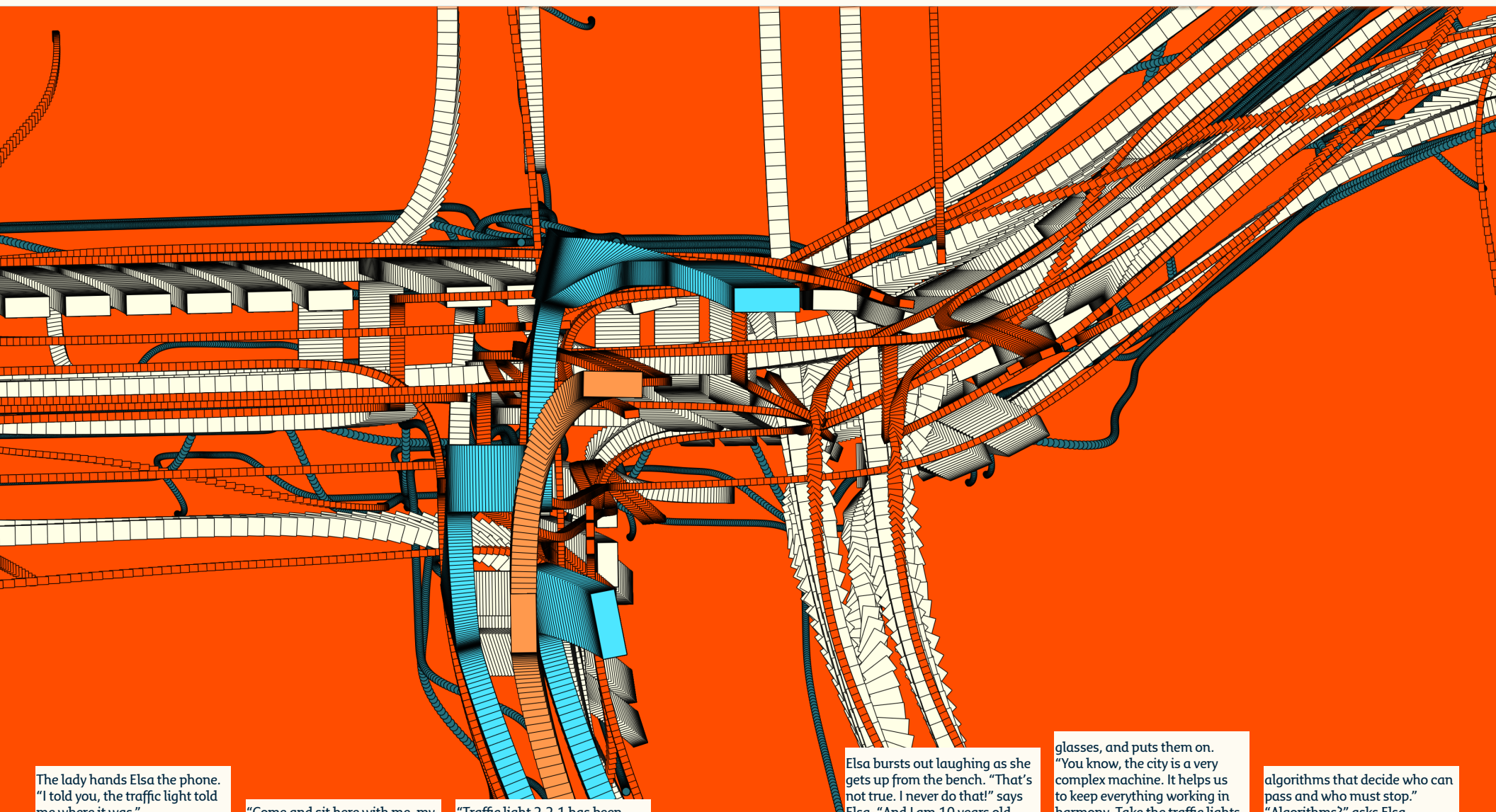
It turns red AGAIN when Elsa arrives. "That's it, I knew it! Why? What did I do to you?"

Across the street, Elsa sees the old lady who helped her a few hours earlier.

"Good afternoon!" Elsa says shyly. "I wanted to apologize. I don't think I thanked you."

The lady answers with a warm smile. "I hoped you'd be back! The traffic light told me you lost your phone this morning."

Elsa feels in her pocket. "Oh, no! My phone's gone! What do I tell my mom and dad? They'll be so mad at me!"



The lady hands Elsa the phone. "I told you, the traffic light told me where it was."

"But this really is my phone," says Elsa surprised, "Thank you! But I'm sure I put it back in my pocket... and then everything happened..."

"Come and sit here with me, my dear. I want to tell you a secret," says the old lady. "See, I have special glasses. They allow me to see the hidden world of the city and to talk with the creatures that live there."

"Traffic light 2.2.1 has been watching you for a while now. One of your hands is always busy with your cell phone. He and his team are always worried when you arrive at the big intersection."

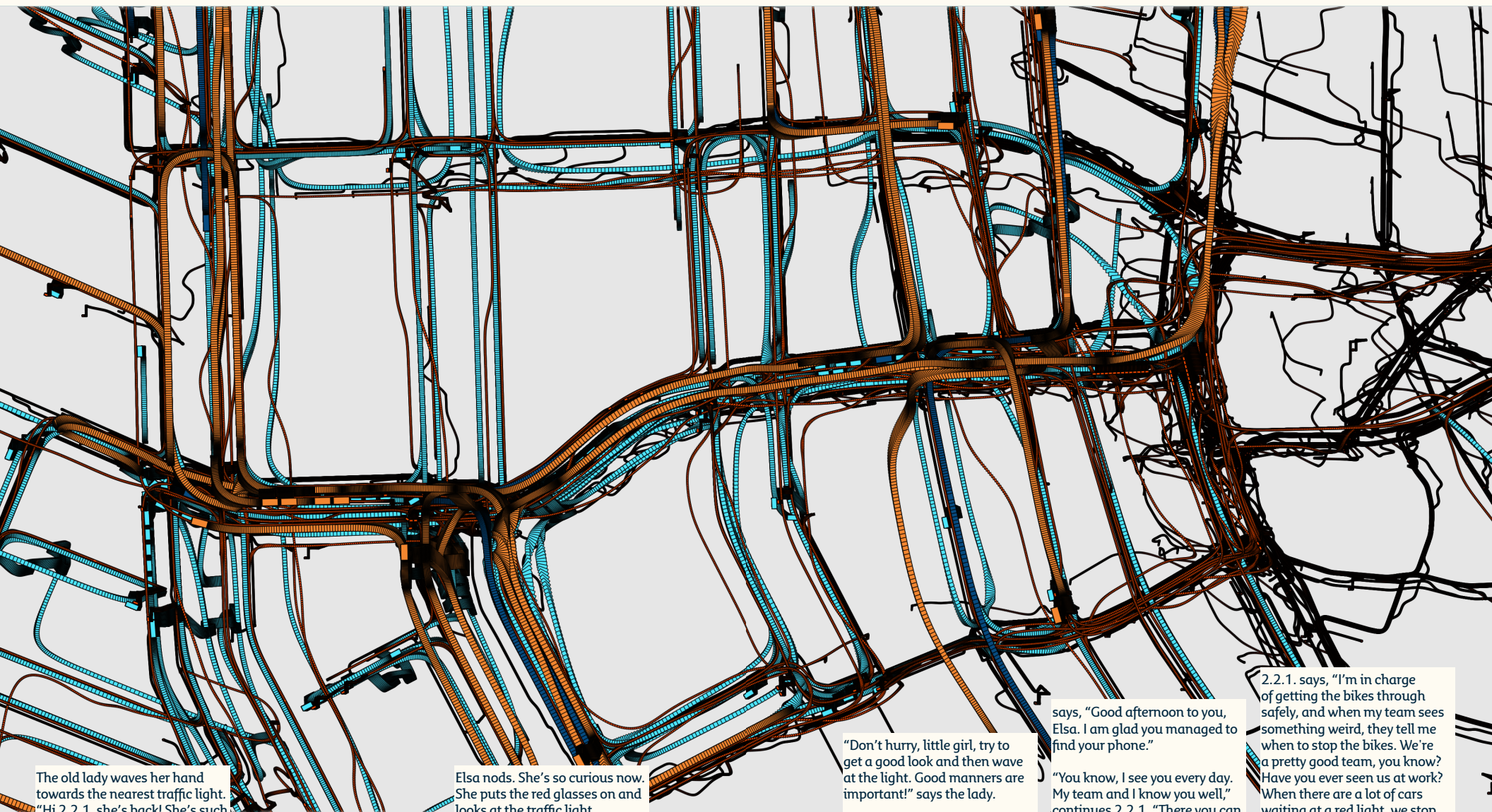
Elsa bursts out laughing as she gets up from the bench. "That's not true. I never do that!" says Elsa. "And I am 10 years old. Traffic lights do not talk! There is no hidden world in the city! I don't believe in fairy tales!"

Granny searches through her bag, takes out a pair of red

glasses, and puts them on. "You know, the city is a very complex machine. It helps us to keep everything working in harmony. Take the traffic lights here. They have a very important job: they set a rhythm to all of us. The cameras and sensors in the ground are like eyes and skin, to see and feel people, cars, and bikes. Their brain is made of

algorithms that decide who can pass and who must stop." "Algorithms?" asks Elsa.

"Yes, instructions that are followed step by step, in the right order. Like in your mom's recipe book when you bake cookies together."



The old lady waves her hand towards the nearest traffic light. "Hi 2.2.1, she's back! She's such a good little girl!"

Elsa is now very curious: "Can I wear them? I'd like to talk with the traffic light too," says Elsa giggling.

"On one condition," says the old lady, with a serious face. "You can't tell anyone about these glasses. Only special people can talk with the creatures of the hidden world."

Elsa nods. She's so curious now. She puts the red glasses on and looks at the traffic light.

After a few seconds, she takes them off. She looks at the lady and says, "You can see a little clearer, but I can't see anything special."

"Don't hurry, little girl, try to get a good look and then wave at the light. Good manners are important!" says the lady.

"Um...good afternoon 2.2.1...." says Elsa towards the traffic light.

Just then, traffic light 2.2.1 turns towards her for a second and

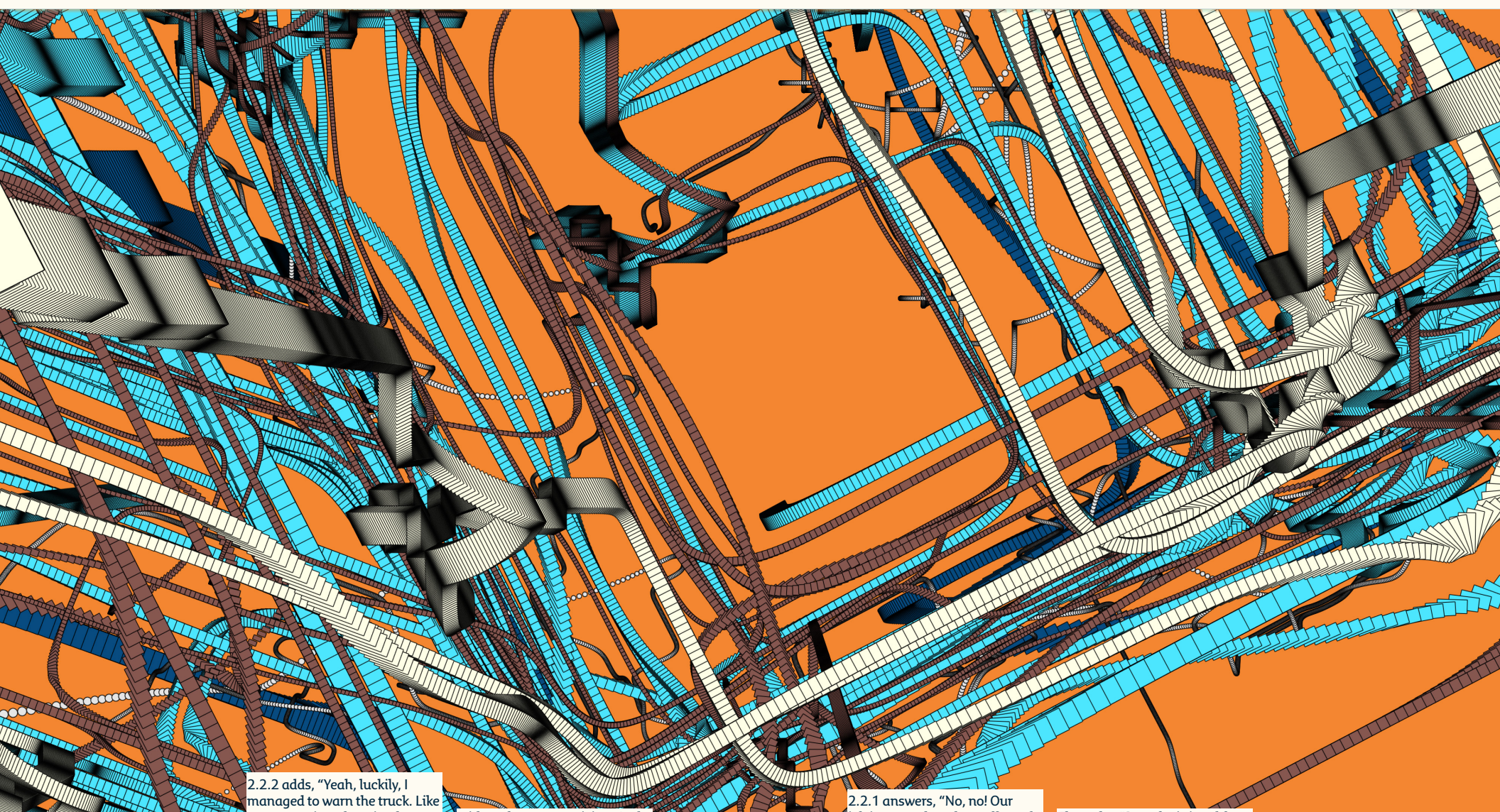
says, "Good afternoon to you, Elsa. I am glad you managed to find your phone."

"You know, I see you every day. My team and I know you well," continues 2.2.1. "There you can see 2.2.3, 2.2.2....and there's 2.2.4, and over there 2.2.0."

Elsa's head almost spins. "You all talk with each other?" asks Elsa.

2.2.1. says, "I'm in charge of getting the bikes through safely, and when my team sees something weird, they tell me when to stop the bikes. We're a pretty good team, you know? Have you ever seen us at work? When there are a lot of cars waiting at a red light, we stop the cyclists for a few minutes to avoid congestion."

"What's congestion?", asks Elsa. "That's when it's really busy," answers 2.2.1.



"2.2.2 lets the cars pass right on the bike path. He was so scared when he saw you crossing through a red light. That big truck was going to run you over."

2.2.2 adds, "Yeah, luckily, I managed to warn the truck. Like every morning, there is a lot to do. You are always distracted, but I just didn't expect you not to look at the road."

Elsa realizes how much work the traffic lights do every day,

without her even noticing. And she understands the many mistakes she's made so far.

"So you guys are not mad at me? It always turns red when I bike here."

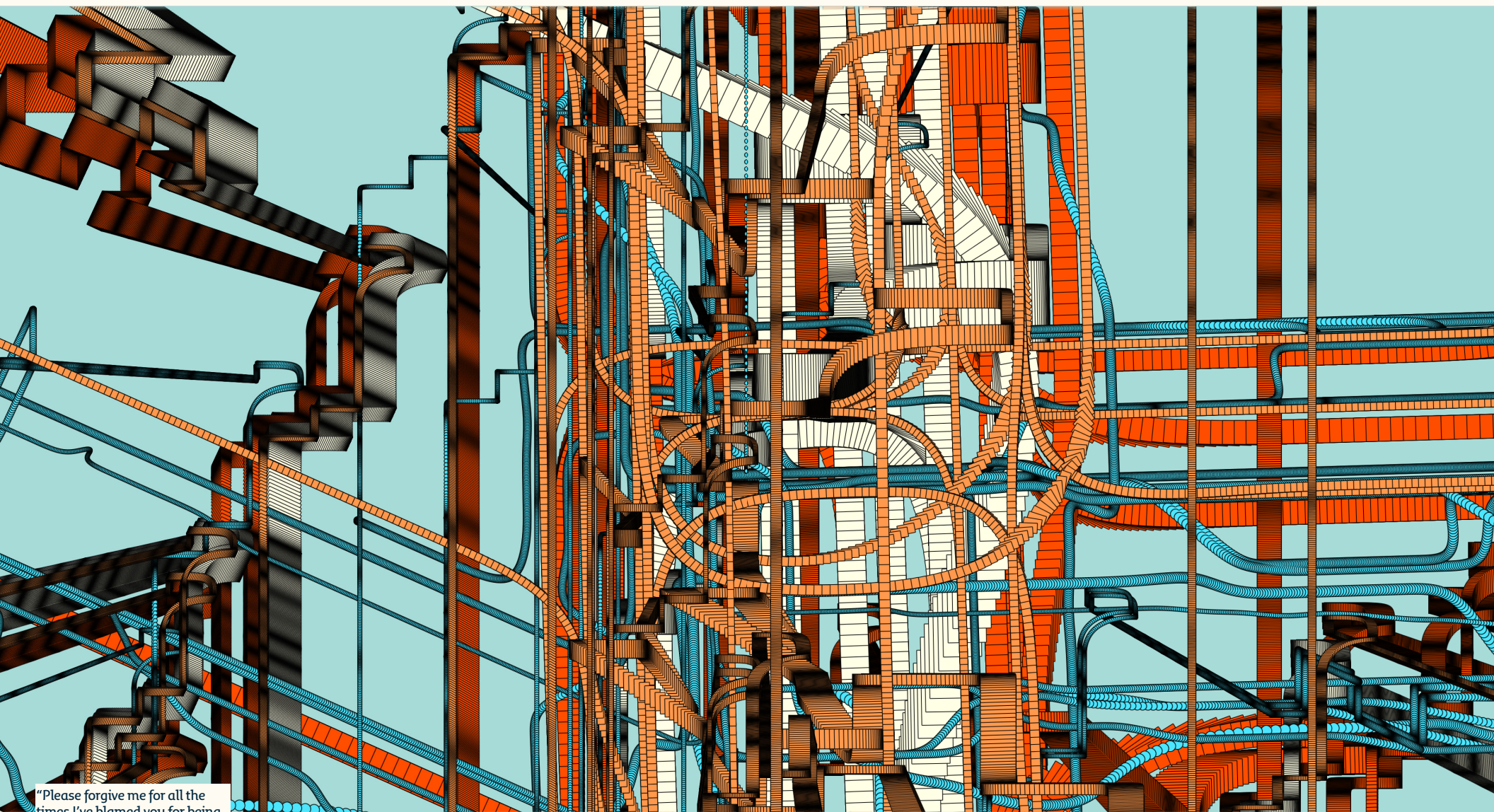
2.2.1 answers, "No, no! Our job is to regulate the traffic and to avoid congestion. We worry about you, but we are not angry at anyone."

"And we don't make any exceptions," says 2.2.3 firmly.

Elsa asks, "But why is it red for me every morning?"

2.2.1 explains, "Do you know that if you arrived 10 minutes earlier, the traffic light would be green all the time?"

"Really? Maybe the problem starts at home then..." says Elsa, a bit embarrassed, realizing that all her problems are caused by her own habits.



"Please forgive me for all the times I've blamed you for being late. Thank you from the bottom of my heart. I don't know if I'll ever be able to see you in the future, but I will certainly pay more attention to your clear signals."

"You're welcome," answers 2.2.1. "You will always find us here. But remember to be careful and look all around."

Elsa touches her face. Her glasses are gone. She turns, and the old lady is gone too. The traffic lights are also silent now. And everything has returned to normal.

Elsa thinks that maybe it has all been a dream, but patting her face she realizes that she wasn't asleep, and a big smile covers her face. What had happened was really exciting.

Elsa says another goodbye to the creatures of the enchanting world that she'd met just a few seconds before.

"See you tomorrow, guys."  
"And tomorrow, I'll see you 10 minutes earlier..."