

The Formula

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“Birthday boys!”

The shouts of the young men echoed through the small space, bouncing off hardened plastic and safety glass.

“This is going to be too good, man!”

“When do the girls arrive?”

“Not til tomorrow afternoon. Tonight’s all about the lads!”

“We’re gonna get you guys fucked up!”

Laughter and noise filled the car. Brent, driving, turned around to talk to the boys in the back seat. “I heard about this bar with cheap shots, and loose women.”

“You’ll be fine, you bronze Adonis,” replied Jalil, “but we’ve gotta get Sam laid. It’s his birthday, and he’s fucking hopeless.”

“I do alright,” Sam sulked, underneath the boos of his companions. In the passenger seat, Ali looked at Brent, waving his hands.

“I told you to watch the fucking road. I don’t want to die before we get Sam so drunk he pukes.”

“Shit, we’ve done that before,” Jalil called.

The car swerved a little. Around them, the motorway rushed past, wobbling and then straightening out. Up ahead, the outline of a bridge hove into view, large spokes stabbing down from a wheel in the sky to impale the concrete monolith at various points.

“Fuck sakes.” Ali reached over and slapped a button next to the steering wheel.

“Hey!” Brent said, as the steering wheel and pedals withdrew.

“Automated driver activated,” the car said, in a soothing, feminine voice. “To change the destination, please use the control board. Enjoy your journey.”

“That’s better,” Ali said, kicking the lever near the foot of his chair. There was a click, and the chair spun around; he faced Jalil and Sam. “Oh wait, what a terrible view.”

Sam pulled the finger.

“Why do you even bother driving?” Jalil asked, as Brent spun his chair to join them.

“I like it. Aren’t you going to take the test?”

“What’s the point? They’re going to ban the manual option soon anyway.”

“You never know, it might not go through. Anyway, driving is cool man. It’s fun. Like, kinda zen. I like the drive down to Swanage, to my parents’ place. It’s really nice.”

A beer can cracked open. “But you can’t do this when you’re driving!” Ali handed the can to Brent, cracked a few more. The boys yelled cheers, and tipped their heads back.

“Yes man, this is excellent. Especially now Brent can buy us beers.”

“The only thing this car needs is a pisser,” Sam said.

“Piss in the can. Now that Brent’s not driving it’ll be a smooth ride.”

“You sure we’ll be able to get in the clubs?” Ali asked. “Brent’s the only one who’s eighteen.”

"I will be on Sunday," Sam said, sniffing the bright blue can in his hand. He took a sip.

"Sunday's too fucking late."

"We've got the IDs, so quit worrying."

"But they won't stand up to more than the local scan."

"These hick bars aren't going to have the full connection. The national database isn't even running properly yet," Brent replied.

Ali tipped the remains of his can into his mouth, crushed it in his hand, dropped it, and belched.

"How do you know?"

"Don't you watch any news?"

"Nah, fuck that. Too depressing."

"Well anyway, it'll be fine. This is going to be a good..."

Brent trailed off as he saw the look on Sam and Jalil's faces change. Their eyes went wide, and they threw their arms up in front of their faces. Ali started to turn and look; his yell was still half-formed in his throat when the semi crashed through the front of the car.

"Collision war—" the car began, then stopped abruptly. The vehicle collapsed, its glass splintering into bright beads, its metal struts compressing, folding in such a way as to provide maximum protection for the occupants. The car buckled against the side of the larger vehicle for a moment, and then was thrown clear, crashing over the side of the bridge and hanging in mid-air, a cartoon forgetting about gravity. Then it was in the river and bobbing, a crumpled mess. The displaced water reclaimed its place, crawling through the openings in what remained of the vehicle.

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From its base several kilometers away, the emergency drone was dispatched with an efficiency which easily outstripped anything human hands could have produced. The car's alert system had broadcast an all-channel mayday microseconds after the impact detectors had sensed the

erratic path of the semi. The signal was shunted to the top of the local network by virtue of its status, and the base AI began the sequence of commands which woke the drone from its sleep and propelled it to the launch platform.

Seconds later, the drone was powered up and undergoing pre-flight checks. All equipment bays were fully loaded, battery packs were charged, and all systems registered green. The drone signaled readiness and received departure permission.

All this happened as it was removed from its charging bay by mechanical hands and placed on to a large elevator, which pushed it to the top of a facility housing several others like it. It swung into the air and, once clear of the facility, spun turbines up for maximum speed. It reached the accident site two minutes nine seconds after activation, all the while processing and parsing data being provided to it by AI in the vehicles on scene and embedded in the bridge sensors.

The drone came to a halt directly over the point where the car hit the water, and hatches on either side of its undercarriage opened, spilling several dozen hand-sized machines out into the river. The spider-like devices entered the water and immediately sent out echolocation pulses. By virtue of its size and composition, the vehicle was quickly found, several meters down, and the machines activated their propellers, swarming over and into the car and probing it for information.

Meanwhile, the drone had accessed a weak signal from the car's AI, which was devoting the remainder of its resources to the emergency medical procedures it was able to enact. It had placed oxygen bubbles over the faces of the boys, and the few undamaged medical machines it possessed were focused on preventing blood loss. It informed the drone that one of the occupants had been killed on impact, and sent the details of the medical status of the three remaining humans, as well as their biographical information, medical histories, and its own remaining

capabilities and power reserves.

The car was active for fourteen more seconds before its power failed and it went dark. In that time, the drone assessed the information stream from the car and from its spiders, and instructed them on how to proceed, including its assessment of prioritization.

In the darkness underneath the water, the spiders went to work. The boys were dimly aware of the machines approaching them, climbing over them, administering drugs and clamping wounds. One boy was panicking, waving slow swings at the things he could feel but not see, but his arms were caught and pinned gently to his sides. Seconds later, he passed out.

The drone spun a cable down into the water; this was attached to the vehicle which, once the spiders reported stability, was pulled from the river and deposited on the bridge, gently, like a mother cat with her cubs in her mouth.

A flying ambulance arrived on scene and began communication with the other machines on site. The drone had been established as the lead intelligence, but now relinquished that role to the ambulance as protocol required.

The drone sent control permission to the ambulance, allowing it to use any of the spiders it needed, and lowered itself to the bridge to recover those which were not required. The ambulance dispatched its own spiders to cut through the car, while opposite, hundreds more of the small machines clambered over the semi. The occupants of both vehicles, a mess of flesh and blood, were lifted from the wreckage and placed aboard the ambulance, which lifted easily into the air and sped away to the nearest hospital. Simultaneously, a signal was sent to their designated guardians and relatives, informing them of the incident and providing instructions for the fastest routes to the hospital.

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Bill and Alice Carruthers stood before the hospital bed clutching hands; before them lay their son, Sam. He was cocooned in an organized mess of plastic and tubes. Dermal coverings, monitoring tags, and other devices whose purpose was unclear swirled around him, over him, into him. A quiet cacophony of beeps and hums filled the air, lending a further sense of movement to the twists and turns of the smooth plastics which covered the boy.

“Mr. and Mrs. Carruthers.”

The pair looked up, shaken from their trance. They decoupled and turned to face the woman who’d entered the room.

“Doctor...”

“I’m Doctor Gireau, and I’m in charge of Sam’s care. He’s been very lucky.”

“Lucky?” Bill looked at his son, and back to the doctor.

“It’s really a lot better than it looks, and it could have been worse. The emergency vehicles were able to get to him very quickly. He’s stable, no major internal injuries, and no loss of any limbs. We’re going to keep him under for a few days, to give his body a chance to heal. It’s better than using the medical dots; we like to stick to non-invasive intervention wherever possible.”

“So he’ll be ok?”

“Yes, the prognosis is a full recovery. He may need some therapeutic work, both physical and mental, but in general he’s been fortunate.”

The couple took hold once more, each leaning on and supporting the other, holding tight in an expression of shared relief. Alice looked at her son, and then back to the Doctor. A thought flashed through her mind.

“But... he...” Alice started speaking, stopped, collected herself. “We heard what happened. It doesn’t bear thinking about. How did he... I mean, the other boys...”

The Doctor sighed slightly, shifted her weight. "It's a tough thing. One of the boys was killed instantly. The others, including your son, were saved by the vehicle's automated measures. It was able to alert an emergency drone within seconds, and it was also able to keep them alive until the drone arrived and could dispatch medical support."

"But Brent..." Alice went on, then stopped, unsure how to word her thoughts.

"Brent was a victim of his age, unfortunately."

"How do you mean?" Bill asked.

The Doctor looked surprised. "His age, sir. He'd turned eighteen recently. The medical machines are programmed to prioritize minors over adults. They triage on that basis. It's not a pleasant formula to have to program, but public opinion is generally in favor of it."

Alice and Bill were stunned. Gireau allowed them a moment to take things in. Finally, Bill spoke.

"You mean, if this had occurred a few days later, after Sam's birthday, he could have been..." He broke off, unable to complete the thought.

"There's no way to tell what might have happened," Gireau said, softly. "If I were you, I'd focus on the positives. Your son is alive and is doing well."

The couple nodded, and the Doctor continued. "You have my contact card; follow the thread for medical updates, and feel free to send any questions there. Or if you'd like to talk more, use the link and I'll receive a notification. I'll be in touch as soon as I can."

"Yes. Thank you, Doctor," they called as she walked from the room.

They stood there some more, looking at their boy, losing track of the time. The sounds of the room swam around them.

"Shall we go and get a cup of tea?" Bill said at last. Alice nodded, and Bill led her from the room. In the corridor they stopped.

“Is that...” Alice asked, but didn’t need to finish the question. Further down the corridor, Brent’s parents sat, arms around each other, sobbing.

Bill and Alice looked at each other, nodded, and made their way towards the couple.

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Discussion Questions

1. The doctor says, “The medical machines are programmed to prioritize minors over adults.” Do you agree with medical machines setting treatment priorities? If so, is prioritizing the safety of a minor over an adult appropriate? What about prioritizing younger adult patients over older ones?
2. Should AI in self-driving cars, or any other form, be programmed with human safety “prioritization” at all? Should individual fault be considered in the prioritization equation? (*For example, a person walks in front of a car putting the occupants at risk if the car veers too quickly.*)
3. If AI has priorities set for it, who should set those priorities? (Government, the manufacturer, insurance companies, ethicists, the general public?) What do you think is a fair public/private process for setting AI priorities look like?
4. Should the owner of a self-driving AI car be allowed to change the priority default settings?
5. Should a human supervising the medical emergency response be allowed to override the priority default settings? Should the person who changed the settings be exposed to liability for having done so? What about in Question #4?

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