

$\exists x \in U$: universal set

$\exists t \in R$: time

$\exists v \in U$: viewpoint

$\exists K$: knowledge = $\{k: P(x,t,v)\}$ x,t,v : P =Perception

$T = \{k : T(k)\} : \forall t,v,k \in K: T = \text{True}$

$F = \{k: F(k)\} : \forall t,v,k \in K: F = \text{False}$

But $K \supset (T \cup F)$

$\Rightarrow \exists M \subset K \ \& \ M \neq \emptyset : M = \text{Maybe}$

Knowledge of all things is perceived from a viewpoint of an observer at a moment in time. Knowledge comprises facts that are known to be always true from all viewpoints and those that are known to be always false, but there remain many facts that maybe true or false depending on when and by whom they are observed.



one

Jason: 'Look at this.'
Carla: 'I'm looking.'
Jason: 'It's a Transmutator.'
Carla: 'It's a silver box.'
Jason: 'It's to do with mutation.'
Carla: 'So?'
Jason: 'And it dropped out of the sky.'
Carla: 'Yeh, right, and I've just dropped in from Mars.'

Carla has neither seen a Transmutator nor heard of mutation, but Jason Boff Five will be the last to know.

Frake is sitting in his usual place, thought-processing, or in sleep, though where he is concerned there isn't much difference between the two.

'Hey Frake, you're looking turbo-charged today,' Carla smiles sweetly.

'What d'you want?'

No one ever comes to find him unless they want something. *Frake, I've heard you're really handy with a mobi-cleanser. Frake, will you do my rota today?* Always the same.

'Nothing really,' she shrugs. 'It's just that ... well, you know you've got a pass to the Senior Knowledge Centre.'

‘Yes, for all the good it does me.’

‘Well, I was wondering if-’

‘Ye-es.’

‘I was wondering if you could get me some data.’

‘What kind of data?’

‘Not sure really, but it’s something to do with a Trans-thingy that fell out of the sky.’

Frake does not have an inquiring mind, additional knowledge being a superfluous attribute for Substandards like him, but suddenly a strange and unfamiliar thought enters the void. *Don’t let your highly developed sense of ignorance stop you now.* ‘What did you just say?’

‘You heard me,’ she replies with her more customary sneery-look, sweetness and Carla never being long-term partners. ‘I want to know more about a Trans-thingy that fell out of the sky. At least that’s what Jason said, but you know he’s full of-’ She stops, Frake isn’t listening any more. In fact, duff-disc personified is off down the sili-path as if he has somewhere to go and knows how to get there. What happened?

When Carla finally finds Jason again, he is sitting at the base of the Paraboloid wall, fiddling with the Trans-thing. ‘Have you seen him?’ she asks breathlessly.

‘Who?’

‘Frake.’

‘What if I have?’ Jason is enjoying his apparent moment of supremacy, which doesn’t happen often where Carla is concerned.

‘Well, I mentioned the Trans-thingy to him and he went all behaviour outside specification and walked off. Has he been here?’

‘Yes, and maybe no.’

‘Listen, just tell me,’ Carla sighs. *Why am I worrying? Why do I care about Trans-thingys and what Jason thinks?* She checks for Jason’s reaction out of the corner of her eye, but he is already too far up his own intellectual path to notice, so she kicks the wall, which sets off a warning bell and presents Senior Graves’ head in the observation screen.

‘One more time, Carla Ten and I’ll have you silenced so long you’ll lose the power of speech.’

Carla has a list of ready-replies in her head, but she is on her final warning. The thought of another two years of learning Data Classification is enough to silence her without any further action on his part. *Not fair! Why does Jason get all the excitement?*

Jason watches her pace up and down, kicking stones but catching them just before they hit the observation screens set into the wall. Carla is different, wild, her hair red and out of control like the rest of her. He thrives on control, it is part of his make-up and should have been part of hers. So what has gone wrong? Why is she a Nonc and he a Boff? And, more importantly, why does he feel like he wants to impress her when he is so obviously blonde and genetically superior?

‘He did ask where I’d seen it fall from,’ Jason calls over to her.

Carla turns round, her eyes wide with interest. ‘And did you tell him?’

‘No.’

For the second time that day Carla is almost, but not quite, speechless. Jason does not lie. He might exaggerate, or be economical with the truth, but he never lies. ‘Why not?’

‘Because it’s mine and I’m not sharing it with anyone else.’ This isn’t Jason-speak either.

‘You mean you think Frake wants it.’

‘Maybe, but actually I don’t care. I only told you about it because, erm because you’re different, but I’m not telling anyone else and definitely not Frake.’

Different? Well duuh, I’m a Nonc and he’s a Boff. Maybe he’s getting Feelings, but that’s not supposed to happen for another two years. Anyway Noncs and Boffs just don’t mix that way.

Neeep Neeep Neeep. The call-in signal. Girls one way and boys the other.

‘Meet me in Recreation Session tomorrow. We’ve got to talk about this,’ she shouts back, just before a Senior hooks her in.

Jason is one of the compliant ones, never in trouble, always studious, always in sleep when he should be, but something is going wrong. This evening he hangs around outside the Sleep Block, until the last boy has gone in and a Senior has to come and get him.

‘What’s this, Jason Five? Playing hard to get?’

‘No, Senior Plaid, sorry Senior Plaid.’

Inside the Inter-ed sleep block, the polymer roof frosts the sky above, and Jason strains to get a glimpse of the stars he knows are there. *I need to see.* The thought scrapes around his head. *I have to know.*

‘You should be preparing for sleep, Jason Five. Why aren’t you in the showers?’

‘Sorry,’ Jason drops his gaze, and assumes the expressionless face that usually keeps him out of trouble.

Carla, on the other hand, is always in trouble and not about to make any attempt to change. She slips under the showers, receives only a minimal wetting and then heads for the door at the end. Prefects in the girl’s section are traditionally slow because they are all Fourth Phasers with the onset of Feelings to deal with, which means they have little time for watching Noncs like Carla. But outside she has to be more careful.

Carla skirts round the shadows of her block, and then heads out towards the furthest corner of the Paraboloid, where she knows Frake will be. She’s found him there before. He’s told her that he goes there to thought-process, but she knows that he just doesn’t want to be shown up for being worse than an Unclassified at games.

There are no air currents in the Paraboloid meaning that any sounds are crystal clear, as Carla has already learnt to her cost on a number of occasions. But this time there is a sound she has never heard before and it is coming from Frake. Actually, it is more of a resonance, a vibration so low as to be almost outside the normal limits of the human voice. Could Frake be singing? Carla considers this for a moment. Singing is forbidden outside the training sessions, and singing with unsanctioned words is a punishable offence. So how would they categorise singing without any words at all? Frake’s head is tilted up and it is quite clear

that whatever the noise is, he is directing it skywards. *Of course, where the Trans-thing came from*, Carla realises in a rush. For all his apparent stupidity, Frake seems to know more about it than Jason does.

‘Frake,’ she calls as softly as she can, but hopefully loud enough for him to hear. Frake turns round as if he’s been neuro-shot. ‘It’s only me,’ Carla creeps towards him on all fours, the unexpected sight of Frake’s glowing eyes making a deep impression on her usually impervious state of indifference. She is scared. ‘Don’t get up. I just want to talk to you.’

‘I know.’

‘Oh,’ Carla is taken by surprise and Substandards shouldn’t be able to do that to Inter-eds.

‘You’ve come to talk to me about the Transmutator.’

‘Yeh, among other things,’ her assumed nonchalance is lost on Frake. ‘Do you want to talk about it?’

Instead of answering, Frake starts his song again, except this time his voice booming out at 100 decibels.

‘Turn it down!’ Carla shouts, but too late. The drone has turned into a huge rippling roar, which echoes across the Paraboloid and has lights flashing from every section. Within seconds, Seniors are pouring out of their blocks holding stunners and anything else they can lay their hands on. This is not the way she had planned it.

Senior Graves is on the scene straight away, of course, strutting about as if he’s just had a rectum micro-fibre implanted. ‘Put him in detention until I can think of something worse,’ he says before electronically hooking Carla. ‘I might have guessed you would be involved. Have you got an explanation for being out here after sleep hour?’

On any other occasion she would probably have been able to think up something halfway plausible, but not this time. Frake, Jason and Trans-things falling out of the sky are all too much for her to cope with in the space of a few hours. ‘Go on, tell me I’ve been demoted and bang me into ten days Silence, see if I ca-’ Carla stops, her face suddenly frozen and her frustration stuck inside her like a bad stomach-ache.

‘Funny,’ says Senior Graves, smirking with satisfaction, ‘you must have read my thoughts.’

Orifice. Carla has to be content with inner cursing for the time being.

When Jason gets up the next day he knows something is wrong when he sees Senior Graves enjoying his breakfast and smiling. ‘All right, Jason Five? Excellent day for Inter-ed Development, don’t you think?’

Jason doesn’t reply, but looks round for Carla. There has to be a connection. After scanning the room for some time he spots her in the far corner of the girl-group, eating quietly and alone. Yes, something is definitely wrong, but signalling to Carla is risky, particularly with Senior Graves’ eyes beaming into the back of his head. He’ll have to wait until the recreation session.

Carla looks at Jason and knows what he is thinking, it’s obvious, boys are so predictable and pathetic. If he’d signal over to her she would be able to make a sign and perhaps, somehow, tell him that Frake needs to be checked out, but without a signal to respond to the Silence holds her in a vice.



two

For Jason, Third Phase Education is fascinating, exhilarating and well ... educating. For Carla, Third Phase Education is worse than Termination. In class, Jason sits attentively, stares at his screen and manipulates figures like it's his hobby, while Carla just tries to bug hers. But for once the morning passes equally slowly for both.

In her newly demoted status, Carla has to sit alongside First Phasers and go through the whole history of Data Classification again. Boring the first time, data overload the second, though the upside is that she inexplicably remembers at least fifty per cent of the answers from the previous year, which might mean she won't fail the quarterly tests again - an unbroken record so far.

'The formula was discovered by Elder Grake in the cycle 3001 and developed by his Senior Group after his shut-down in 3015.' Carla pushes the letters out onto her screen.

'Well done, Carla Ten. Does this mean that we can expect some improved percentages from you in the future? It would make a pleasant change.'

Bug-brain.

In the Boy Block, Jason is at the front of the class because he is a top Boff and worth the investment. True to form he seems to be studying away with rapt and undivided attention. What a good boy.

‘Jason, I know I can rely on you for the answer as no one else seems to be capable of providing it,’ Senior Maple sighs. ‘Please tell us how we can arrive at the binary calculation of Data Series 4.’

‘Huh?’ In fact, he has not been listening and he does not know the answer. A first in the history of Jason Boff Five. Yes, there is definitely something wrong.

Later, in the Recreation Session, Jason looks for Carla, throws caution to the universe and risks a signal because he has got nothing to lose. After his error-response in Trinarculatation it can only be downhill from here, but it is a discreet signal nonetheless. Carla isn’t worth risking his entire reputation for. In fact, if Carla hadn’t been looking out for it, she would have missed the dribble of light from his Personal LogicEngine (otherwise known as a PLE and worn on the wrist by most people, except for the occasional Nonc who might try an ankle or neck attachment). What a loser, lucky for him she is stuck in Silence. Nevertheless, it is enough to enable her to indicate with her eyes that he should come over. Then she points to her own PLE, though she is not quite sure why.

At first nothing happens and Jason is beginning to wonder if Carla is just a malfunctioning Nonc after all, but then slowly, very slowly, the letters start to appear, which of course changes everything.

‘Hey, you can text-thought-transfer,’ Jason’s mouth falls open. ‘How-’.

Fr ...ak transth...

So far, so good, but no further because Daytime Fraternisation between Third Phaser genders is restricted to a total of ten seconds. Anything more being considered to be a source of thought-contamination that will, supposedly, affect Education Focus.

‘Jason Five, report for Additional Education at the end of Recreation,’ Senior Maple checks Jason’s record on his PLE. ‘If this is how you spend your valuable spare time it’s hardly surprising your output has dropped by 0.1 per cent.’

In the meantime, Frake seems to have disappeared. After a tedious Remedial Education session with Elder Eritum, Jason spends the whole of his evening Free Session looking in all the usual places: at the back of the refuse launcher, on the silicon dump, in the Unclassified Block, but Frake has made himself scarce. *Why? Perhaps Carla is right after all, perhaps he does want the Transmutator. But how does she manage to be right for all the wrong reasons? Anyway the Transmutator is mine, I found it and I'm not about to share it.*

This last observation is followed by a strangely pleasurable feeling in his left buttock, which reminds him that keeping the Transmutator in the back pocket of his overalls probably isn't a good idea. One Senior in cleanliness overdrive and his overalls, with the Transmutator, could end up in a refuse launcher. Jason feels sick. Something about the Transmutator makes this an impossible outcome. Something else says that he, Jason Boff Five, will have to forget everything he has ever been told. *Be a good boy Jason, work hard, obey the rules and make your Group proud of you.* In fact he might well have to behave like Carla on some occasions. *Eeerrgh!*

Jason. The voice is inside his head, but as loud as if she is standing next to him. *Behind you!* Carla is in Silence and locked in the girl block, so how- ? Then he feels the hand on his shoulder, gripping and lifting him high into the air.

'You've been looking for me.'

'Er no, not really.' Meeting Frake in the dark is about as enticing as electronic paralysis, particularly when he is so un-Frake-like. Something about his expression and those glowing eyes.

'You've been looking for me,' Frake says again before dropping him. 'Strange, because I've been looking for you too.'

'What a coincidence.'

'Where is it?' Frake is close enough to pass on a wave of extremely bad breath. Jason is close to asphyxiation. 'And don't wait too long 'cause I feel a cough coming.'

‘Frake! You’ll go into detention for this, now get back inside,’ Graves yells from some fifty metres away.

Seniors are not usually a welcome sight, but this is not an ordinary instant. Jason would have given Graves a Nonc handshake if his hands had not been shaking already. Frake responds by assuming the *I’m really stupid expression* most people associate with his status. ‘Er... so-rr-y.’

But Senior Graves is currently enjoying the little authority he has - Unclassifieds, Substandards and Inter-eds being the only people he is Senior to - so he isn’t about to miss this rare opportunity. ‘Jason, for the time being I’ll pretend I haven’t seen you, unless of course your output continues to fall and I find you out here again.’

Pathetic silicon brain. It was that in-your-head voice again, weird but somehow comforting when you know you are about to get a lecture, if not worse. Senior Graves draws breath. *Oh-oh, here it comes, just pretend you’ve got a stun gun aimed up his nose.*

‘I don’t think you have anything to smile about, Jason Five. I could quite easily assume that you are responsible for Frake’s behaviour.’

‘But I was hanging by my skin when-’

‘When what?’

‘Oh, nothing, Senior Graves,’ Jason sighs. It is probably advisable to stay Jason Boff Five, the good boy, for a little while longer.

Sap.

‘Why don’t you just shut up?’

‘What’s that, Jason Five?’

Next day and Carla is close to spontaneous combustion. Being in Silence is frustrating, but being in Education in Silence is worse than a dose of ennui. The only good news is that seeing her text-thoughts come out on the PLE has amazed Carla as much as Jason, so now she is practising thought-transferring onto the screen, instead of using the keyboard. It works, but she gets the answer wrong, which costs her five more minutes on the Dumb Register. There has to be another way.

Sometimes she is lucky enough to share a screen with Dawn Six who always gets the answers right and usually lets Carla read them if she is asked a question, but that day, of all days, Dawn has been transferred to sit with a Top Grader because she is a Pure Boff and too advanced for Demote Noncs like Carla. Worse still, the Senior for Analysis is Sarah, a silicon-sad who likes nothing more than to see her favourites do well.

‘Let us try again, Carla. Let us see if you can get at least the most elementary principles of analysis correct.’

Here we go, another hour’s Silence if I get this wrong. I hate this place.

‘Which particles must be analysed with micro matter to achieve a consistent measurement?’

Who cares? ERM ... appears on the screen. She has to get it right because the silence is beginning to wear her down. ERM ... If she’d been next to Dawn she would have been all right.

‘Come on, Carla Ten. I haven’t got all day.’

ERM ... Carla can see Dawn’s neat head a few rows down, divided in two halves by an isometric parting and underneath it a mess of formulas zipping about like byte streams on the info-mesh. *I can see into her head!* ERM ... FOUR PARTS NUCLEAR AND FIVE PARTS ANTIFUSIONAL appears on her screen.

‘Correct,’ Senior Sarah is disappointed. Carla in Silence forever is a satisfying prospect, but there is one chance left. ‘I hope you haven’t been copying.’

Carla shakes her head. *Who, me? Copy?*

‘Well, just to be absolutely sure we will check Tara Two’s screen to see what she has. If it is also correct I will have to assume, given your past record, that you did not arrive at your answer unaided. A very disappointing outcome.’

Disappointed! You’ll be gutted if I’ve got it right without cheating.

‘An incorrect answer, Tara. I am both surprised and disappointed.’

Disappointed because I got it I right. Disappointed because I might have copied, and disappointed because Tara Two got it wrong. What do you want woman?

After that there is no stopping. Not to develop this new ability would be a betrayal of her status as the group Nonc. So Carla keeps on trying and nearly screams out loud when she connects with Jason and he answers. *Just imagine what I could do with this*, so she imagines, which reminds her of the Trans-thing.

Jason is thinking about the Transmutator too. In fact he has it in his hand and is looking at the flicker of lights running across its tiny PlasMonitor. He suspects he might learn more about it when he reaches Full Elite status, but by then he will be an Elder Elder and only a few years away from shut-down.

Frake's thought-cycle is not so far away from Josh's. He wants the Transmutator, he knows that much, and because he is used to not knowing much at all, it is more than enough. But he has been giving himself quite a few surprises lately. How about the time he second-guessed the Carla Ten brat? And what about the way he knew Jason Five was in possession? Neat. Frake isn't one for indulging in self-admiration, and as a Substandard he doesn't have much opportunity, but he is most definitely going to wallow in it while he can. *Good man, clever man*. Frake gives himself a pat on the back and goes back to sleep, er, thought-processing.

'Are you sure you programmed the rescue properly?' The man speaking is lying comfortably on a silver couch, his legs clad in a shimmering cloth, subtly colour-graduated to emphasise his slim, muscular thighs. 'They're not the kind of h-h-humans, ugh! The very word makes me quite nauseous. They're not the kind of, you know, I expected you to use.'

'Well, if you can do better, why don't you take over?' His companion flicks back a lock of white hair and delicately paces the room. The heels of his long black thigh boots clicking sharply on the highly polished floor. 'Working across universes is cutting edge technology.'

‘Eew, don’t do the offended,’ silky thighs strokes the air pleadingly. ‘It’s just that this creature is not quite what I ...’ they both look at the screen where Frake is thought-processing noisily. ‘Do you really think he is the best choice? And that little one, Carla Ten, isn’t it? What’s she got to do with the rescue? Quite frankly she worries me.’

‘Huh, it’s all very fine for you to say, but if you hadn’t taken the Transmutator out for a ride,’ he stops and then turns sharply. ‘Which reminds me, you never really have explained why you were in the launcher on your own.’

‘Not true!’ The heavily mascaraed eyes open wide. ‘I told you everything happened as if it was in a dream. I’m not even sure it was really me, but please let’s not go through it all again,’ Silky thighs lies back on the couch and pulls a scarf over his face. ‘It’ll only bring on another migraine and you know what that means,’ one eye offers a lazy wink.

With only a silicon soul, emotions should be outside specification, but since leaving Mutania the Transmutator has detected an unprogrammed sense of self.

I change therefore I am.

It tests the PlasMonitor text in a variety of colours, settles on azure blue and wishes someone was there to appreciate the change. For some reason beyond digital rationalisation the future has begun to look decidedly rosy, or maybe a slightly deeper purple. But to maintain this happy, solid state the Transmutator knows that it will have to take control.

Jason has always slept the sleep of a hardworking Inter-ed who knows mind-regeneration is the best means of ensuring he will be able to meet his optimum potential, but tonight is different. First there are the jumbled carcasses of Carla’s sleep images, which keep crashing into his own and, needless to say, are disgustingly Nonc. Then there is the realisation that he is about to lose his hard-won Super Boff status due to

another disastrous 99.9% in Matriculation (the shame). And finally there is the Transmutator. On the first night it had been content to stay in the back pocket of his overalls. On the second night it had pestered him with the feeling that it should really be under his pillow and now it is hammering into his head and wanting to be *heard*. How do you *hear* a Transmutator? It's a machine. A silicon chip with a bit more added round the sides. Transmutators could not have feelings.

'Well, that's just where you're wrong Boff boy.'

'Uh?'

'Try falling out of the sky and seeing if you don't have feelings. '

'But you're just a - '

'Never use the word *just* when you are talking about a Primary Transmutator.'

Carla is having bad sleep images too, which is nothing new. The problem is that they are about creatures she has never seen before. She would have seen them if she'd been paying attention to her lessons in Extinct Species, but you know Carla, she was probably planning to unzip Senior Graves' intellect programme at the time. It's what you do if you're a Nonc.