(M)

00:30 Oh heavens, now I know my own study participants (?) feel like, yea emm, so these are the axioms here, five axioms, and which represented here diagrammatically, right, so, is member of, only one robot, this is member of, this (pointing to the diagram <=1) is at most, isn’t it? At most one human, is it right? Emm, is member of is functional, which means, which is, is the same really, saying here, isn’t it? Emm, robot is a subclass of the alien team, ok, so robots, emm, are disjoint with humans, so you can’t have something which has emm, hold on, emm, so this is, emm, well, is member of, you might, that might not be, between this, emm, this individual, there might not be a something in the robot class, is member of might not have an object, and is member of might not have an object in the human team, so

I: but if there is no object, we consider that is wrong,

Ok, because, I mean, it seems to me, if you just look at this, and, emm, then I don’t see, maybe I bring my own preconception, my own knowledge I am thinking about this is being bit like Manchester OWL syntax, but I would said, emm, oh I see, yes ok, emm, yea, if is, if something, emm, is member of emm of emm it has, a robot, then, emm, it can’t be is member of human team, so, so , ok, understand that, yea, got it, I got it, yea, emm, yea this one is because of is member of, I think, is it member of a class there really, is member of a property, what that’s mean, emm, yea, ok, you can’t have is member of, emm, something because if you do have is member of something, it would have to be robot, and it would have to be a human, and they are disjoint, so that couldn’t happen, that’s my take, ok?

I: so how would you fix it? Make it satisfiable

04: 23 How I fix it? yea, emm, well, I would say that, I mean one of these axioms, 1 or 2 would have to go, well, one way is for one of these to go, is the thing, is the member of, is maybe the member of robot, or maybe is member of human, and remove one, alternatively, you could take out disjointness of course, emm, so, emm, well, you could do various, couldn’t you? You could take out the disjointness here, or you could move robot out of the alien team, so it is no longer disjoint with human team, emm, yea, so it depends really on what you’re trying to achieve in modelling

05:18 I: ok, this is the next one, we have the same, and now in this case, thunder is unsatisfiable

05:27 ok, so, emm, yea, yea, thunder is enhanced by some god device, yea, emm, god device is subclass of device, yea, superpower is disjoint with device, so, emm, why is class unsatisfiable, emm, because, because, thunder is enhanced by some god device, emm, which is a subclass of device, which is emm disjoint with superpower, emm, and, oh, everything in, emm, yea, sorry, emm, the range is in, is enhance by is superpower, emm, so if the range of is enhanced by is superpower and thunder is enhanced by god device, thunder emm, must be superpower? Must it? Emm, not getting this emm, sorry, my time is a bit slow here, emm, every, so, the range of enhanced by is superpower, thunder is enhanced by god device, by some god device, hence, thunder is enhanced by device, but the range of enhanced by is superpower, which is disjoint, so therefore, that show ?bility (?), so what you, so the next question is what to do about it, I mean, emm, again it must depend on what you’re modelling really, but, emm, superpower, I, I mean probably I would ex, I would take away the range restriction, would do it, emm, but, but then I’m wondering, I mean the other thing is, I mean this idea of god device, maybe that shouldn’t really be a subclass of device, because maybe god device is meant to be a superpower, so maybe you should take away that subclass relation, that would do it, yea, depends on how you want to, yea

09:20 I: and this one, it’s GWMultiPower and GWSuperSenses

09:31 ok, yea, so we got lots of subsumption, right relations here, emm, girl with multipower is a subclass of girl with power, girl with supersenses is a subclass of girl with multipower, multipower is a subclass of hero, hero is disjoint with girl with multipower, right, ok, yea, so, yea, so, I mean, the problem is you got girl with multipower, defined as being within the subclass of hero, but disjoint with hero, so I mean, girl with multipower is within subset of hero, but, subclass of hero, because the, because it’s a subclass of girl with power, emm, I mean, emm,

10:56 maybe the answer is, waw, I mean, I found it’s a bit subjective, maybe I take away the girl with power from subclass of hero, may, I maybe take away the subclass relationship, girl, all girl with power, heroes, emm, that would em do it

11:23 I: and this time, the property absorbs is unsatisfiable

11:30, emm, so, emm, absorbs, the range of absorbs is, is fire, this is saying, it says range of absorbs is heat, heat is subclass of energy, fire is subclass of matter, absorbs is subclass of resists, energy is disjoint with matter, emm, ok, so, basically the range, emm, the range of absorbs is fire from here (pointing to the diagram), and here we’re saying range of absorbs, emm, by inver, emm, since absorbs is subclass of resists, emm, the range of absorbs has to be, emm heat, and emm, and which is disjoint with matter, emm

13:10 so I would resolve that, emm, I would put, I mean, well, it depends on how you want to look at it, emm, I mean, I would put fire within energy, emm, then I guess read that pro? really, yea, or if you take ? energy and matter the same thing, take away the disjoint, this would be another way to do it, but still

I: yea, always take away the disjointness, always the solution

13:46 emm, right, so, info centre, where is info centre, the domain of info centre, is owned by is the domain, yea, ok, is owned by made info centre, lab is a subclass of R&D centre, yea, cache is a subclass of lab and armory, oh I see, ok, armory is a subclass of is owned by some human race, yes, ok, that’s what is saying there, info centre is disjoint with R&D centre, yea, so cache is unsatisfiable, emm, cache is subclass of lab, emm, well as you, I mean,

15:17 you just want the answer as you said, presumably you could always take away the disjoint, but I don’t see why this is unsatisfiable, I missing something here, emm, the domain of is owned by is the info centre, emm, and, so, everything in armory is owned by some human race, emm, ev, emm, yeah, this is strange, I, so cache is a subclass lab and armory, which means must be a subclass of R&D centre, that’s true, is owned by, domain of is owned by is info centre, ah, the domain of is owned by is info centre, emm, so, you can’t have things outside info centre, but on the other hand, this (dash arrow in the diagram) here implies, the cache is owned by only human race, it implies the cache can, be owned by, so I didn’t really get it actually

18:20 I: ok, so as you said that if something is owned by, something in here, then it must be in the info centre, but here, cache is owned by human race, and cache is not in here (unlabelled curve inside info centre at the diagram), so cache is wrong

Emm, ok, yea, so cache, because cache is subclass of armory, cache is subclass of is owned by some human race, yea, ok, I see, yea, yea, yea, got it, well, yea,

19:10 so as I said, you can always take away the, but is there any other way doing it other than taking away the disjoint, emm, well you can always take away the cache being a subclass of lab and armory, suppose, yea, I’m not sure, yea, I’m using the words a lot, because I’m used to, because it is a bit like Manchester OWL syntax, but got the same keywords as Manchester, and I’m sort of tending to use this much more than perhaps, people who are familiar with the diagrams with Manchester syntax, yea, I’m still find it much struggling with these dashed arrows, yea, ok, yea, alright

20:18 I: we have two more to go

20:21 so is base of is inverse of has base in, is base of, has base in, ok,

I: it’s just the domain of one property is the range of the other

Yea, ok, so bear is has base in only caves, aeroboat is a subclass of is base of some bear, so therefore aeroboat must be a subclass of cave but as aeroboat is disjoint, emm, then it can’t be the case, so

21:12 well again, you could just take away 4 the disjoint, or, emm, what if we just take away the inverse relation, that might do it, that’s, but obvious has base in, is base of, well, yea, ok, you can take away the inverse relation, yea, depends on what you want to achieve

21:48 I: ok, the last one

21:54 God race is a subclass of secret team, yea, iceman is a subclass of costumed, yea, and costumed is a subclass of god race, so iceman is a subclass of costumed, is a subclass of god race, is a subclass of secret team, secret team is a subclass of has member max 4 things, costumed, oh, right, I see, well so costumed is, as I just said, costumed is a subclass of god race, and hence is a subclass of secret team, so something which is in costumed is also in secret team, so that thing by ? Being in secret team that less than 4, emm, what was, has member relationship less than 4 things, but on the other hand, suppose to have relationship with 5 things, so that’s incompatible, so

23:06 emm, I mean again, depends on what you are trying to achieve, but maybe you really meant, less and equal to 5 there, emm, that would be one thing, or maybe some of these sub, subsumption relationships is wrong, costumed isn’t actually meant to be subclass of secret team, you could achieve that by, emm, well, costumed not be subclass of god race, or god race, yea, whatever

23:58 Q1

Well I don’t build lots of ontologies, but anyway, emm, well, as I said before, I am sort of flipping between the words and sometimes I’ve been using the words quite a lot. So it is not so different from looking it something in Manchester owl syntax trying to figure it out. I’m not using the diagram so much really emm, so I think I mean the real test would be if you didn’t give people the words, wouldn’t you, and force them to think in diagram maybe, but, so no, I don’t think what I’ve been doing is different from what I normally think.

25:08 Q2

Well I mean I don’t build big ontologies, I mean I sort of tend to build model of ontologies as part of the studies how other people think about ontologies really emm so, I tend, I’ve been using Manchester owl syntax sometimes, in one way or another, so I tend to sort of thinking Manchester owl syntax, so in this ? Thing really, sometimes I do draw diagrams and certainly diagrams subclass of it I just understand some assumption relationships, yea, I mean I still, yea, find the arrows a bit confusing really, sorry I think I lost I forgot what the question was, the question was (I: that question is describe your methods of ontology debugging, but the next one is how do you feel of using concept diagrams for debugging) I have to think a lot more about these arrows, I found it confusing, I think the idea of defining a property of emm a relationship, sorry the idea of defining the characteristic of a property, by drawing a diagram with this inverse property (he means the dash arrow) which is what you are doing in some cases, is a bit confusing, likes if we go back to what you, where is the one, is this one, it’s the one I already debated with Gem actually, it’s this one here what you defining, saying something is source by drawing a picture of an inverse and that I found confusing

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| **Task id by unsatisfiable** | **Solutions** |  |
| **(Mul)** Thunder | (1) delete axiom 1: isEnhancedBy Range SuperPower  (2) delete axiom 3: GodDevice SubClassOf Device | R |
| **(Mul)** Costumed, Iceman | (1) change axiom 4 to SecretTeam SubClassOf hasMember max 5 Thing  (2) delete axiom 3: Costumed SubClassOf GodRace | R |
| **(Mer)** GWMultiPower, GWSuperSenses | Delete axiom 3: GirlWithPower SubClassOf Hero | R |
| **(Mer)** Wood | No solution |  |
| **(Mer)** absorbs | (1) put Fire inside Energy  (2) delete axiom 6: Energy DisjointWith Matter | R |
| **(Mul)** Aeroboat | (1) delete axiom 4: Cave DisjointWith Aeroboat  (2) delete axiom 1: isBaseOf InverseOf hasBaseIn | R |
| **(Mul)** isMemberOf | (1) delete axiom 5: HumanTeam DisjointWith AlienTeam  (2) delete axiom 4: Robot SubClassOf AlienTeam  (3) delete axiom 1: Thing SubClassOf isMemberOf only Robot  (4) delete axiom 2: Thing SubClassOf isMemberOf only HumanTeam | R |
| **(Mer)** Cache | (1) delete axiom 5: InfoCentre DisjointWith RnDCentre  (2) delete axiom 3: Cache SubClassOf Lab and Armory | R |