31, OWL for 4 or 5 years, RA

(M)

00:26 ok, so, human and team and alien team are disjoint with each other, a robot is a subclass of alien team, then, emm we have that is member of is functional, and every individual in the universe has, is member of, no, yea, so, emm, they are functional, and every individual in the universe, no, no, that’s, emm, wait, emm, so this is, emm, that’s me first find out what this, so

I: oh, you can see, this is exactly one diagram for one axiom in this case, only in this case, so if you are not familiar with this

No, no, I just, I just, ok, so I can look here (pointing to the texts), no, just, no just my hunch just want to see what, what else this diagram means, so I understood that this meant functionality, but now ok, I see every individual has is member of relation to human team and every individual has is member of relation to robot, and so there’re two, and so it’s not functional, that means it’s inconsistent

02:02 I: yes, and how would you fix it

02:05 emm, so these, emm, two way to do it, either a drop the disjointness between human team and alien team, or I would, emm, get, emm, alright, I would get rid of functionality

I: ok, that’s it?

Oh, wait one second, emm, so this is robot, so yeah, that’s fine

02:40 I: ok, that’s gonna next one, ok, again, and this time cache is unsatisfiable, and how would you fix it?

02:51 emm, so cache is a subclass of lab and a subclass of R&D centre, emm, info centre is disjoint with all these ones, emm, armory is a, I assume this means that armory is either info centre or R&D centre, since it’s overlapping both, because these are two disjoint, can’t be and, yea, ok, so, emm, ok, so, human race is owned by armory, emm, so, so this, something in the info centre that, emm,

I: yea, this means domain (pointing to the pattern in training materials)

Yea, ah yea, ok, ok, alright, ok,yea ok, I can check with the, ok, so the domain of is owned by is info centre, and cache is unsatisfiable, ok, now I have to think about it, emm, ah now, ok, lab and armory, oh, this is a bit more complicated, not, emm, so for me what is a bit confusing now is that I also don’t know any of these words (means the context superpower etc.), so I don’t have any idea what these words mean, not that I don’t know the English terms, I know what they mean, but I can’t relate them to the, to anything in my mind now, so this means, ok, the armory’s owned by some human race, so the armory must be a, yea, the armory must be some, emm, yea, I can understand, ok,

06:48 ok, I mean, from these, all these ones, I can, I can drop many axioms to fix it, but just I don’t yet get the connection between the properties and the, and the problem, so I can just basically, I can just remove cache from subclass of armory, so I couldn’t, but if I would, I’ll do, but this is not, of course not ? one to choose in order to fix it, ok, let’s say, is owned by, do, emm, yea, so this here is the domain thing, what, this is the, this is, every arm, so every human race is owned by armory, no every armory is owned by human race, ok, so because, every (murmur) every armory is owned by human race, this means that every armory must be an info centre, info centre is disjoint with, ok now I get it, ok, yea,

08:10 so, emm, in order to fix it, I woud remove the emm, domain restriction for example, is owned by because then, emm, because then this means that the armory doesn’t have to be info centre anymore, then it’s fine with the disjointness with cache, so this is I would do. Now I think I understand slowly slowly what have to think about

08:36 I: ok, so do you want me to stop and explain what these words mean?

No, no, no, these words are fine, are fine

08:47 I: good, next one, do the same, and now this time is the aeroboat

08:51 ok, so, emm, unsatisfiable class is aeroboat, emm,

I: that means one domain is the other’s range

Yea, ok, so, emm, the domain, sorry, the domain of had

I: no, the domain of is based of is, also the

The domain of is based of is, ah, ok, ok, let me see, ok, the domain of, ok, these are just inverse declaration, ok, is based of, has base in, ok, then bear has base in, so every bear has a ca, emm, has a base in only cave, so, has base in only cave, and this is the ra, emm, one second, the, emm, some, so at least, so is, so every, emm, aeroboat is base of at least one bear, emm, and the b, cave and aeroboat are disjoint with each other, so, emm, ok, so, aeroboat is dis, em unsatisfiable because emm, it has at least, em because every bear is one of them, and ok, ok, it’s clear, ok, and then, and every bear must have a, emm, every bear emm, can only have a base in cave, so these, since these two are disjoint, this cannot be the case

11:12 so what I can do is, I can remove again the disjointness between the two, em, or I can emm, I can also, which I wouldn’t do but I could theoretically remove the inverse relation, but I wouldn’t remove the inverse relation, so I wouldn’t do it, what I would do is either remove the disjointness, or I, because what I don’t even know what aeroboat is, but probably I would assume that this axiom here is, I don’t know, every aeroboat, yea, I don’t know, yea, I would remove disjointness, I don’t know

12:00 ok, so everything in the domain has a resists relationship with something inside heat, everything in the domain has an absorbs relationship with something inside that, so this is, is this the subclass of? Yea, so that means that absorbs is a subproperty of resists, and em, here absorbs, emm, ok, ok, I can see already, so absorbs is a sub, sorry, absorbs is in a relationship with something in fire, fire, emm, and energy are disjoint, so and absorbs is unsatisfiable, so this means that, since I probably don’t want to make matter and energy, I want to keep them disjoint, emm, I would probably remove, emm, the, let me think, resists, energy, absorbs, heat, ok, this definitely not true here, so I don’t know, not every individual in the universe absorbs fire, so, emm, Tie, I don’t know, I would, I would rather, I would remove the range of absorbs to be fire, I think

13:56 ok, emm, ok, this is simply, so,

I: this one unsatisfiable

Multi power, supersenses are unsatisfiable, ah, right, because they co-occur here, ok, alright, yea

14:14 then I would emm, I would remove the, ok, this actually, so this is fine, so the only thing that is wrong is that the Multi, so I guess is multi power disjoint with hero, yea, this one I would remove it, of course I don’t know whether it fixes the problem, whether this is my modelling intention, probably not, wait a second, that’s not my modelling intention, my modelling intention is, so this is, what is GW?

I: girl with multi power, girl with

Ok, so, girl with multi power, girl with, no, then it’s fine, no, I want to keep like that

15:07 alright, so, em here I don’t know, so I know only iceman subclass of costumed, god race subclass of secret team, I don’t know how they intersected yet, emm, I also know god race subclass of, sorry, costumed subclass of god race, and here em that every secret team has at least 4 has member, max 4 has member relations, this max? Yea, max, and em every costumed has exactly 5 has member relations, so, emm, max 4, 5, secret, and costumed, so secret, costumed, I don’t know but costumed is subclass of god, so, wait, costumed in here, why is it, ah, ok, I have to ask you, why did you not draw sub, why did you not draw costumed in here?

I: because this pattern, this kind of representation I just explain every axiom here, we can merge it like the

Ok, this is just individual solution, ok, ok, no, no, no, so I would, I would like to be merged this way here, of course, but emm, so, god race is a subclass of secret team, costum, god ra, costumed is a subclass of god race, iceman is a subclass of costumed, ok, now, ok, secret team, yea, ok, alright, so in order to fix this one, I have, I would to do something here, so I would say I would change this has member equals 5 to emm, so I could either change this to, no, no, this is not right, so I would change this here to emm, to max 5, but definitely better to have them combine one axiom (he means merged diagram)

17:53 alright, so, emm, the range of is enhanced by is superpower, the, emm, every thunder is enhanced by god device, emm, god device is subclass of device, superpower and device are disjoint, and the thunder is the problem here, so thunder is unsatisfiable, because, the range of is enhanced by, the range of is enhanced by is superpower, now here that, ah, so every thunder has a god device, so it must be this is unsatisfiable, so god emm, so the range is superpower is god de, and god device, ah, so superpower and device are disjoint, ok, now it’s clear, ok, so,

19:09 what would I do, so god device is device, yes, superpower and device are definitely two different things, thunder is enhanced by god device, it’s fine, so now I would remove the domain restrict, the range restriction, or change it to something else

19:36 I: ok, the last one, this one is more complicated, and people don’t, some people don’t think there’s a problem here, so please try your best, and if you don’t understand, just think that we give you this kind of explanation (pointing to the diagram), and based on this explanation, how would you fix it?

19:56 ok, so I remember the grey means there is nothing in there, so wood is already by this diagram, is already unsatisfiable, emm, so, emm, so the domain of steals is, emm, this intersection, ah, the whole, ah, it’s villain, ok, ok, it’s villain, and villain, so this is exact representation of 4 axioms?

I: em not exact, because the first one, we can’t represent like this pattern, so I just change it

Ok, ok, ok, emm, so here it’s said that basically wood is, ok, this is nothing, so this means no, this here means essentially nothing there because this circle represents thing again, so, emm, so people and others are disjoint, ah, they are not disjoint, not according to this

I: yea, they’re disjoint

No, villain and wood are disjoint

I: yes, but that implies these two set, classes are disjoint

Let me see, let me try to understand this properly, so, emm, so e.g. What about people, they don’t appear in these axioms, so people is a subclass of villain and others is subclass of villain,

I: yea, we delete this (means people), this is unlabelled curve

Ok, this is unlabelled, so, emm, others is subclass of villain, but steals could, is, it has a domain of villain, villain is disjoint from wood, ah God, steals only wood subclass of others, steals only wood, steals only wood, you haven’t, this is not anywhere explained, but

I: where you feel confused about

Yea, the problem is not, em, I guess, no wait, so I don’t, this probably the problem, I don’t see the, this arrow to the others anywhere

I: here is could be something here, or something here (pointing to the unlabelled curve inside villain in the diagram), if it’s something here, then it’s the arrow to others,

Yea, so others steals only wood, ah, this is too complicated, it’s not that the, it’s not the so much the diagram, it’s just these things require too much, so if I would e.g. If I would now debug in Protege, I would probably, these ? Are very difficult part in your brain, so with steals only wood subclass of others,

I: yea, I know, because this one also took me one or two days to figure out why wood is unsatisfiable, so I just want to check whether our diagram can help it or not

So my problem is, how does this grey get in there? So the grey is not really, so up to now here I thought that these diagrams reflect the asserted structure of ontology, so it’s not anything inferred? This is all asserted, so these are the axioms

I: no, sometimes, because we merge it, and then we can have some free ride, so we can have some information inferred

So you would add the inferred information to the diagrams

I: I didn’t add it, but just because the way of generating or we merge it, it just automatically appeared

Ok, e.g. Subclass relationships, but this is basically the only, so, ok, yea, you’re right, yea, but e.g. This with, you know would making this thing grey, really require proper reasoning, I mean, this is not just structure reasoning like nesting classes

I: because the first one can’t represent in that one, so I just use an equivalent axiom to represent this one, and in that equivalent axiom, it need to use the grey area

Ah, emm

I: ok, we can skip it, and say that we don’t have solution for this one

27:58 Ok, emm, but I would like to know, the, just how this should be read, maybe just again the matter of practice

I: oh, just change only to some, that is the correct way, or you can always say that these two are not disjoint, but in the model, in fact, that one, only is too strong, so we need to change it to some

Ok, but, just write me quickly through the reading of the diagram

I: emm, so these two are disjoint, and the domain is the villain, and villain is everything, is the universe

And this is what I didn’t get

I: because all the other things are grey, and villain is in fact these two white area

Ah, that was what I was missing, ok, yea, now I, now, that is basically, see, this is just something that, if I would have practiced a bit more, I would gotten it quicker, but this is exactly what I was missing, so I didn’t mea, I didn’t emm make this emm step in my mind that every, that villain is thing, ok, so ok this is my reading problem, now it does make sense, yea, so I think in general this kind of reading, this can be very helpful if you could practice more, this, I think for you it would be good if you emm plan these studies to have more emm simple examples with rising difficulties over longer period of time, and then you can see that, by, if you do the 1st, 2nd, 3rd ... Experiment, or the 1st example, your performance will get better and better with this, and I think eventually once you have, you don’t have to go back to here (mean the training materials), and see, ah, this incoming circle is range, this outcoming circle, because if I have to puzzle my brain all the time whether this now means range or domain, that takes too long, then I get confuse, see this, see that, and also I don’t like to do anything under time pressure in general, so this is also one thing, so if you are in experimental setting like this where we are talking one to one, I feel like oh I locked my own brain, because I don’t want to be bad, but I also, so I only have my half brain to do the exercises, so it would be better to just have lots of simple ones until the, until these ones are really in, just lots of them, then very quick to do, and then do this more difficult ones in the second half for the experiment because really, you need to practice a little bit, I am not against this diagrammatic representations, but I need to practice the reading is the same way as I need to practice the description logic reading, and I do agree e.g. For anything that has to do with, emm, subsumption, disjointness, the clear case where the diagram can won, but also if you have, also with the grey, if I practice it, emm, but of course if you have to sub, but if you have to do this with the domains and ranges, and only and some all the time, you need to practice, you need to know, you need to read it very often in order to get it in your mind, but once you have it in your mind I think it might be helpful

32:10 No, it’s definitely different. So because, if you have, so, my, the normal approach to debugging is usually to axiom based, you have justification that you see 5 axioms, all of these, you consider all of these in sequence, whether they are true or not, and then you, em, if you can find one that is, that is untrue w.r.t. your model (?), you delete it. This one (means the study) is a bit, so, em here ? is more, erm, so you can see more immediately, because it is concept focused rather (?) than axiom focused, so you could see immediately whether there is something going to do anymore, this btw also some problem with this study, if this, so, if this thing with the unsuof, this, these domains (means the scenario of superheroes) are so unfamiliar to me, then makes me, it’s very difficult for me to make this, erm, to, lots over my brain trying to create the mental model of something. It could be a domain of university, or a domain of a person, could be, my brain wouldn’t have to, ?, I could just focus ? I think it is better to use a domain that is familiar to all the participants. And then you can see from the diagrams, you look at one thing, and you can see immediately what’s wrong, … potentially and she’s the axioms and go one by one, so yes, I think definitely different.

34:19 that’s more like what I said before. So the normal method is getting a justification, looking all the axioms in turn, and then trying, based on ?, see which one is the untrue statement, then deleting it, reasoning it again, see whether the problem persists, getting new justification, having some problem again (?), delete it, if, it’s not ? to my ?, just all the time.

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| **Task id by unsatisfiable** | **Solutions** |  |
| **(Mul)** Thunder | Delete axiom 1: isEnhancedBy Range SuperPower | R |
| **(Mul)** Costumed, Iceman | Change <=4 to <=5 | R |
| **(Mer)** GWMultiPower, GWSuperSenses | Delete axiom 4: Hero DisjointWith GWMultiPower | R |
| **(Mer)** Wood | No solution | R |
| **(Mer)** absorbs | Delete axiom 1: absorbs Range Fire | R |
| **(Mul)** Aeroboat | Delete axiom 4: Cave DisjointWith Aeroboat | R |
| **(Mul)** isMemberOf | (1) delete axiom 5: HumanTeam DisjointWith AlienTeam  (2) delete axiom 3: Functional: isMemberOf | R for (1), not for (2) |
| **(Mer)** Cache | Delete axiom 1: isOwnedBy Domain InfoCentre | R |