26, familiar with Protégé, OWL for nearly 2 years, PhD 2nd year

(M)

00:38 so I’m familiar with justifications, so a very simple fix is to remove one of these axioms, but I presuming you don’t want necessarily that be the case, you want some modelling as well, so let me think about it for a second, emm, so that’s arc’s inverse, it’s range, so, yea, the range, the domain of is owned by is info centre, ah there is at least one armory which is owned by human race, let me think, emm, those are intersects, so that’s, ok, I think, hold on, cache is unsatisfiable, ok, so presumably just from here and here, we don’t want cache to be, emm, cache to be an info centre, that would be very strange, emm, cache, so we might need to change

02:02 the, emm, let me think, I’m s, I think, to my mind, lab, we are trying to model lab wouldn’t be necessarily suitable one, so if we remove the and here (in the axiom 3), or, so it’s just part of the armory, it’s no longer in the intersection, so it’s just forming the armory that might help, although let me think about that,

02:34 I: ok, so your idea is to change axiom 3 and

To weaken it to, to, so that, hold on, is it? yea, that would be a weakening, because we’re no longer working in the intersection, so won’t be here (pointing to the diagram where cache is), it should be here, I think that would work, I think, emm, maybe weaken the domain as well, emm, but then, let me think about that, human race has, human race, ok, then, no. 4 seems reasonable like it should be owned by human, person, race, emm, otherwise, another thing maybe to say whether 5 is necessary, so might on necessary be the case that you want info centre to be disjoint with R&D centre, it would be ok to have them to be, emm, to overlap in some instances, especially you have cache subclass of lab and armory, you want to keep that kind of idea, then there is some argument that they are not disjoint, I think those are kind of fixes, so maybe remove 5 or weaken 3, is it ok?

03:52 I: ok, this is the next one, and this time is the aeroboat

03:59 ok, emm, so cave and aeroboat are disjoint, don’t think that, emm, yea, ok, I see, this is an inverse relationship between those two, and that’s, emm, that is a, no, it’s, it’s no sign of, it’s not telling you, it’s just, just telling you the inverse, has base ? bear, only, ah, yea, bear has base in only cave, I think which is, yea, and then, oh, is base of bear, ok, emm, I think, that’s why,

05:05 so I don’t think, again you could remove any one of these, would technically fix it but it’s not helpful, cave and aeroboat should probably be disjoint, w.r.t. modelling I don’t think that make sense to make cave and aeroboat, so we need to weaken one of the other axioms, emm, is base of and has base in is also something in logical relationship that make sense, so we may not want to drop that one, so that would make 1 and 4 from being changed, so the question is whether, which one of these has, has some class of base in cave, aeroboat one, oh, hold on, emm, why would an aeroboat be the base of a bear, for a bear? So, emm, yea, that’s, I think no 3 isn’t make much sense, so I, in fact 3 probably the, the incorrect argu, axiom that, and you probably don’t want that one at all in your modelling

06:06 so your suggestion is, em, delete axiom 3

Yea, emm, I mean this one make sense the has base in only the cave, aeroboat being, necessitating is base of for some bear is a bit strange if, if, I’m not sure why there has an aeroboat, so

06:35 make sense, so you said that you can either just delete 3 or you can delete 4 or 1, right?

Well I mean you can delete any of these ones that would technically remove the entailment, the trouble is, I think 1 and 4 are fine, they are correct, w.r.t. the modelling, if you think about it like is based of should be inverse of has base in, and cave is not an aeroboat, so, yea, you still have ? one, does not make much sense, even just languishly

07:10 I: ok, this one

07:12 ok, sure, so this is, emm, subproperty stuff, yea, ok, so this one is the subproperty resist, so absorb is subproperty of resist, just like that, emm, is always modelled, emm, maybe not always modelled, let me think, yea, discussed as range, so I was, yea, it is modelled to range in, it is in the range of heat and fire, ok, that one unsatisfiable is absorbs, okeydokey, emm, heat is subclass of energy, make sense, ah, fire is a subclass of matter is a bit strange,

08:16 so I mean you could take away 4, emm, let me just think if there is anything else, energy is disjoint with matter, depending on your point (?), I guess physics you may disagree with that one, I think most people would say maybe 6 is ok to keep in, so that’s alright, absorbs is subproperty of resists, I push you might want to change that one as well, that you might think that, that’s something strange, that’s not wanted would push, I think forward, for the simple ones to remove from the, from this class

08:51 I: this one, GW means girl with

09:02 no problem, so, oh yea, two unsatisfiable classes this time, oh, they have the same justifications, interesting, ok, emm, so actually, is it all four axioms contribute to this and this? A subset of them contributes to this, and a subset contributes to the second one?

09:32 I: no, the reasoner didn’t tell you anything about it

Ok, fine, fair enough, emm, so we have a lot of subset relationships, one is disjoint with, so we go multipower, emm, emm, domainwise (?) you could have an argument that emm, so, just look at this because it’s the same information, 3 is kind of, emm, maybe arguably not the case having, simply having a power doesn’t automatically make you a hero, that’s dis, that’s, also we may argue that hero shouldn’t be disjoint from somebody has powers, that’s also something that’s not logical, so 3 or 4 would be one would emm, be candidates for, for, deletion, depending on how you modelling is

10:28 I: this one

10:38 em, max 4, yea, something, something, costumed, there is no inverse there as well, that’s, that seems ok, emm, costumed iceman are unsatisfiable, ok, I think, so we, from this we have like a whole chain of iceman is secret team, emm, but, seems like this one is the one causing the problem, because you got the cardinality difference that equals 5 is less than 4, so question is, emm, hmm, let me think, so there is no reason why a secret team has to have exactly 4 things, but say, and again, emm, emm, this one is little strange, actually I’m not sure why we make costumed is part of god race, but never mind, I’ll think still one costumed be to be, so maybe costumed shouldn’t part of secret team, it’s consequence anyway, but emm, let me think,

12:13 so you could change this one, could make that slightly larger so that max 5 things, and that won’t matter, emm, but maybe you also want to change some of these as well, because they, at least wording of them seems a little bit strange, emm, depends on what iceman meant to be individual, meant to be a class of people, so you, a team of iceman, emm, because if it’s not a team of iceman, then arguably you shouldn’t have the consequence that iceman are, team, secret team, or god race, or whatever, so emm, yea, just thinking you could change some these (means first three axioms), or probably you want to change the cardinality thing if you want to keep these

12:58 I: ok, just change the subclass of based on what kind of thing you want to model, right?

Yea, yea

13:11 I: (giving a new one)

13:16 so I have a range of superpowers, so is enhanced by has range of sup, is it right? Yes, I am, is enhanced by superpower, good, good, that’s inverse relationship (means the dash arrow), and, oh, is at least one of, so god device is enha, no, thunder is enhanced by one god device, god device is subclass of device, and these are disjoint, ok, this is unsatisfiable class, that thunder, right, thunder has to have, yea, has to have that relationship, god device has to be, has to be superpower though and from device, god device is device, emm, so again, this is all, it comes down to what you think, emm, modelling should be, but say, no. 4 for instance, you might disagree that superpower shouldn’t be disjoint from device, because you have superheroes that, their powers are devices due to special things, and suppose it’s god device, em which is the supclass of dev, no, god device is a subclass of device, that’s even better, then technically speaking, that’s kind of, I don’t know, emm, to do with powers more than machinery, but that depends on what device meant to be machinery, I can see kind of why they model this one, the way is, or, you can move god device into superpower (in axiom 3), and then it would be fine as well, we no longer worry about device at all, you can keep forward, and move free to be either on its own or superpower, emm, in fact, you have to do that to keep 1, emm, yea, yea, and I think maybe you probably want to keep 1, and 2, makes, make some senses, because, yea, since thunder is made by gods

15:26 I: (giving a new one)

15:31 ok, cardinality again, emm, this one is, ok, there is no ? one, it’s not subproperty thing, it’s just general individual of, individual is member of at least one, at max one robot, has at max human team, alien team disjoint, robot subclass of alien team, and yea, they are functional, yea, that was the, yea, yea, other one, yea, ok, emm, let me think, well,

16:11 simple one probably is robot is an alien team, because if it’s not, then you can re, maybe that’s wrong, respect to the modelling, emm, it’s quite not sure whether everything should be modelled in a way that they have is member of relationship, so one of these two (axioms 1 and 2), maybe maybe that’s far too strong, maybe you want to restrict the, emm, these relations is member of only robot, is member of only human team, to be particular part of the domain, so, I don’t know, maybe not human team, but, a human is a member of only a human team, a robot is, yea, so, that’s another thing, if you weaken these, I suspect you would, you, you should be able to get a satisfiable property, but you probably have to weaken both of these, emm, functional makes sense, because you, I’m taking you probably one object that model to

17:11 I: so your suggestion is in the axiom 1 and 2, change the Thing into e.g. human team this kind of things, or, you can delete 4, right?

Yea, depending on how you want to go about it.

17:27 I: ok, the last one, and it’s more complicated,

Ah, had the nothing

I: yea, and also in concept diagrams, we can’t directly represent it (pointing to the axiom 1), so I just change it as an equivalent axiom and represent it. And this is, some people maybe cannot find why it is wrong, so just please try your best, and based on the diagram, and give me some solution, it is ok if you say that I don’t have any solution for this, we just want to check whether diagram can help you to find some way to fix it.

18:04 Sure, emm, although this, I, just say at this time, the way it’s written now, you could take that as axiom, I know it’s not here, but wood is just subclass of nothing, just be aware, because it might confuse people, but I know it’s not here, so I know it’s not something I have to, because it’s an obvious one to change, but let me think about it, ok so we have a steals relationship and this is the whole box, so and it’s going away, so that’s domain I think, and the steals relationship is domain of, yes, villains, because that’s big one, these two are overlapping, so people, is that people?

I: no, it’s removed.

Ok, others based subject, ok, ok, emm, so that makes sense, but this one, steals only wood, subclass of others, ok, so that’s, is that moved into, that’s meant to be moved inside others, ok, that makes sense, steals domain villain, others subclass of villain, ok, and villain is disjoint with wood, let me think, I’ve seen something like this before, with my, my own research, I’m just trying to think what it is, I think one of, so emm, this is, emm, let me think for a second, wood is the unsatisfiable one, ah, ah ha, ok, I think I know why, I just got to think through the reasoning, I’m not sure can use the diagram to do it, ah emm, let me think, so if it has a wood rel, has a steals relation, ah, can only be, to wood, so that makes it subclass of others, so it makes subclass of villain, that’s fine, if it’s, and yea, so that makes thing with the relation, emm, a villain, I mean it’s the villain, it’s also vacuously for fill if there is no relation, so this one makes these three (the first three axioms), I know where this example from now, from I’ve seen, it’s the movie example, these three give you the villain is everything, and this means villain is disjoint with wood, and because wood, because villain is everything, means wood is unsatisfiable, so arguably you don’t, maybe you don’t want villain to be that strong, so, weaken one of these three, that 4 make sense, so you, just trying to think what you probably want to do, maybe 2 is a bit too strong, making others which I don’t know what that is, is subclass of villain, maybe it’s a bit too much, emm, it makes sense that stealing is an action is a domain for villain, so and maybe, actually I don’t know what I should change this, the thing would help, emm, but you could also just, would clap thing so, that probably wouldn’t help, just put subclass steals is a subclass of villain, emm, but yea, there is a, I think probably 2 is the one you want to just change at the moment

22:01 I: so your suggestion is to delete 2. Yea, in fact the diagram also means the same thing, it said that villain is equals to everything, because outside villain, they are all empty, so villain is the universe, the Thing, it’s too big,

Oh, ok, I mean I would expect this to be, everything in villain to be white,

I: yea, because these two parts (pointing to the unlabelled curve inside villain at the diagram) is equals to villain,

Ah, ok I didn’t, sorry, I didn’t grasp that,

22:57 from what I would normally do, I just, I’m just concerned with consistency of the logic, I don’t care about modelling, my own research is involved in finding justifications, these explanations, actually have error in them, for, where reasoner has incorrectly inferred something, we are evaluating those, but I suppose it’s, you kind of still have to reason about it at the same way, and think about, you know, what’s going on in the domain, little bit, because if you’re doing any modelling, you have to think, both, does an error here? Do I need the axiom? So it’s a little bit of different, but it’s only because of what I do. It’s also kind of different in a, I guess you have both of these things (Protégé and diagrams), and, I, I mean, honestly, I’m more used to using texts, that’s the case, but also because I do it every day. And I think it’s probably unusual for the subjects, so I was trying deliberately not looking at the text, so I was using your images, em, but wasn’t using the texts, I’m not sure whether it’s right. Emm, it’s little, I think it takes time to get used to this, maybe I need more time of it to get fluent so to speak, emm, once it goes into my head, once, the reasoning is kind of the same, so, a kind of once you understand what’s going on, the, I think probably the thinking about logic and domains, is kind of the same thing, what you can do with them is suffy (?) you know. So it’s, it’s different in the sense of how you get the information and different, it’s the same once you know what the information is.

24:53 ok, because I don’t do, as I said, I don’t do lots of it, but if, it’s all, as it say, you always want to relate it back to the coherence of domain, and, so as you heard, I was slightly articulating arguments, that’s why you may not what you want to do, one thing. The other thing, and, I mean, because I don’t do very often, maybe people have really better arguments than what I have said, by thinking that how you go about doing it, like you would, you have some discussion, probably with other people, to serve (?) in your, is that correct, em, and, em, ok, and you just be trying to articulate good reasons why you think something is wrong, the tricker (?) as you know was the justifications, is trying to break them, but it doesn’t necessarily mean just remove the axiom, so I have to, when we talking about it, I was thinking of other ways sorry to say (?) chop them out, or chop one out, because that will give you, that will break it, but that one help you mostly

25:55 I think it will be interesting, I think for something would be, erm, confusing a little bit, because there’re lot of, you can have lot of information, I think pair of that (?) make sense, like, emm, but just on its own it might be, just a bit like, I’m not sure what’s going on, but, because we always trying to relate back to the logic syntaxes, emm, yea, I suppose, if you don’t mind me speculate my own stuff while I’m just trying to say, ah, what is right or wrong, that might be interesting on its own (?), I don’t know how would you do that with these diagrams, you could, might be more obvious actually when something is really really obviously wrong like, something shouldn’t be disjoint as not treated by the reasoner, emm, going back to the domain modelling, eemm, I think it would be helpful, I think as an option, as an option that you should be able to explore and see, what you might want is to control amount of information you can see, like, where some axioms are sort of, are pretty quickly easily understandable as the text format, like disjoint with, maybe you don’t need it, but say with subclass axioms, you have like 5 of those, and they give you like unlayered, you could put all of them in the circles, and you can see that, I mean people can read those any way very quickly but some summarization pin pointing, like the relation stuff I think it’s been, so that’s, what your advance has been coming, where the small ones maybe just leave them out, because you don’t need many things on screen, you just focus on the ones that really give people trouble

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| **Task id by unsatisfiable** | **Solutions** |  |
| **(Mul)** Thunder | (1) delete axiom 4: SuperPower DisjointWith Device  (2) change axiom 3 to SuperPower SubClassOf Device  (3) delete axiom 3: GodDevice SubClassOf Device | R for (1)(3), not for (2) |
| **(Mul)** Costumed, Iceman | (1) change 4 to 5  (2) change subclass relation based on model | R |
| **(Mer)** GWMultiPower, GWSuperSenses | (1) delete axiom 4: Hero DisjointWith GWMultiPower  (2) delete axiom 3: GirlWithPower SubClassOf Hero | R |
| **(Mer)** Wood | Delete axiom 2: Others SubClassOf Villain | R |
| **(Mer)** absorbs | Delete axiom 4: Fire SubClassOf Matter | R |
| **(Mul)** Aeroboat | Delete axiom 3: Aeroboat SubClassOf isBaseOf some Bear | R |
| **(Mul)** isMemberOf | (1) delete axiom 4: Robot SubClassOf AlienTeam  (2) Change axiom 1 : Thing to other class based on model  (3) Change axiom 2: Thing to other class based on model | R |
| **(Mer)** Cache | (1) delete axiom 5: InfoCentre DisjointWith RnDCentre  (2) change axiom 3: Cache SubClassOf Armory | R |