

Interpretation of disjunction in law texts: conditions for deontic models

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Abstract

We follow Solan’s groundbreaking work of applying linguistic methods on the interpretation problems judges face in the court of law. We investigate an example concerning the exclusive interpretation of disjunction and demonstrate significant caveats in Solan’s solution and approach as a whole. We follow this by doing a case study of legal discourse to demonstrate that alongside assisting lawyers, semantic work on law texts can reveal valuable new data that contributes to the discussion of semantic puzzles in deontic contexts, such as the free choice puzzle. The paper suggests two conditions for future work on deontic models.

Lawyers and judges complain about the ambiguity of language because laws are written in natural language and, thus, court judgments sometimes rest on the interpretation of the text. Mellinkoff [1963] convincingly shows that judges have been aware of interpretation difficulties for centuries but the trailblazing semantic investigation of these issues appeared in Solan [1993] where he looked into the US legal system. Both Mellinkoff and Solan investigated the coordinand “or” as it poses particularly difficult puzzles. An investigation of data from the World Trade Organisation (WTO) found interpretation

puzzles similar to those discussed by Solan in international law. The first part of this paper will discuss Solan's examples and compare them with those found in the WTO corpus.

As judges and semanticists have very different aims and methodologies, attention must be paid to differences in their approaches. Solan applies semantic methods to the problems of lawyers. We will follow this approach and discuss a case study to show that the current simplistic interpretation rules of lawyers are insufficient and argue for a more holistic approach provided by semantics. This section might also be helpful for lawyers. Yet, while following Solan's work is demonstrated to be a viable project, it has caveats that need to be taken into account, and it also remains unclear why it would be of theoretical interest to semanticists.

We will instead proceed to show a different approach to the interaction between law and semantics. We will do a case study to outline the conditions that a semantic model of legal discourse must satisfy. This second section will be aimed at linguists to demonstrate that the study of legal discourse can reveal new data that contributes to the ongoing discussions on semantic puzzles.

1 Can semantic methods be applied to the interpretation problems of lawyers?

We will discuss an example from Solan [1993] in which lawyers struggle with the interpretation of disjunction. For comparison, we will add examples from the World Trade Organisation (WTO) corpus that showcase similar issues.

Solan [1993] argued that one can apply linguistic methods to the interpretation problems of lawyers. He discussed various examples from a linguistic perspective, evaluating the statements made by judges in courts of law. While Solan's effort is groundbreaking,

it is not obvious that applying linguistic methods to legal disputes is uncontroversial. In fact, Roger Shuy has commented in Shuy [2007] that judges often reject linguists as valid experts in the court of law. Shuy correctly argues against many of the professed reasons for rejection, but the fact that lawyers and linguists do not traditionally work together remains and should be investigated.

This section will take an example from Solan and analyse it in light of a very similar case from the WTO that comes with explicit comments by the judges of the WTO, and then discuss whether linguistic methods apply and what they suggest. The example from the WTO demonstrates that the issues with the interpretation of disjunction are not dependent on the US legal system, and the WTO example has an established basis for semantic interpretation. Article 31.1 of the Vienna Convention on the Law of Treaties that governs the interpretation of WTO texts states the following:

- (1) “A treaty shall be interpreted in good faith in accordance with the ordinary meaning to be given to the terms of the treaty in their context and in the light of its object and purpose. “

The provision that, under international law, text interpretation should incorporate the investigation of the ordinary meaning of terms opens the door for the study of the meaning of language. A linguist should not compete with a lawyer in terms of knowledge of laws, procedures and principles of law but their expertise is relevant in questions concerning the ordinary meaning of language.

The example for investigation gravitates around whether disjunction has an exclusive or inclusive reading. Solan’s example runs as follows. In 1957, a stepmother of a boy committed to a school for delinquent children was ordered to bear some of the expense of incarceration. She sued, though, because the boy’s father already contributed to the expenses and she argued (with some success) that the disjunctive law in (2) should be read exclusively, so that she could not contribute after the father already did.

(2) “to compel such parent or other person legally chargeable to contribute”

She won her case in *Department of Welfare of City of New York v. Siebel*, but was overturned in the court of appeals, the New York highest court. The high court argued that “or” should be interpreted as “and” whenever possible and as “or” in other cases. Solan holds that “or” should be exclusive but this claim should be investigated.

In fact, Solan’s position appears to be well respected among lawyers. Legal drafting textbooks and lawyers in journals have similarly argued that disjunction is always exclusive. For example, see Adams and Kaye [2006]. But it is not difficult to find counterexamples to a model where disjunction is always interpreted exclusively:

(3) If a pupil smokes or drinks alcohol, then he is expelled.

(4) Do not break or soil airplane seats.

Both of these examples have salient readings which are strongly inclusive. If a pupil both smokes and drinks alcohol, native speakers say that he or she should be expelled. Yet, if disjunction were exclusive, this would predict that doing both would not satisfy the antecedent and, thus, there would be no cause to expel such a pupil.

The salient reading of negated disjunctions is also one in which negation is distributed into each disjunct, such that one could rephrase this example as follows:

(5) Neither break nor soil airplane seats.

We must thus conclude that disjunction cannot always be exclusive, yet this does not solve the ambiguity. It should also be noted that it is in fact problematic that linguists do not have uniform solutions to the interpretation problems of lawyers. In light of the above examples we are forced to reject Solan’s initial solution and, thus, we cannot straightforwardly argue that linguists can solve the problems of lawyers. But the following demonstrates that linguistic methods and previous work can contribute to solving of these puzzles.

We found a case similar to Solan’s example in the WTO corpus, where India in dispute number 345 argued similarly to the stepmother. In a situation where the US was asking for two different types of deposits on a transaction, they referred to an Ad Note to the WTO Anti-Dumping Agreement that states (6).

(6) “a contracting party may require reasonable security (bond or cash deposit)”

The example gives permission to ask for reasonable security, and the form of the security (but not the sum total) is guaranteed to be reasonable if it is a bond or a cash deposit. India argued that the “or” in between bond and cash deposit should be read exclusively such that it only allows for either a bond or a cash deposit, but not a combination of both. One can test intuitions on the following example that translates the complicated legal language to a more familiar setting:

(7) You may visit reasonable entertainment (cinema or theatre).

The judges of the WTO disagreed with India and ruled that the language does not suggest that a combination of bonds and a cash deposit is necessarily unreasonable. But they did not explain the point, but merely asserted this. The language they used is reproduced in (8).

(8) “we see nothing in the text ... to suggest that the combination of both (otherwise reasonable) forms of security necessarily results in a measure that is unreasonable. In particular, the text ... does not provide that the form of security will only be reasonable if either (i) cash deposits or (ii) bonds are required”

Semanticists seem to have reached consensus on exclusive disjunction, and they concur with the high court of New York and the judges of the WTO. In semantic publications, disjunction is taken to be inclusive. See for example [Simons, 2000, Groenendijk and Roelofsen, 2009].

One of the key arguments in favour of an inclusive reading of disjunction is that one can perform a local test for exclusive meaning by continuing a disjunction with the conjunction of both disjuncts. If disjunction were exclusive, the conjunction would be contradictory and native speaker intuitions would detect this, similarly how, in the following example, the second example is regarded bad due to a contradiction:

(9) Charles does not have any potatoes.

(10) #Charles does have any potatoes.

The reason for the second sentence to be judged bad by native speakers is that “any” requires a downward entailing context, for example negation. In the absence of a downward entailing context, the utterance feels contradictory. A similar judgement should follow exclusive disjunction in conjunction with both conjuncts, which allows us to test our intuitions on (11)

(11) A contracting party may require reasonable security (bond or cash deposit, and a combination of bonds and cash deposits).

Unlike (10), native speakers judge this and other such sentences to be acceptable, which means that disjunction itself cannot be exclusive.

Yet, there exist some examples which strongly suggest an exclusive reading, for example:

(12) I will invite John or Mary to the party.

The intuition people tend to have on this sentence, is that only one of the two will be invited to the party. Yet, this example can also pass the test:

(13) I will invite John or Mary, and possibly both, to the party.

Once again, no contradiction arises.¹ In fact, the intuition that (12) is exclusive seems to arise pragmatically through reasoning about the information state of the speaker. For a person to utter (12), as a rational person, he should have considered other alternative utterances:

(14) I will invite John and Mary to the party.

If the intent of the speaker were to invite both, this alternative would be much better suited for the occasion. From the fact that the speaker chose to use (12), we can thus infer that he does not intend to invite both. This inference does not concern the semantics of disjunction, though, but rather the information state of the speaker, and we can conclude that disjunction remains inclusive.

Furthermore, one might ask whether (6) with an inclusive disjunction would not better convey its meaning if the disjunction were replaced with an “and” as in (15).

(15) A contracting party may require reasonable security (bond and cash deposit).

This phrasing would not be preferable, though, because conjunction gives rise to its own ambiguities, and an available but strict reading of (15) says that the form of security that is considered reasonable is one in which both a bond and cash deposit is required simultaneously. As this is the strongest reading of the utterance, it might even be convincingly argued that the drafters of the text intended both bonds and cash deposits. Due to this, the substitution with conjunction remains dispreferred.

So, while the high court and the judges of the WTO agree with the conclusion of the semanticists, they do not apply linguistic methods to support their language interpretations. In this regard, semanticists can assist lawyers and judges in that part

¹Note that I added the modal operator “possibly” which is required because a disjunction generally provides choice between alternatives, and in this example, adding “I will invite ... both” would remove the choice. “Possibly” retains the choice, without prejudicing the addition of a third coordinand that suggests that both could be invited, that would be precluded by an exclusive reading of disjunction.

of their work which deals with the ordinary meaning of legal texts. Semantics has a large store of knowledge and an effective methodology that would allow judgments on language to be reasoned and consistent.

Yet, it is not clear whether semantic methods can be applied to all types of examples that Solan considered. For example, Solan discussed the following example concerning harassment. A person is found guilty of harassment in New York if:

(16) (a) "with intent to harass, annoy or alarm"

(b) "he engages in a course of conduct or repeatedly commits acts which alarm or seriously annoy"

This was tested in the case *People v. Caine* and the court recorded the following facts.

"On February 20, 1972 the complaining police officer stopped the defendant for a traffic infraction and while writing the tickets the defendant approached and argued with the officer. He was advised by the officer to go back to his car but returned again. At this time the defendant stated that the officer should shove the summons up his F* a*. In response to the officer's questioning "what did you say?" the invective was repeated. At this point the officer alighted from his car and again directed the defendant to return to his vehicle. Again the defendant is alleged to have stated, "Go F* yourself" and in response to the officer's inquiry repeated the words."

The crucial fact is that the defendant repeated his acts, which aligns with the second disjunct "repeatedly commits acts which alarm or seriously annoy". The court, in response, did two things, it found that the defendant had demonstrated no "intent to harass, annoy or alarm" as required by New York, but instead merely expressed himself immaturely. This means that he did not fulfil condition (16 a) and was thus innocent.

Yet, as the second act, the court continued to state that the disjunction in the law is too lenient as it merely requires one to demonstrate a course of conduct or a repeated committing of acts. They invoked the and/or rule, which is stated in New York as follows.

“[T]he words “or” and “and” in a statute may be construed as interchangeable when necessary to effectuate legislative intent.”

This rule is used in cases where drafters or texts seem to have used “or” when they should have used “and” or vice versa. Judges may, referring to this rule, to change the text of the law to better represent what they deem to be an adequate representation of the drafters intent. So, with respect to harassment, they deemed that the law should be read differently.

(17) (a) “he engages in a course of conduct and repeatedly commits acts which alarm or seriously annoy”

After this strengthening, one must interpret the law to require both “course of conduct” and “repeated committing of the act.”

As a linguist, there is very little to be said about this case. The judges apply a legal rule of interpretation, which is out of the scope of linguistic analysis and replace one coordinand with another. A linguist can analyse either coordinand but exchanging one for a different one remains outside of linguistics.

This discussion has glossed over the fact that semantics deals with modeling natural language. It is the construction of a model that is valuable and stores our knowledge about natural language. Talking about interpretation of “or” without models is superficial and detached from actual work that linguists do. Modeling the use of ordinary language in legal discourse should follow from ordinary linguistic work, but there are aspects to deontic contexts that require additional attention. One might merely assume

that linguistic work on deontic contexts applies to the legal domain, but it would be more prudent to investigate this claim. The following section studies legal discourse for conditions for deontic models, such that those models might in the future be of assistance to lawyers.

2 How legal discourse can help semanticists

Until recently, legal discourse has been of little interest to semanticists. Well known work on deontic contexts has taken examples from everyday use of permission and prohibition, see for example Kamp [1973], Simons [2005].

As we saw from the application of a semantic method of interpretation on disjunction, legal discourse is not entirely detached from ordinary language. Beyond the fact that semantics can assist lawyers, the door is now open for semanticists to further investigate legal discourse as a corpus of examples that sheds light on reasoning in deontic contexts.

As was previously mentioned, the applicability of semantic methods to the interpretation problems of lawyers is not uncontroversial. One should also investigate whether there is discord between the predictions of current semantic methods and legal discourse, such that semantic models could not be applied.

We saw in Solan's and WTO examples that judges interpret laws and that laws include permission utterances. A standard approach to model deontic permission can be found in Kratzer [1991] where deontic modals are defined through reference to a conversational background - a function to what the law provides. For example, a permission sentence is defined as being compatible with the conversational background. The problem for a semanticist interested in legal discourse is that Kratzer's approach assumes laws to be primitive entities that provide the conversational background. When

one is interested in the interpretation of a permission sentence that is a law itself, their model would need to interpret the permission utterance with respect to itself and such a circular method fails to make predictions. Despite the many merits of Kratzer's approach, one interested in legal discourse must find a different model for permission. This introduces the field of legal discourse as a source of conditions for deontic models that will be investigated through the following case study.

2.1 The example

This section will do a case study of legal discourse to investigate the conditions for semantic models within legal discourse that will ground further work on the semantic problem of free choice. The case study develops XXX to draw general conclusions regarding models for legal discourse. This section will not provide a model itself, and will further limit itself to investigating disjunction.

The case study will discuss the example in XXX, which was chosen for apparent deviance in the behaviour of disjunction in legal discourse. For a more detailed look at the example and the WTO dispute system, please see the previous paper.

The background story to the example runs as follows. The complainant of the dispute number 27 can produce bananas cheaper than the respondent and so the respondent's bananas were no longer being sold. The respondent reacted by placing a tax on all bananas except his own. The respondent also provided a way to avoid the tax. If one buys the respondent's bananas and then sells them within the respondent's country for profit, one will be allocated licences that exempt them from the tax because they will be considered to be inside the "tariff quota." The complainant finds this unfair as selling under the "tariff quota" still reduces his profits because he needs to first buy more expensive bananas instead of directly selling his own cheaper ones. This led to the following exchange.

Note that a dispute is standardly begun by a complainant's claim that some policy is inconsistent with a specific WTO article. This follows the WTO regulation set down in the Dispute Settlement Understanding article 6.1:

- (18) The request for the establishment of a panel ... shall ... identify the specific measures at issue and provide a brief summary of the legal basis of the complaint.

The specific measures at issue are the policies of the respondent that the complainant contests. The legal basis for a dispute should refer to a particular WTO law or laws that are being violated by the aforementioned policies. The example at hand adheres to these guidelines:

- (19) Complainant: “[the respondent is] inconsistent with Article III:4 of GATT because this licence allocation amounts to a requirement or incentive to purchase [the respondent's] bananas”

The complainant claims that the respondent's licence allocation for bananas is the specific issue at hand. The legal basis for the case refers to Article III:4 of GATT. It is claimed that the article does not permit requirements or incentives to purchase goods. The wording of the article is reproduced in (20).

- (20) “The products ... of any Member imported into the territory of any other Member shall be accorded treatment no less favourable than that accorded to like products of national origin in respect of all laws, regulations and requirements...”

Note that the article specifically mentions requirements. It does not explicitly mention incentives. This can be shown to be the source of the alleged deviance in the behaviour of disjunction as it leads the respondent to reply to the complaint with the following utterance:

(21) Respondent: “[the respondent] does not force any trader to purchase any quantity of [the respondent’s] bananas”

(19) includes a disjunction between requirements and incentives. Assuming that “forcing purchases” and “requiring a purchase” are synonymous in this case, then the respondent only negates the disjunct that mentions requirements. Standardly, the negation of a disjunct allows, through a process of elimination, to conclude that the remaining disjunct is true. This is the case because for a disjunction as a whole to be true, at least one of the disjuncts should be true. The panel deviates from this standard inference regarding disjunction, as it does not use this simple eliminative reasoning process.

The respondent probably knew that article III:4 of GATT does not refer to incentives, and hoped that the panel finds against the complainant because one cannot establish a link between incentives and the WTO article that only mentions requirements. Unfortunately for the respondent, the panel cited a prior case linking incentives and requirements:

(22) “this obligation [described in (20)] applies to any requirement imposed by a contracting party, including requirements ‘which an enterprise voluntarily accepts to obtain an advantage from the government’”

The panel reasoned from the fact that the respondent provides incentives to buy its bananas (an uncontested fact), through the link between incentives and requirements to the conclusion that the respondent provides a requirement that is not permitted under article III:4 of GATT.²

Previous work has showed that the above discourse can be captured within the framework of Inquisitive Semantics, but we will distance ourselves from the constraints

²For a more detailed explanation of the steps and utterances involved, see XXX.

of a particular formal model and discuss the conditions for any formal model posed by this discourse. Yet, one must note that without question semantics, an attempt to model the above discourse will run into trouble as it would standardly predict that the judges should eliminatively reason that an incentive is the case.

2.2 First condition: issue resolution

The first constraint arises from the fact that the judges always face an issue to solve. (18) specifies that any valid dispute must have at least two elements. Firstly, some policy that is being implemented by the respondent and, secondly, a specific WTO article that prohibits that policy. The complainant's role is to claim that the policy in question violates that particular article, while the respondent denies that claim. The judge will thus need to resolve the issue whether the policy in question is inconsistent with the mentioned WTO article. An issue will be at the heart of every legal dispute and, thus, any model of legal discourse should account for issue resolution.

What I mean by issue resolution is most often understood as accounting for questions in the model. A number of recent accounts that deal with deontic contexts have included a variant of question semantics into the model. The most prominent semantic puzzle in deontic contexts appears to be the question of free choice disjunction - the fact that disjunction under permission entails its disjuncts, while a non-embedded disjunction is itself entailed by its disjuncts. Recent solutions such as Aloni [2007], Simons [2005] have predicted the behaviour of disjunction in permission utterances with the help of introducing issue resolution. For example, Simons [2005] represents disjunction as a set of two sets of possible worlds and [Aloni, 2007] derives alternative sets from the representation of disjunction as $\exists p(p \wedge (p = A \vee p = B))$. Both of these accounts utilize issue resolution, but this is not sufficient to argue for the necessity of including question semantics in one's deontic model.

Approaching the issue of deontic models not from a puzzle-oriented direction, but from a top-down perspective, one can argue that the central role of questions in dispute settlement should be recognized as the reason for question semantics to enter deontic models. Not every semantic problem and every solution to every problem will require question semantics, but a lack of question semantics should be a major problem for any semantic model that hopes to account for legal discourse. It will not be certain whether the model will make correct predictions once it is extended to other parts of legal discourse which will inevitably bring in question semantics and, thus, such models would be open to criticism.

2.3 Second condition: violations

We saw earlier that Kratzerian accounts of modal logic fail to account for the interpretation of laws themselves. The above discourse suggests a different basis for the representation of modal operators in legal discourse.

Note that (19) consists of two parts. Until this point the discussion has focused on the second part which is the disjunction that provides the substantial inconsistency with article III:4 of GATT. Yet, the complainant's claim includes a preceding piece of information. If the disjunction is true, then there exists an inconsistency with article III.4. This explicit claim is affirmed by the judges in their concluding statement:

(23) Judges: “we find the allocation ... inconsistent with the requirements of Article III:4 of GATT.”

It might be tempting to ignore this piece of information, yet it sheds light on a crucial aspect of legal discourse. Not only does each dispute gravitate around an issue, the issue is whether an inconsistency is the case or not.

Previous accounts such as Kratzerian modal bases directly compare the state of

affairs and a modal prescription to see whether the real world is inconsistent with the deontic possibilities. Yet, legal discourse adds an intermediate step, which establishes the information that an inconsistency is the case. This step plays a crucial role in conjunction with the issue resolution that is at the heart of dispute settlement. If it were removed, the issue could be whether the state of affairs is as described by the complainant - whether the respondent truly implements the policies that are ascribed to it. Also, one may investigate whether laws do in fact state what the complainant claims. Yet, this does not account for the intuitive case where a both the policy and law exist, but no contradiction exists between them. For the judges to be able to investigate this, a deontic model must add a new entity, inconsistency, into its framework. Only then could one ask the question whether such an inconsistency follows from the policy and laws in effect.

This idea is not new to semantics, Anderson [1967] suggested a deontic logic that explicitly adds violations as a consequence of a prohibited act. Anderson rejected his own logic because it allowed one to reason along the lines of the naturalistic fallacy. One could derive the prediction that everything that is the case is obligatory. But other authors such as Barker [2010] have proposed new versions that make use of a similar idea. This case study demonstrates that the intuition behind Anderson's work was correct and plays a crucial role in legal discourse. The implementation of an inconsistency entity into deontic models remains for further work, but we argue that it is a necessary part of modeling legal discourse.

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