What Role can Rational Argument Play in ADR and Online Dispute Resolution?

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abstract

The literature on alternative dispute resolution tends to be dominated by the negotiation model of argumentation. This bargaining argumentation style differs from the argumentation models developed in AI & Law. In recent years several researchers acknowledged the value of argumentation theory for ODR. This paper focuses on an alternative model to supplement that of mere negotiation, namely a formal property of rational argumentation. To that end a formal model of dialogue that represents a high standard of rationality is put forward, discussed and analysed.

1. Introduction

The literature on alternative dispute resolution tends to be dominated by the negotiation model of argumentation. This bargaining argumentation style differs from the argumentation models developed in AI & Law (e.g., Bench-Capon 1997, Lodder 1999, Prakken 2001). We believe that ADR should not solely concentrate on the negotiation model of argumentation, but also take 'rational' argumentation into account. Several researchers do not believe in the use of 'AI & Law'-like argumentation support in negotiation/mediation.

One underlying idea of the 'disbelievers' is that negotiation simply is not about trying to convince opponents based on arguments. Or, that the striving towards an optimal solution for both parties in negotiation conflicts with the approach in the adversarial, all-or-nothing models of argumentation. Also, as pointed out by one of the reviewers, doubts about the utility of "AI & Law-like" formal models of argumentation for online mediation are due to technical difficulties of representing knowledge and arguments at the level of granularity and detail required by prior AI and Law work on models of (legal) reasoning and argumentation.

All these objections may be valid to a certain extent, the general hypothesis we defend is that models of argumentation indeed may contribute to the solution of the dispute (Walton 1998). Arguments can be used to elucidate rather than to convince, argumentation models can be used in a non-adversarial way (Lodder 2002), and the results of AI & Law can be used to design simple, easy to use argumentation tools (Vreeswijk & Lodder 2005).

In recent years several researchers acknowledged the value of argumentation theory for ODR. (Gordon & Märker 2003) indicate that argumentation systems could be used during one particular phase of online mediation, that of 'Evaluation and Selection of Options'. Other examples are (Lodder & Huygen 2001; Mochol 2003) and Katsumi Nitta is working on educational software using argumentation models to train mediators.[1] So, more and more researchers share our vision that argumentation is needed in ODR. Our aim in this paper is to take this a step

further, and elaborate upon the role of rational argument in online negotiation.

Right now what is needed is a thorough analysis of how argumentation support can be used in online negotiation and at what stages during the negotiation process. We cannot address this topic in full at this occasion, but we take a necessary first step and focus on an alternative model to supplement that of mere negotiation, namely a formal property of rational argumentation. To that end a formal model of dialogue that represents a high standard of rationality is put forward, discussed and analyzed. It is not a new model, in that systems of dialogue having the key formal property that defines this type of rationality have been proposed before. In the Dialaw system of Lodder (1999), for example, it is a requirement that if the respondent of an argument accepts all the premises of a valid argument, he must also accept the conclusion. This rule is interesting in its own right in the construction of a formal dialogue system representing rational argumentation, but a main problem is where it might apply to real argumentation of the kind that is currently interesting to study.

The remainder of the paper is structured as follows. We begin with a discussion of Rational Argumentation in Dialogue Logic and the rule RR that is central in this paper. After introducing an example about a car accident that is used throughout the paper, we analyze to what extent the rule RR applies to ADR. We continue with a proposal to consider RR as a conversational maxim, and discuss three characteristics of ODR relevant for the application of RR.

2. Rational Argumentation in Dialogue Logic

The formal property at issue can be expressed as a dialogue rule binding on the two participants: when the proponent puts forward an argument meeting two requirements of success, the respondent must accept the conclusion. The first requirement is that all the premises of the argument must be propositions that the respondent has previously accepted, and that are not in doubt for him. Normally they would be propositions that both parties agree on, that is, propositions that the proponent doesn't doubt

either. The second requirement is that the proponent must show that the conclusion she has put forward follows from these premises by rules of inference accepted as valid and binding by both parties. The assumption here is that both parties, at the beginning of the dialogue, would have agreed on some rules of inference as valid or binding. For example, they might have agreed on a set of rules for propositional calculus and predicate logic that have been proved to be complete and consistent. In other instances, they might have agreed to accept some inductive rules of inference as well.

There might be different formal models of dialogue depending on which rules are accepted as binding. But whatever standards of rational argument are accepted, the form of the rule remains the same. The rule means that if the respondent accepts the premises, and the conclusion follows from them by the accepted rules of inference, then the respondent also has to accept the conclusion. This rule can only be properly formulated and understood in a formal model of dialogue in which two parties take turn making moves in the form of speech acts, and where each move is governed by rules.

3. The Rule RR

There is a general principle of rational argumentation that can be formulated as follows. Suppose a proponent puts forward an argument, and both she and the respondent in the dialogue agree on standards for what constitutes a valid argument. And suppose that the respondent does not agree with the conclusion of the argument, and expresses that disagreement. Should the respondent be allowed to get away with this, or is it an inconsistency? If the argument is valid, and the respondent accepts all the premises, then surely he is obliged to accept the conclusion as well, for the conclusion follows necessarily from the premises in a valid argument. In other words, it is logically impossible for the premises to all be true and the conclusion false. Thus for the respondent to accept all the premises of such an argument yet reject or doubt the conclusion is logically inconsistent. Surely then to be a rational arguer, he must do one thing or the other. He must either accept the

conclusion or he must cast doubt on at least one of the premises.

Let's assume that the proponent and the respondent agree on which arguments are valid and which ones are not at the beginning of a dialogue. Then there might no quarrel about whether a given argument is valid or not. Under this condition, the rule of rational argument we are considering has to do with acceptance of the premises. Let's call the following dialogue Rule RR, for the rule of rational response.

> (RR) When a proponent puts forward a valid argument with premises
> $P = (P_1, P_2, \ldots, P_n)$ that are all commitments of the respondent and conclusion C, the respondent must, at the next move, either accept C or retract commitment to at least one of the premises P.

This rule requires that the respondent must question one of the premises if he does not want to accept the conclusion, even though he accepts the argument as valid.

RR would seem to be a rule that fits the type of dialogue called PPD (permissive persuasion dialogue) in (Walton and Krabbe, 1995). The permissive persuasion dialogue, as contrasted with the rigorous persuasion dialogue (RPD), admits of a reasonable degree of freedom in allowing for the kinds of moves made, when they are made, and the conditions under which retraction of commitment is allowed (p. 126). A rigorous persuasion dialogue is much more restrictive in these respects (p. 126). Under the general description of permissive persuasion dialogue, one rule is the following: "If a party's concessions include all the premises of the opponent's argument, as well as the implicit assertion connecting the premises and the conclusion, this party must – as soon as possible – concede the opponent's conclusion" (p. 138). The "implicit assertion connecting the premises and the conclusion" is the logical rule or structure warranting the inference from the premises to the conclusion. For example, if the argument has the modus ponens form, since that form is deductively valid, the parties to a dialogue in which modus ponens was accepted as a valid rule of inference would be committed to it

whenever it is an implicit assertion of an argument. If this interpretation of Walton and Krabbe's system is right, the rule RR fits PPD. RR also fits the system called DiaLaw (Lodder, 1999).

4. The Car Accident Example

To illustrate the working of RR in ADR/ODR we will use a case about a car accident. This case illustrates that in practice RR will not always lead to what would be expected. One reason for this is that in law a party might accept premises and accept that an argument is valid, and even agree that the conclusion can be based on the premises and the rule, but yet does not accept the conclusion. A reason for this seeming reluctance might be that on the basis of another argument the opposite conclusion can be drawn. This situation is not necessarily one of a rebutting argument or another formal property defining defeat of arguments. Rather, which conclusion to accept under these circumstances could be considered a matter of personal taste or party-bias. The other party might not even aim to defeat or rebut the original argument, but just presents his own vision on the case. Two parallel worlds is a notion that probably better explains what is happening. In what follows we do not take into account a matter that can further complicate the discussion, namely that parties often do not agree about the facts.

The case is the following. On a holiday bungalow park cars have to park outside the park on a general parking lot, and are allowed on the park only to pack and unpack, or if they have a special permit. A car we will refer to as 'A' is parked and in order to get to the general parking place outside the park he needs to turn. It is dark, snowing, and the lighting is bad since streetlights are not near. About 20 meters further down the road another car B is unloading and stands still headed in the direction of the parked car. The parked car A drives out of the parking space, and starts turning on the small road, which is about two and a half meters wide.

While car A is still turning, the now unloaded car B starts driving, moves into the parking lot where car A just drove out and turns out its lights.

While he was still turning, the driver of car A has seen car B starting to drive, and before com-

pleting the turning by driving backwards into the parking lot he just came out of he waits and tries to find out where car B is now. He no longer sees car B and assumes the car drove to the general parking lot outside the park. He starts driving back and because car B had moved into the parking lot, a collision follows.
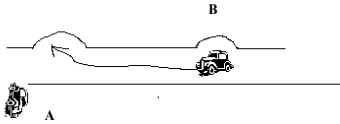
Figure 1. Turning the car

Car A is slightly damaged at the rear bumper, car B is slightly damaged at the front bumper. Both damages are approximately Euro 500-700. Who is liable for the damages?
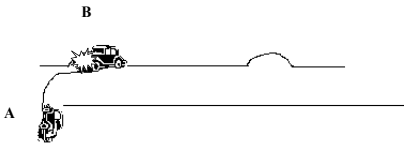
Figure 2. The collision

A general rule is that someone who is turning, is in principle liable. The fact that the other car was standing still in a parking lot makes the case a really strong one. So, car A is liable. Another rule is that someone who creates a dangerous situation is liable. The car B saw car A turning, and because the road was really small it was clear car A would need to use the parking lot to turn. By parking his car B and turning his lights out under the given circumstances (dark, snow), it was foreseeable that the collision would take place. Moreover, the car B had other, better options that would avoid the dangerous situation taking place, for he could have left his lights on while the other car was still turning, or he could have parked in another lot next to the place where he was unloading. So, car B is liable.

5. Does RR Apply in Alternative Dispute Resolution?

Parties have several options if they have a dispute. A trivial option, and most of the time not really satisfactory, is to do nothing and leave the dispute as it is. If parties aim to resolve the dispute, a wide variety of dispute resolution mechanisms exist. The four most prominent are in order of increasing formality: negotiation, mediation, arbitration, and litigation. Arbitration and litigation are adversarial procedures, in which a third decides the case. Mediation and negotiation are consensual procedures in which the disputants aim at reaching agreement, either on their own or helped by a third party called the mediator or facilitator. This third party does not impose a decision upon the parties, but merely guides the procedure. In this paper we will consider first the negotiation/mediation option, that is the non-adversarial type of dispute resolution.

In what Fisher and Ury (1981) call principled negotiation, there can be shift from bargaining to a kind of persuasion dialogue in which one party tries to convince the other to accept some conclusion based on rational argumentation designed to show that this proposition is true. Cases of this sort are very common. For example, suppose a homeowner and a building contractor are negotiating a price on installing a concrete basement in the homeowner's house. They begin by bargaining about price, and about how thick the concrete walls should be. The homeowner wants thin walls, but the contractor argues that thicker walls are required by the building code. He then goes to an in internet site and shows the homeowner the clauses on thickness of walls in the city building code for houses. This is a kind of rational persuasion type of argument in which the conclusion is that the walls are required to be of such-and-such thickness, and the premises used to prove that conclusion are drawn from the authority of the city code, set by law. What has happened here is that there has been a shift form pure negotiation (bargaining) to a different type of dialogue in which reasons are given to support a conclusion as true, based on premises and an argument that support the conclusion. The supposition is that

RR might be applicable as a principle that applies to this kind of argument.

Sometimes such a shift from a negotiation to a persuasion type of dialogue can be quite beneficial to the quality and success of the original negotiation dialogue. For example, in child custody disputes, the parents negotiate on who is going to get custody of the children. Such negotiations can become very heated, and often come to an impasse. If the mediator can shift to a more impersonal type of discussion, in which the issue is which party is better equipped to look after the children, the discussion may become less heated and bitter. The reason is that now objective evidence that can prove a claim is what is needed to decide the issue. It is less about what I want than about what can be done. Such a shift from pure bargaining to a persuasion type of dialogue about what can be proven true or false can be extremely helpful in resolving the conflict in the original negotiation. Thus this is the kind of shift a mediator is trained to encourage.

When the shift to a persuasion dialogue has occurred in alternative dispute resolution, the principle RR can become applicable. For the interlude to be successful, each party must agree to pay close attention to the evidence that bears on the conclusion to be proven or disputed. A kind of rationality here can be infectious, and hopefully spill over into the more hotly contested and personal negotiation dialogue that will follow. It is very important for agreement to be reached on the preliminary issue of which party is better equipped, in that or that respect, to look after the children. Thus a certain degree of rationality during such an interval is very important. Thus the third hypothesis proposed here is that RR is applicable in alternative dispute resolution during this principled discussion phase. What is shown here is that while negotiation has dominated the literature on alternative dispute resolution, principled rational discussion of a different type may also have an important, if less directly visible role.

Obviously, the principle RR will not always play the 'ideal' role as just indicated. Parties can be unwilling to co-operate, or just convinced that they are right. This sounds negative, but as in the car example described above, parties may be honest while presenting their own interpretation of the case. Even, parties might agree that RR holds as a rule but arrive at a different conclusion, referred to above as the parallel worlds. This is important to realize. Whilst surely a deadlock or impasse in a bargaining style negotiation can be remedied by switching to a persuasion dialogue, sometimes parties cannot be persuaded for other reasons than usually mentioned in the literature. In this case both parties apply RR, both parties agree to the application of RR by the other party, but still each party sticks to its own conclusion. An old anecdote about two opposing parties coming to a Rabbi nicely illustrates this. After hearing the first party, the Rabbi says "You are right". After hearing the second party he says the same thing. The Rabbi's wife does not understand it and exclaims: "But that's impossible, they are opponents". "You are also right", the Rabbi adds.

In the Car accident example, the owner of car B bases his conclusion on the application of a rule laid down in the Traffic code. This rule basically states that the one who performs special maneuvers (such as turning, driving backwards or parking) is liable for damages caused. The owner of car A might have argued that although standing still at the time of the collision, the general rule about special maneuvers also applies to car B since he drove into the parking lot. He does not but instead uses an unwritten norm about creating a dangerous situation, and applies the various criteria that are derived from case law to his particular situation.

Interestingly enough, where above we claimed that moving from a bargaining to a persuasion dialogue might help to solve a case, in this case also the opposite could be true. Obviously, there is an impasse between the two parties. They are not able to persuade one another. Assume the owner of car B confronts the other party with the fact that if the case would be taken to court he would probably win, so that A would be wise to pay now since that would spare him a lawsuit with no prospect of winning. The owner of car A might argue that he is willing to pay half the damages, and no more, since the owner of car B would also be better off by not going to court. In the end, this bargaining might lead to a solution, whilst still both parties are not persuaded and

stick to their opposite legal interpretations of what happened. So, moving from a persuasion to a bargaining dialogue might help to solve a case as well. (Lodder & Zeleznikow 2005) discuss some pros and cons of starting with either persuasion or bargaining. In their three step model they propose to start with a persuasion dialogue, and if necessary switch to using negotiation support systems (bargaining).

6.   RR as a conversational maxim

More research is needed on how RR works as a rule of dialogue in ADR, for it is clear that, for example, one party in a discussion cannot force the other party to accept a proposition by bringing RR to bear. Thus it is a good bet that RR applies to these kinds of dialogue only as a cooperative rule that one party can use to try to get the other party to "be reasonable". Thus a party who invokes RR might argue to the other party, "Don't you see that this conclusion follows from your previous commitments, and therefore that you ought to accept it, or change one of those other commitments?" The other party is not forced to make the change, but if he does not respond to the questioning, he will be perceived as unreasonable or uncooperative. This could damage his credibility, or create other problems that he might wish to avoid. So conceived, the rule RR might have some gentle force, even though a respondent who violates it cannot be literally forced to then conform to it by correcting his prior move.

So described RR could be extremely useful in ADR as a cooperative conversational rule (conversational maxim) of the kind described by Grice (1975). Grice (1975, p. 45) formulated the following four conversational maxims

- *Maxim of Quantity:* Make your contribution as informative as is required for the current purposes of the talk exchange.

- *Maxim of Quality:* Try to make your contribution one that is true.

- *Maxim of Relation:* Be relevant.

- *Maxim of Manner:* Be perspicuous.

Grice (p. 47) organized these maxims as falling under a more general rule that one should expect a speech partner's contribution to be appropriate to immediate needs at each stage of a conversation. For example, if a question has been asked at a move in a dialogue, the respondent doesn't necessarily have to answer it, but he should at least reply to the question, or offer some response that addresses the question. The maxims all need to be fall under the more general principle that governs all conversations or collaborative goal-directed dialogues. Grice called this principle the Cooperative Principle or CP: "Make your conversational contribution such as is required, at the stage at which it occurs, by the accepted purpose of the talk exchange in which you are engaged." Seen in a Gricean light, RR could apply very well to ADR as a species of cooperative rule falling under the CP. Which of the four maxims it would fall under is debatable, but perhaps it might relate most closely to the maxim of quality.

The problem of how RR could be employed as a cooperative rule in ADR or Online Dispute Resolution (ODR) has not been solved yet. However, it is quite clear that there is a strong need for some such rule, or set of conversational rules in ADR/ODR. Rule (2002) described a serious problem that often arises in many synchronous information exchange media like instant messaging and chat rooms that can be conversational ODR platforms. The problem is that polite turn-taking, an inherent characteristic of all argumentation-based dialogues, is often violated by people "interrupting" one another, e.g. just because they can type faster.[2] In formal dialogue games (Hamblin, 1971; Walton and Krabbe, 1995), for example, turn-taking by the two parties is a structural rule that makes an orderly dialogue possible. Clearly, much more work needs to be done on showing how conversational rules of the Gricean type could be applied to ODR, and ADR generally. For there is a strong need to solve these kinds of fundamental structural problems by formulating procedural conversational rules and policies at a general level, and by showing how they should be applied in different ODR platforms.

Such problems cannot be solved here. The best we can do is to offer support for the hypothesis that RR not only does apply to ADR, and to ODR more specifically, but in a way that it acts a conversational postulate. In this role, it could be used by one party, or by a judge or mediator, to

try to bring the argumentation of the two opposed parties closer to a point where they are more useful in resolving the disagreement at issue. This can be done not by forcing the one party to follow logic, but by asking him to be "more reasonable" and cooperative. Of course, this might not always work, as shown above in a legal dispute, for example, where both sides have vested interests in sticking to a viewpoint. Still, such cooperative conversational rules could be extremely useful to improve the quality of a dialogue, and expedite its movement toward resolving a disagreement, by asking a party to "be reasonable".

7. Conclusions

We conclude that it is at least a promising hypothesis that RR applies to online dispute resolution and ADR as a tool that can be used when a negotiation seems deadlocked but where movement forward may be expedited by a shift to a different type of dialogue interval. This type of dialogue can be classified as a critical discussion, a type of persuasion dialogue in which one party has a burden of proof to present an argument to the other that has certain standards for successful proof (rational persuasion based on evidence). When the appropriate standard is met by the proponent's argument, the respondent is obliged to accept the conclusion, at least tentatively, in order to participate in the rational discussion. Of course, this is only a normative standard of rational argument. Moreover, under circumstances a shift back to bargaining might lead to a solution. In that case both parties may not be persuaded and stick to their opposite (legal) interpretations of what happened, but still reach a solution in a bargaining dialogue. This illustrates that participants in any such real discussions will always behave precisely according to the normative standard of rational argument. Far from it, they may try to commit fallacies and engage in faulty and deceptive argumentation. Still, the normative ideal is there. It can be used to criticize and correct arguments, to find gaps in them, and to pose appropriate critical questions. Thus it is a rule of rational dialogue that posits a model of what should be taken to represent a good argument and an appropriate response to such an argument.

Notes

1. He has not published in English on the topic so far, but in the ICAIL 2005 education workshop a paper is presented by Nitta and others.
2. This problem was pointed out to us by David Godden.

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