arguments that are possible given these premises. In fact, there is a clear parallel with the way in which Lorenzen and Lorenz employed dialectics. In both cases, the purpose of the dialectics is to clarify the notion of logical validity. This explains that a fixed set of premises is assumed and that all possible dialogues are taken into consideration.

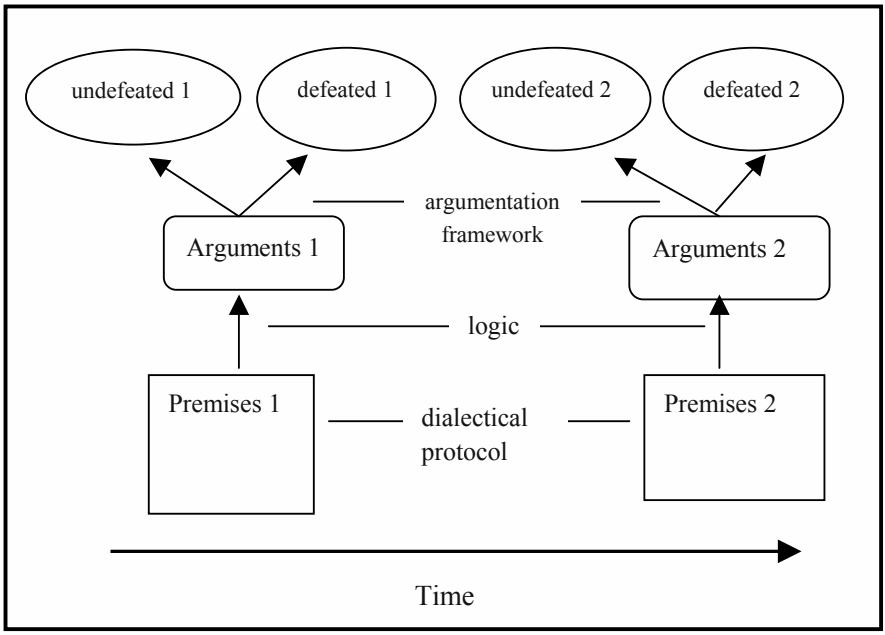
Nevertheless there are also important differences. The battle of arguments approach is not committed to a particular logic. The notion of validity with which it is concerned is not the validity of an argument within such a system of logic, but rather the status of an argument on the basis of a framework that deals with the battle of arguments. This framework presupposes the internal validity of arguments. As a consequence, the dialogue steps deal with arguments as a whole and not with the steps of a logical proof, unless the steps of the logical proofs may define subarguments, which are in their turn relevant for when one argument defeats another one. Moreover, the dialogues do not characterize the meanings of logical operators, but rather a theory of when one argument defeats another argument.

Because this form of dialectics assumes a fixed set of premises and takes all possible dialogues into account, the notion of time plays no role in it. That is why I propose to call this form of dialectics *static*.

3.3 Dynamic dialectics

As the above discussion of static dialectics illustrates, modeling defeasibility as a battle of arguments does not automatically lead to a dynamic approach. However, Prakken developed a four-layered model of legal argument, in which dynamics plays a crucial role.[22] The four layers in Prakken's model consist of a system of logic, a dialectical layer, a procedural layer and a strategical layer. Given a set of premises, the logic determines the set of possible arguments. The dialectical layer then sorts out the arguments into the defeated and the undefeated ones. The procedural layer determines how the set of premises, which functions as input to the logic and the argumentation framework, can evolve in time. The procedural rules of the third layer regulate how an actual dialog can be conducted. These rules allow dialogue parties for instance to add new premises, or to retract premises that turn out to be indefensible. The fourth layer deals with strategy, which argument moves that are allowed by the third layer should be made to reach the arguers goals.

[22] Prakken 1997, 270f.



This model crucially differs from the one described above, where the dialectics only functions as a means to characterize valid conclusions in defeasible reasoning. The principal differences are that the present model takes the factor of time into account and that it has a non-deterministic element because the dialectical protocol allows dialogue parties to change the set of premises. Which changes will be made is up to the parties and as a consequence the valid conclusions at one point in time do not determine the valid conclusions at a later point in time.[23]

To highlight the difference between static dialectics and the present model, dialectical models that incorporate players and time will be called *dynamic dialectical*. Such dynamic models are negatively characterized by not assuming a fixed set of premises and consequently also by not dealing with all possible arguments.[24] Therefore their main purpose will not be the

[23] An exception must be made in case the dialectical protocol does not allow changes in the premises that change the set of valid conclusions. Such a protocol would make little sense, however, because the whole point of having a dialogue is to introduce some indeterminism.

[24] Dynamic dialectics may deal with all possible arguments at a particular stage of the argumentation.

characterization of logically valid arguments, or of conclusions that are justified relative to a set of premises.

4. VARIATIONS ON THE DIALECTICAL THEME

In the literature, several functions for dialectical systems have been mentioned. I will discuss three of them.

4.1 The HYPO-system

A well-known example of a static dialectical system is Ashley and Rissland's HYPO.[25] HYPO is a static system because it uses a fixed set of cases as the premises from which arguments can be constructed. It is a dialectic system because it generates three-ply arguments, where the first ply is the basic argument, the second ply an attack on the basic argument, and the third ply an attack on the second ply. The argument of the third ply, so to speak, reinstates the argument of the first ply.

Although HYPO is not primarily interested in establishing the validity of a conclusion given the current case and the cases from its case base, it exhibits interesting similarities to systems that deal dialectically with defeasible arguments. For instance, HYPO considers all possible arguments given the cases that are at its disposal. This is done by sorting the cases in a Claim Lattice on the basis of their similarity to the current case. Since arguments are closely related to the position that cases take in this Claim Lattice, the generation of the Claim Lattice is comparable to the generation and comparison of all possible arguments. Moreover, the three argument plies where each ply attacks the argument of the previous ply is very similar to the battle of argument model of defeasible reasoning.[26]

4.2 Dialectics as models of bounded rationality

Because humans sometimes reason irrationally, systems that aim to characterize valid reasoning dialectically tend to consider all possible arguments rather than arguments that were actually produced by human reasoners. Nevertheless it is possible to use actual, rather than all possible,

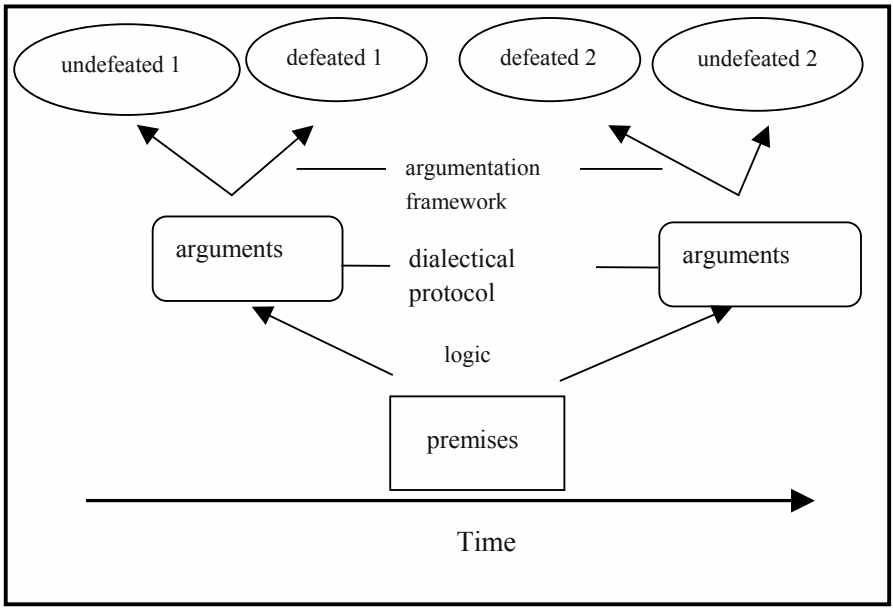
[25] Rissland and Ashley 1987; Ashley 1991.

[26] A logical analysis of the HYPO reasoning mechanism that can easily be translated into the battle of arguments-model, can be found in Hage 1997 (RwR), 185f. See also Prakken and Sartor 1997 (RP), Bench-Capon 1997 and Roth 2003.

dialogues to model rationality. Loui and Norman (1995) have presented a theory in which dialogues are used to model rationality, in particular bounded rationality.

Their model can be seen as a variation of the layered model of Prakken that was presented in section 3. Prakken considered changes in the set of premises over time. Every stage in the process is characterized by a set of premises. Given a system of logic, the premises of a particular stage make a number of arguments possible. Consequently, a stage is also characterized by a set of arguments. An argumentation framework determines for every stage and the set of arguments that characterizes it, which conclusions can validly be drawn.

The model of Loui and Norman differs from Prakken's model because stages are not characterized by sets of premises, but rather by the sets of arguments that were *actually* adduced. In fact, Loui and Norman assume a fixed set of premises and consider only the arguments that, given some system of logic, are created given those premises. Remember that Prakken considered all arguments that were made possible by the premises of a stage. Since humans are not capable to generate all arguments that can be based on their beliefs, they must work with the arguments that they have actually thought of.[27] If one's belief or behavior is in agreement with what one has actually considered, it is in some sense rational. The logical counterpart of this form of bounded rationality is that the battle of arguments only takes place between the arguments that were actually produced in a dialogue, and this is precisely what Loui and Norman propose.



Verheij has proposed a system, CumulA, which is similar to that of Loui and Norman in that it makes use of argument stages.[28] It has the additional feature that not only the set of arguments, but also the set of premises is allowed to vary over time. Consequently it combines features of Prakken's layered model and the system of Loui and Norman. CumulA does not incorporate dialogue protocols, however.

4.3 Dialectics as a theory of rational acceptance

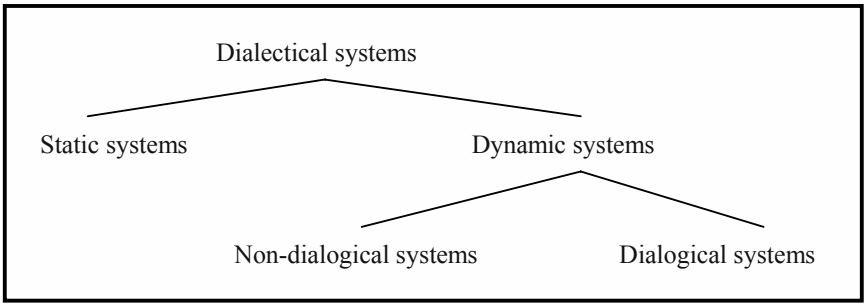
In his logical system DefLog, Verheij has extended the use of dialectics to make it deal with topics that are usually dealt with by means of belief revision.[29] Where most authors treat arguments as the entities that compete, Verheij takes statements as the relevant basic entities. A theory consists of a set of sentences that express these statements. The language in which these sentences are expressed knows only two logical operators, namely an operator for *primitive implication* and an operator for *dialectical negation*. A primitive implication can be used for modus ponens like arguments, while the dialectical negation indicates that the thus negated sentence is defeated.

A theory consists of a number of statements that are prima facie justified. It is, however, possible that some statements in the sentences are attacked by the theory as a whole. This is the case if repeated application of modus ponens arguments based on the primitive implications leads to the conclusion that a statement in the theory is defeated. A dialectical interpretation of a theory divides the theory into two sets of statements. The first set consists of the justified assumptions. This set should be conflict free in the sense that no statements in the set are attacked by this set. The other set consists of statements that are all attacked by the first set. Intuitively such a dialectical interpretation can be interpreted as a correction on the original theory in which the subset of statements is selected that is justified in the light of the original theory.[30] The justified conclusions of the original theory are then the conclusions that follow from the justified subset resulting from the dialectical interpretation of the theory.

[28] Verheij 1996.
[29] Verheij 2003 (DL) and Verheij 2005.
[30] Notice the analogy with the notion of integrated coherence as exposed in chapter 2.

5. TRUTH AND JUSTIFICATION; A PHILOSOPHICAL DIGRESSION

Dynamic dialectical systems can be subdivided into systems whose dialogue protocol largely reflects the system's underlying logic and systems where the dialogue protocol is to a large extent inspired by the domain on which the system is to operate. These latter dynamic dialectical systems, I will call *dialogical*. The transition between merely dialectical systems and dialogical ones is a gradual one.



Dialogical versions of legal reasoning systems are inspired by two phenomena. The first is that legal issues often arise in disputes between two parties, that is, in dialogues. Dialogical systems mimic, so to speak, legal practice.

Next to this practical source of inspiration there is more theoretical one, exemplified in Gordon's work on the Pleadings Game. A major source of inspiration for Gordon was Alexy's theory of legal reasoning[31], which was, to my knowledge, the first dialogical theory of legal reasoning. Alexy was, in turn, inspired by the revival of the rhetorical approach to argumentation[32] and by dialogical approaches to truth[33] and justification.[34] I will say somewhat more about this German work and its philosophical background, because it is essential for a good understanding of the differences between dialogical approaches to legal reasoning and dynamic dialectical approaches that are not dialogical.

[31] Alexy 1978,
[32] E.g. Perelman and Olbrechts-Tyteca 1969.
[33] Habermas 1973.
[34] E.g. Schwemmer and Lorenzen 1973.

5.1 Habermas' consensus theory of truth

Many philosophers endorse a realist ontology and the correspondence theory of truth.[35] They assume that there is a world independent of our knowledge of it and that an assertive sentence is true if the state of affairs expressed in it obtains in that independent world and false if it does not obtain. These views taken together lead to well-known problems concerning truth and knowledge. The truth of sentences, or, in general, all representations of reality, depends on a relation between these representations and reality. All we humans have are representations of this reality, for instance in the form of sensory perceptions and we are unable to grasp directly the reality beyond the representations. Everything we can say or believe about that underlying reality is itself again a representation. Truth in the sense of correspondence is not something we can ascertain.

This insight has led Habermas to the conclusion that if we discuss the truth of a sentence, we are not really concerned with the correspondence of this sentence with reality, but rather with whether this sentence rightly claims what it does claim.[36] This rightness, Habermas continues, does not depend on an inaccessible relation between this sentence and reality, but rather in the possibility of upholding the sentence in a critical discussion. In this way, Habermas arrives at his consensus theory of truth: a sentence is true if it can be upheld in a completely rational discussion.

Notice that it is not an actual consensus that decides about the truth of a sentence, but the hypothetical consensus that would be achieved if a discussion were fully rational. Habermas discusses a number of demands on discussions that are necessary to safeguard their rationality. Amongst these are the demands that:

1. All potential participants in a discussion must have equal chances to participate. They must any time be able to open and continue discussions.
2. All participants must have equal chances to offer interpretations, statements, recommendations, explanations and justifications, and to question them.
3. All participants should have equal chances to use representative speech acts, namely to express attitudes, feelings and intentions.
4. All participants should have equal chances to use regulative speech acts, such as to command and to resist, to permit and to forbid.

[35] E.g. Devitt 1991 and Searle 1995.
[36] Habermas 1973.

Habermas' theory resembles the work of Lorenzen and Lorenz and dialectical renderings of defeasible reasoning, which also operate with the outcome of rational discussions. Still there is a difference, because the work of Lorenzen and Lorenz and, for instance, Prakken and Sartor, assumes a finite set of premises and considers argument strategies that enable one to win a discussion against all possible opposition, where the possible forms of opposition can be constructed on the basis of the premises and the logic. The rationality is, in the views of Lorenzen and Lorenz and in the battle of arguments-theoreticians, embodied in the demand to consider all dialogues.

Rational discussions in the sense of Habermas do not have a fixed set of premises. This has two consequences. First, the rationality of the discourse cannot be maintained by considering all possible arguments, because the set of all possible arguments is indeterminate. As an alternative, Habermas uses constraints on the settings of the dialogue.

Second, a dialogue according to Habermas has no fixed outcome, because its purpose is not to characterize logical validity, which is relative to a set of premises and a matter of form, but to define truth, which is absolute and a matter of content. This difference explains the difference in determinacy. Moreover, it is relevant for the difference between dialogical and other dialectical versions of legal reasoning systems. The latter only deal with the validity or rationality of (legal) reasoning, while the former tend to focus on the correctness of the outcome of legal discussions. Very briefly stated, dialogues deal with content, while other forms of dialectics deal with form.

That dialogues deal with content explains why Habermas places constraints on dialogues that lead to truth. These constraints are meant to ensure that everything that may be relevant for the outcome of the discussion will be adduced. Comparable constraints are lacking in static dialectical systems, where the set of premises is not only fixed, but its contents and origin are irrelevant.

5.2 Overcoming foundationalism

Where the concern of Habermas was semantic or ontological, the so-called Erlangen Schule was concerned with the justification of ethical and empirical ‘knowledge’. The traditional model of justification holds that some thesis is justified if it can be derived (usually: deduced) from justified premises. This view of justification suffers[37] from an unbounded recursion. It presupposes a basis of justified premises, the justification of which does not

[37] Amongst others. See chapter 1, section 2.5.

depend on derivation from other justified premises. The problem, which is typical for all 'foundationalist' theories of knowledge[38], is that such a basis can only be found by dogmatizing some premises.

The solution to this problem that was proposed by Schwemmer, a member of the school of Erlangen, is that the basis of justification is only assumed as long as it is not brought up for discussion. For instance, it is possible to justify C by means of an argument on the basis of the premises A → C and A. As long as these premises are not questioned, the justification succeeds and C is considered to be justified. But it remains possible to question A, A → C, or both, and when this happens, these premises must be justified. Such a justification makes in turn use of premises that are temporarily assumed, but that can always be questioned and brought up for discussion.[39]

Schwemmer's solution to the problem of foundationalism rests on the exchange of content for form. The content that is abandoned consists of the premises that would have to be accepted dogmatically. The form that comes in its place is the procedure that allows an audience to question the assumptions of some particular justification. This exchange of content for form is similar to the way in which Habermas replaced reality as the basis for truth by consensus in a rational discussion. Nevertheless there is an important difference. Habermas' insistence on the rationality of discussions, which related his work to that of Lorenzen and Lorenz and of the battle of arguments-theoreticians, and which is embodied in constraints on rational discussions, is abandoned in Schwemmer's solution. It is the *actual* questioning of assumptions that creates the obligation to extend the justificatory chain, not the mere possibility of questioning the premises. Indeed, if it were the (absence of the) possibility of challenging the premises that counts for justification, the unbounded recursion, which Schwemmer attempted to circumvent, would re-occur.

[38] Cf. Lehrer 2000, 45f.

[39] Alexy 1978, 181 on Schwemmer; see also Hage 1997 (Leg), 126f. This approach to justification has some similarities with Popper's views on falsification (Popper 1972). A theory may be falsified because conclusions that are deduced from it are considered to be false. Such a falsification presumes that the 'data' against which the theory is tested are correct themselves. Such a presumption can never be more than another falsifiable hypothesis, however. In a sense it depends on the scientific dialogue which theories are temporarily assumed to be data and are assumed to be fit to test other theories against.

5.3 Law as reason-based fact

The question might well be raised why the ideas of Habermas and Schwemmer, which are not so familiar outside Germany, have had such a strong influence in the fields of legal theory and of Law and AI. Part of the answer will probably be that dialogues were already familiar in the law, so that the theoretical framework proposed by Habermas and Schwemmer struck a familiar chord, which facilitated its acceptance.

To see another part to the answer, we must return to the ontology sketched above. According to this realistic ontology, reality is independent of our knowledge of it. For instance, Mount Everest would also have existed and would be snow-covered, if no conscious being had existed and no-one would have known about it. This realistic picture may be correct for brute facts such as the existence of Mount Everest and its being snow-covered, but it is certainly not correct for large parts of reality that consist of so-called reason-based, or institutional facts.[40] The existence of money, of football matches, of governments, of statutory laws and of legal obligations is certainly not independent of human minds. All of these are 'built' (constituted) on top of other facts or entities, which are the reasons for their existence. The connection between reason-based facts and the facts that are the reasons for their existence is created by rules that are adopted by humans. For instance, the rule that one ought to repair tortuously caused damages makes that the fact that John tortuously damaged Jennifer's car into the reason why John ought to repair the damages to Jennifer's car.

Reason-based facts are facts that are built on top of other facts, which are either brute, or reason-based themselves. The distinction between brute facts and reason-based facts has profound implications for the distinction between truth and knowledge. The presence of brute facts may be observed directly[41], or it may be inferred from other facts that provide evidence for their presence (e.g. smoke provides evidence for fire). In both cases, there is an independent standard for the correctness of our knowledge, that is, whether these brute facts actually obtain. Even if our knowledge is based on evidence and therefore on a rule that allows us to consider these particular facts as evidence, the rule can be tested by comparing the outcome of its application

[40] Cf. Anscombe 1957, MacCormick and Weinberger 1986, Ruiter 1993, Searle 1995 and Hage 1987 and 1997 (RwR). See also chapter 6, section 6.

[41] I presently presuppose an empiricist epistemology with respect to brute facts, and argue for an idealistic epistemology with respect to reason-based facts on the basis of it. The argument for an idealistic epistemology becomes even stronger when the empiricist assumption with respect to brute facts is replaced by an idealistic one.

with what can be observed to be really the case. The truth of a sentence that describes a brute fact is independent of our way of knowing this fact.

Our knowledge of reason-based facts can, on the contrary, only be based on our knowledge of their underlying reasons. If we want to know whether John ought to repair the damage to Jennifer's car, we must apply the rule about tort to the facts of their case to (re-)construct the legal consequences of the case. Moreover, there is no independent standard to establish whether our construction was correct. The only available test is to re-apply the legal rules. It is not possible to test the rules by means of our observation whether the legal consequences established by means of the rule 'really' obtain. In other words, the distinction between truth and knowledge, which characterizes brute facts, is absent in the case of reason-based facts. If the best procedure to obtain knowledge about reason-based facts has been followed, it makes little sense to ask the question whether this 'knowledge' is true. (This only holds for the step from the brute facts to the reason-based facts. Knowledge about reason-based facts always has a component of knowledge about brute facts and for this knowledge it may remain possible to ask whether it is correct.)

The second part of the reasons why dialogical, or, more generally, procedural, approaches to the law are so popular is, in my opinion, that the law in actual cases consists of reason-based facts, facts that are the result of the application of legal rules. It is only possible to establish these facts by applying the rules. In other words, it is only possible to establish what the law in a concrete case is by means of a procedure. Legal dialogues are obvious examples of such procedures. In section 7, after a discussion of Gordon's Pleadings Game, I will return to this procedural view of the law.

6. GORDON'S PLEADINGS GAME

A recurring theme in legal theory is how legal consequences in a particular case can be justified.[42] Just like other foundational enterprises, this one suffers from what has come to be known as the *Münchhausen trilemma*, after the legendary baron who pulled himself by his hairs out of the swamp.[43] A full justification of the legal consequences would be the result of a valid argument with justified premises. As we have seen above, the demand that the premises from which the argument starts are justified creates problems.

[42] E.g. Larenz 1983, MacCormick 1978, Alexy 1978, Aarnio e.a. 1981, Aarnio 1987, Peczenik 1989 and Hage 1997 (Leg).

[43] Albert 1968, 11f.