On Legal Argumentation Techniques: Towards a Systematic Approach

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Abstract. In this work we present a project for the investigation of the argumentative techniques adopted in the judgements of the Italian Constitutional Court. We provide a taxonomy of the argumentation techniques, we introduce the representation of the judgements, and outline the system to annotate the judgements with arguments and to query the annotated corpus.

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1. INTRODUCTION

This paper describes a research project on legal language and interpretation activity. It focuses in particular on the language used by the Italian supreme courts in their judgments.

Until the mid 20th Century this ideal has supported the belief that written law consists of a number of statements that have just one single true meaning, which must be recognized by the judiciary. According to this perspective, judges are able to access such true meaning, and are therefore considered as the “mouth of the law”. In this view the interpretation process consists of applying the rules of legal logic; and the meaning of statements pre-exists as a given and knowable object. This is the core of cognitive theory, which, rather than pretending to be a theory, was above all the ideology of the liberal state. As such, it was used to legitimate judicial review and to exert political control over it, seemingly referring every interpretative question to the legislative assembly by the referé legislatif. At the same time this theory was used to control the judiciary. The idea that the activity of interpretation was only an activity of

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declaration of the legislator’s willings enables to justify the judiciary pyramid hierarchy, and allows to exercise the control over the judges. It makes possible to affirm that the judicial difference between different degrees is not due to a different interpretation of law, but the adjustment of a wrong interpretation.

On a theoretical level, during the second half of 20th Century, skeptical and eclectic theories formulated in the writings of Alf Ross, Hans Kelsen, Herbert L.A. Hart have challenged this view. The descriptive theories of these authors have denied the existence of a unique meaning for each statement, and have revealed the ideology under the cognitive construction. Therefore, by considering interpretation as a mere activity of knowledge, they have emphasized the aspects related to decision-making aspects.

In contemporary constitutional regimes the legislation is considered the fulfillment of a system of principles expressed by a social order, which is no longer homogeneous, but pluralist. This is the reason why decision related aspects of interpretation are emphasized, provoking the crisis of the ideology of the controllability of legal interpretations and of the binding nature of the written law as an expression of the representatives. Nevertheless, cognitivism seems able to resist, since it considers judicial review as a consequence of a parliamentary decision, and not as the decision of a single judge. Therefore, if cognitivism as a theory can be criticized for several reasons, as a doctrine it can still play a role: the interpreter must behave as if a correct interpretation could be achieved. This approach, explicitly accepted in the Italian constituent assembly, allows jurists to consider themselves like a community of scientists, giving value to the law written in Parliament. It is an act of trust in the science of law, the underlying assumption being that the jurisprudence is an activity able to produce certainty only by cultural self-control.

Leaving aside more radical versions of skeptical theories that consider any interpretation as a decision, it is possible to admit that interpreter’s decision is still a cognitive activity related to the application of linguistic rules and definitions established by a legal culture circumscribing a set of accepted meanings. This is the kernel of the mixed theory that

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1 The 1865 and 1842 Italian civil code provisions are typical of this approach. They aim at procedurally binding the interpretation activity to the text with clear rules – literal principle, legislator willings, analoga legis, analoga iuris, all canons strictly secured to the text.

acknowledges the free nature of the final interpretation, but tries to constrain it to a declaratory activity.

The work about the interpretative techniques of the Italian Constitutional Court, is aimed i) at testing whether an anchoring of the judicial to the legislative activity exists; and ii) at establishing it as a scientific, and therefore not arbitrary but controllable, work. A provision can be interpreted in many ways, because different techniques can be used, each one producing a different meaning. In principle, a different interpretation can be proposed based on a different technique. However, that interpretation will be worth of consideration because it relies on interpretative criteria that are recognized as valid by the legal community.

Our research project is aimed at building a corpus of supreme courts judgments with the interpretative techniques therein employed. Acknowledging that the crisis of cognitivism has opened new spaces of autonomy to interpretation, our main aim is to ascertain whether there is a technical and legal heritage that the interpreters use and how legislation and judicial review are mutually interconnected. Our work should allow facing one chief question: whether and in how far is the interpretative activity of the judges still based on scientific assumptions? In order to provide an answer to this question we have developed a software tool to annotate judgments with the interpretative arguments used in reaching the decision. Investigating the connections between linguistic structures and argumentative techniques; individuating trends in the usage of arguments, or in the usage of parameter provisions (which elements of the Constitution are mostly in conjunction with a given argument); devising models to represent judgements; formulating and testing hypotheses on the nature of arguments and their usage: for all these purposes, our corpus of annotated judgements will provide a solid experimental ground. Also, in a mid-term perspective, collecting a corpus of annotated judgments will allow applying natural language processing technologies to deepen the analysis of such texts.

The paper is structured as follows. First we survey some related approaches to the theory of argumentation (Section 2). We then illustrate the implemented system: we introduce the argumentation techniques taxonomy, and describe the implemented system with the representation for Italian Constitutional Court judgments and some features of the system (Section 3). Finally, we draw some conclusions and point out issues that still need to be addressed in future work (Section 4).

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2 Related Works

A major gap needs to be filled to systematically investigate argumentation: on the one side, a set of argumentation schemes exists that has been carried out by a long logical and legal tradition. On the other side, several approaches have been proposed to represent argumentation schemes, that at least partly fit to the models existing in legal theory. In particular, two chief issues are to understand whether any model exists that can be used to formally represent the reasoning steps upon which argumentation is based; and to understand whether and in what extent such a representation can be automatically extracted from judgements. In the following we briefly survey few approaches and AI systems that are relevant to our present concerns.

Argumentation models can be arranged into a three-layers taxonomy, consisting of monological models, dialogical models and rhetorical models. Monological models are concerned with the understanding of the internal structure of arguments; their focus is on the component of arguments, rather on the relationships between arguments. Dialogical models are those emphasizing the relationships between arguments. In rhetorical models argumentation discourses are considered on the base of audience's perception as evaluative judgements, rather than in connection with the truth value of propositions. We are mostly concerned with monological models; in particular, in this line of investigations the notion of argumentation scheme has emerged, which is central to our work.

Similar to logical proofs, in argumentation, a conclusion follows from a set of premises. It is possible to distinguish premises: in arguments expressed in natural language, it is typically possible to individuate different roles. Identifying such roles allows identifying the ways arguments can be accepted or attacked, and produces argumentation schemes. In turn, analysing practical reasoning in terms of argument schemes produces a taxonomy of arguments. An highly influential model of argument was carried out by Toulmin in the late 50’s. Toulmin’s model has been then extended in various directions.

Reed & Walton proposed a model of argumentation based on the so called argumentation scheme. Such schemes have a crucial role in understanding everyday discourse, as they allow reconstructing one’s

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argumentation, for example “by filling in the implicit premises needed to make an argument fit the requirements of the appeal to expert opinion”. The work by Anscombe & Ducrot is focused on linguistic phenomena, and investigates the relationship between statements or propositions. In particular, their work is concerned with the argumentative instructions involved in the use of argumentative connectors such as but and however in natural language. This line of research naturally brings to the exploration of argumentative discourse, such as in the works by Moulin.

Finally, some recent works have been proposed that are closely related to our present efforts. The work by Tiscornia and colleagues attempts to provide a quantitative characterization of the ‘massime’ (case law abstracts) contained in law abstracts of various sorts of Italian Courts. Such decisions have been collected, modelled and analysed to formulate hypotheses for explaining and classifying jurisprudential trends. Much in the same spirit of our present work, balancing is seen as an activity rationally controllable; “a rational reconstruction of balancing is, in fact, possible by explaining the set of relevant properties in the light of which one of the two competing principles prevails over the other”. A conceptual modeling of decisions has been started, based on an ontology representing legal concepts included in judicial argumentation. The work by Sartor proposes a model for teleological reasoning that takes into account proportionality: a characterization of proportionality of legislative choices in terms of teleological appropriateness is proposed. In particular, this work explores and characterizes the trade-offs needed so that “the relative importance of the differential impact on the values at issue becomes decisive”. This approach attempts to tackle those cases in which we find that a given choice is preferable under a given value, and the other one is preferable with regard to a different value.

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3 **SENT\textsc{net}, a system for annotating Italian Constitutional Court decisions**

In order to carry out a systematic investigation on the judgements of the Italian Constitutional Court, we have analyzed the argumentative techniques most frequent in the judgments of the Italian Constitutional Court, we have formally defined the structure of judgements, and devised a software tool to collect such texts, along with the argumentations annotated by human experts. We first describe the argumentative techniques used, then we introduce our encoding of the judgements, and, finally, we illustrate the main features of the implemented system, SentNet.

3.1 The argumentative techniques used in Italian Constitutional Court decisions

We now illustrate the interpretative techniques that have been historically established through the work of lawyers and that they recognize as legitimate. Based on the study of the jurisprudence of the Italian Constitutional Court, we propose to identify four categories of interpretative techniques:

1. techniques used to identify the rules by assigning meanings to provisions of the legal system;
2. techniques used not to identify the rules by assigning meanings to provisions of the legal system, but to support the decision based on the rules previously identified;
3. techniques used to produce the rule by assigning -by balancing- specific meanings to provisions containing principles;
4. techniques used to produce the rule by judgments of reasonableness then don’t used to assign meanings to provisions.

Only the first category of techniques is directly attributable to the classical theory of interpretation. The other three categories are used to support the decisions of the Constitutional Court, without conducting a specific activity of attribution of meaning.

3.1.1 Techniques used to identify the rules by assigning meanings to provisions of the legal system

This category includes the classic arguments of interpretation, which find their most complete formulation in the work of Tarello\textsuperscript{12}:

- Psychological argument (appeal to the will of the legislator);

\textsuperscript{12} A summary description is provided at the URL: http://www.dircost.unito.it/SentNet1.01/def/sn_descrizione_argomenti.shtml
• Historical argument (assumption of continuity – hypothesis of the conservative legislator);
  • *A contrario* argument;
  • Literal argument (syntactical and grammatical considerations);
  • Coherency of the legal system argument (horizontal: between statutes; vertical: adequate interpretation to the Constitution and to supranational and international law);
  • Completeness of the legal system argument;
  • Economical argument (hypothesis of of non-redundancy of the legislator);
  • *Ab absurdo* argument (apagogical argument);
  • Systematic argument:
    a) *sedes materiae* argument (topographic argument);
    b) terminologic costancy argument;
    c) conceptualistic argument (dogmatic argument);
  • Naturalistic argument (hypothesis of the legislator powerless; reference to common sense);
  • *A simili* argument (analogia legis);
  • Argument from general principles (analogia juris);
  • Teleological argument (hypothesis of the legislator with purposes);
  • *A fortiori* argument (*a minori ad maius, a maiori ad minus*);
  • Authoritative or *ab exemplo* argument (reference to opinio doctorum, reference to earlier case law: ordinary jurisdiction, explicit reference to the “diritto vivente”, reference to the administrative application, reference to its previous, reference to other jurisdictions)
  • Equitable argument (principles of justice used to select the meanings of provisions).

As the result of our analysis of the activity of the Constitutional Court, we add further arguments that assign meanings:

• Reference to in progress legislative reforms: it is the argument according to which a possible meaning is preferred to another because of its consistency with legislative reforms that are in progress;

• Explicit evaluation of the practical consequences of possible acceptance: it is the argument by which the interpreter (in the present setting, the Constitutional Court) motivates the reasons for current decision to assign a specific meaning to a statement through an explicit evaluation of the practical consequences which would follow from a possible decision of acceptance;
3.1.2 Techniques used not to identify the rules by assigning meanings to provisions of the legal system, but to support the decision based on the rules previously identified.

This category includes the arguments used by the interpreters to dissolve decision dilemmas cannot be solved with additional interpretive activities:

- Explicit and motivated overruling of their previous: it is the technique that legitimizes the application to the case of a rule, already identified on the basis of other arguments, noting explicitly that it exceeds previous interpretations;
- Reference to the discretion of the legislator (space unaffected by the parameter rule): it is the technique whereby the interpreter, considering a object rule already identified on the basis of other arguments, explicitly states that the parameter rule is silent;
- Reference to the discretion of the legislator (lack of “norma a rime obbligate”: no analogia juris): it is the technique whereby the interpreter, considering a object rule already identified on the basis of other arguments, explicitly states that it falls within the plurality of solutions tolerated by the parameter rule.

3.1.3 Techniques used to produce the rule by assigning - by balancing - specific meanings to provisions containing principles.

The balance may be:
1. identification of the minimum essential content;
2. identification of the excellent proportion.

The hermeneutical process leading to the balance between constitutional principles can be summarized as follows:

1. there is a conflict between the principle - generically understood - which can be related the provision X (or: the combined of the provisions \( A, B \) and \( C \)) and the principle - generically understood - which can be related the provision Y (or: the combined of the provisions \( E, F \) and \( G \));
2. this conflict can be solved in two ways: a) identifying the best possible ratio between the two principles, or b) identifying the limits beyond which the compression of one of the two principles can not go;

3. in the first case the Court will define the optimal balance point; in the second one the Court will define the minimum necessary content of the conflicting principles (or at least of the “attacked”), by setting the lower boundaries of the principles (or at least of the “attacked”);

4. yet, the Court finds these (equilibrium) points or these (border) lines on the basis of the previous assumption of:
   - one of many possible criteria of justice which, as demonstrated by Kelsen, refer all - except that of charity - to systems of values and preferences whose existence is assumed and accepted by those using the criterion;
   - a specific meaning, that in current setting is attributed to this criterion;

5. based on the specific meaning associated to a particular criterion of justice, the Court attaches to the constitutional provisions at issue the meanings to solve the conflict. In the case of the excellent proportion are declare unconstitutional all the meanings of the provisions that don’t coincide with the one that expresses the detailed balance. In the case of minimum essential meaning you will declare unconstitutional only the meanings that are below the one of “boundary”.

In other words, the definition of the excellent balance or that of the minimum essential level is the parameter rule by which the Court examined the constitutionality of the challenged provision. So the balance is not a way to apply the constitutional principles, but a tool to identify a parameter rule hitherto unexpressed.

3.1.4 Techniques used to produce the rule by judgments of reasonableness then don’t used to assign meanings to provisions

The reasonableness can be understood:

1. as instrumental reasonableness (judgment of reasonableness formulable in terms of suitability, efficacy, proportionality): a rule appears to be in contradiction with the purpose that the legislator, implicitly or explicitly, states that should be pursued (incoherence teleological);

2. as intersubjective reasonableness (judgment of reasonableness can be stated in terms of equality): a rule is intimately contradictory (internal incoherence) or irreducible to the legal system; it is totally non-harmonized (systemic incoherence);
3. as additional applications of the residual principle: these situations occur when, outside the scope of the principle of equality, where the legislative discretion is not bound by the Constitution - a legal relationship is governed in a way that unreasonably sacrifices the interests of either party.

The reasonableness, therefore, is involved when the parameter that the Court uses to decide on the unconstitutionality of a rule is not in the meaning attributed to a constitutional provision, but apart from the manner in which the decision is discussed - in the application of the criterion of the justice as convenience (as adequacy of the rule to the case). More precisely, by resorting to the justice as convenience, the Court uses as parameter the constitutional rule that there should be, but there is not (the rule that the interpreter’s sense of justice, in front of the case perceived as missing) and, based on the infringement of that parameter, declares the unconstitutionality.

In the considered cases what matters is not the use of a rule of justice, but rather the fact that this rule is not used to select one of the possible meanings of a sentence. If it was the case, it would be a simple use of the equitable criterion. What differentiates the hypothesis now examined from the use of the criterion is that here the principle of justice operates not as a rule on the interpretation of the law, but as a rule on its production (it produces the parameter rule).

From the theoretical point of view, the assessment of reasonableness is based on a triangular relationship. We can distinguish between two cases:

**Unreasonable differentiation treatment.** Example: the rule states that only the working mother (and not the working father) may be absent from work in case of illness of the son. To be called into question here is the constitutionality of the unspoken rule Y, which excludes the father from the benefit (it complains about the different treatment of two similar situations). The rule X (the so-called *tertium comparationis*) is compared with the rule Y by identifying the ratio of the rule X and whether in light of this ratio, the rule Y is reasonable (hence the triangular relationship between rule X, rule Y and ratio of the rule X). In the example the rationale of the rule X (which allows the working mother to be absent from work in case of illness of his son) is the protection of the child’s right to receive assistance: it is therefore unreasonable, at least where the mother is unable, that the opportunity to assist is not extended to the father.

**Unreasonable equality treatment.** Example: two criminal rules punish the same criminal offense in the same way both when the author acted with intent (rule X) and when the offender has acted with
negligence (rule Y). To come into question is the constitutionality of the rule Y that punishes a less severe situation in the same way that a situation more severe (equal treatment of two different situations). The rule X (so-called *tertium comparationis*) is compared with the rule Y by identifying the ratio of the rule X and whether it is reasonable that this ratio is the same of the rule Y (hence the triangular relationship is between rule X, and ratio of the rule X). In the example the ratio of the rule X (to punish an intentional offense) cannot be the same of the rule Y, because it considers a different situation (a culpable offense); it is thereby unreasonable that the rule Y provides the same penalty as the rule X does.

3.2 Domain encoding: structural representation of judgements

We devised two different levels of description for representing relevant information in the judgements of Italian Constitutional Court. The first one is the structural level, and the second one is the functional level. Namely, the structural level contains information about structural components of judgements, and it allows to collect information about which parts of the judgements actually contain functional elements. Elements at the functional level can be thought of as semantic metadata, and they constitute the information necessary to describe a judgement in a compact way. For example, in the heading (structural view) we find information about the object of the judgement (functional view).

Judgements produced by the Italian Constitutional Court reveal a rather regular structure. The structure we individuated is as follows.

**Heading.** The heading of judgements contains fundamental information about: i) the number and year of current judgement that identify the considered judgement; ii) about the object(s) of the judgement; iii) about the authorities that posed the constitutional question to the Court.\(^1\)

**Issue of Fact.** The Issue of Fact element, typically introduced by the formula “ritenuto in fatto” (considered the following fact), contains a description of the fact from whom the problem originating current request to the Court arose.

**Issue of Law.** The Issue of Law element, typically introduced by the formula “considerato in diritto” (considered the law aspects), contains the reasoning steps leading to the decision of the Court. This is the place where argumentation techniques come into play, possibly associated either to the object or to the parameter.

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\(^1\) For example, the Presidency of the Council of Ministers, or the Presidency of a Region or Autonomous Province.
Pronouncement. The Pronouncement element is typically introduced by the formula “per questi motivi” (for these reasons); it contains one or more decisions (or pronouncements), one for each object provision (obj_provision, more about it in the following).

Signature. Finally, the last element present in any judgement is the Signature, that in turn contains three elements: i) the date of the decision; ii) the signers list; and the iii) registration date.

3.3 Domain encoding: functional representation of judgements

Functional information allows referring directly to the elements of judgements without considering the structural partitions of the document that contain them.

In general terms, a judgement (sentenza) contains at least one decision (decisione). The decision is a complex object, having a type, an object (oggetto), a parameter (parametro) and, optionally, one or more arguments. A graphical account of the main elements of the judgement is provided in Figure 1.

Figure 1. The main functional elements composing the judgement, and the structure of judgement.

Let us consider more closely the decision: its type tells in a tautly fashion what the Court decided about the decision at hand. Its object is the disposition about whom the Court is asked to state whether it is not compliant to the Italian Constitution. The object is composed by one or more object provisions and, optionally, by one or more argumentation techniques. Argumentation technique(s) is (are) related to a given object provision, that through the argument is (are) clarified. For example by borrowing a well-known Hart’s example, given an object provision that forbids to introduce dogs in some sort of gardens, one could elaborate through the a fortiori argument that neither tigers or lions are allowed to access that
garden. Any primary legal source can be the source of the object provisions, such as laws, decrees, dispositions contained in the Civil Code, in the Navigation Code, etc.\textsuperscript{14}

A decision has also a parameter. It is the normative source upon which the pronouncement is based; a parameter is composed in turn by one or more parameter provisions and—optionally—, one or more argumentation techniques can be present. Argumentation technique(s) is (are) related to a given parameter provision, that through that argument is (are) clarified. For example, sometimes to clarify the meaning of a given provision from Italian Constitution the preliminary works that lead to the final formulation of such Constitution are considered. In this case, the controversial article is the parameter provision, and the argumentation technique is the historical argumentation. Only the Italian Constitution itself and constitutional laws can constitute the parameter provision of a pronouncement. Object and parameter provisions are identified through the number, year and article number of the normative source.

Both the object provision and the parameter provision are a source, and sources are characterized by a source type (e.g., Law, Decree, the Italian Constitution, etc.), an optional number, an optional year (e.g., the Constitution or the Civil Code have no number and year associated), and an article, containing also information about comma and finer grained partitions.

We can informally recap the functional representation of judgements as follows:

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\begin{align*}
\text{decision} & \rightarrow \text{type,object,parameter,arg\_technique}^* \\
\text{object} & \rightarrow \text{obj\_provision}^*,\text{arg\_technique}^* \\
\text{parameter} & \rightarrow \text{param\_provision}^*,\text{arg\_technique}^* \\
\text{obj\_provision} & \rightarrow \text{source} \\
\text{param\_provision} & \rightarrow \text{source} \\
\text{source} & \rightarrow \text{src\_type,number^?,year^?,article}
\end{align*}
\]

Such representation of the judgement can be used to naturally extend existing standard definitions of normative sources, such as the *NormeInRete* (NIR) specifications\textsuperscript{15}.

\textsuperscript{14} For a complete list of the types of decisions considered in our project, please refer to the URL http://www.dircost.unito.it/SentNet1.01/def/sn_tipi_decisioni.shtml.

3.4 Features of the system for annotating Italian Constitutional Court judgments

We have implemented a system to build a corpus of judgements; a first release of the system is currently in production\textsuperscript{16}, and an improved version of the system is under active development. As of September 2011, about 380 judgements have been annotated with some 1,200 argumentation techniques. The software currently available allows annotating argumentation techniques; the next release will allow annotating and searching all functional elements earlier introduced.

The application for uploading the judgements files, and to insert additional information such as about the type of the decision and about argumentation techniques is web based. In particular, the procedure for annotating the argumentation techniques individuated in the issue of matter section of the judgement involves selecting the argument type from a list and then selecting the portion of text to be associated (Figure 2).

![Figure 2. The Web application used for annotating Italian Constitutional Judgements. In particular in the central frame, is displayed the text of the judgement: after having chosen an argumentation technique the annotator selects the associated text.](image)

The corpus can be searched by argumentation technique; in the page of results a mapping between arguments and portions of text is provided, so to allow the user a direct access to legal documents.

\textsuperscript{16} The SentNet system is available at the URL \url{http://www.dircost.unito.it/SentNet}
Further features are currently being added to the search functionalities in order to query the system about decision type, by specifying the object provision, the parameter provision and in general all elements that are part of the functional description of judgements introduced above.

4 The Portuguese project

The Portuguese project, founded by FCT (Fundação para a Ciência e a Tecnologia) and developed by the Institute for Philosophy of Language (IFL) at the Universidade Nova of Lisbon, is inspired by the Italian project with some differences. The Portuguese project starts from the assumption of the variety of approaches and, consequently, of the analytical tools for legal and practical argumentation, and aims to demonstrate that not all these approaches (with their respective tools) are incompatible: probably, they can be useful at different levels. In this suggested kind of analytical eclecticism, the rhetorical, the logical and the dialectical perspectives become interdependent dimensions of analysis. For this purpose, it would be extremely useful to analyze the justificatory function of the arguments put forward by judges of Portuguese Constitutional Court.

First of all, high courts usually deal with indisputably important issues: Constitutional Courts are the fora in which the most urgent political and social questions are debated and, often, decided. Even when they present their decision as purely “legal”, based on specialized technical reasoning that attempts to stay away from direct appeal to moral and political reasons, the decision is nevertheless ultimately based on morally and politically grounded constitutional principles. Thus, in some decisions taken by high courts, we may find that the justification is a combination of legal, political and moral arguments, which is a complex example of practical argumentation.

Secondly, legal argumentation is usually considered the more formal (or, at least, formalistic) kind of practical argumentation, thanks to the long tradition of “legal syllogism” (considered to be more formal in this sense) but also to the common legal restraint (considered to be more formalistic in this sense). Yet in arguments such as those used, for example, by high courts in their justifications, we may find not only strict formalism and adherence to the letter of the law but also the attempt to resolve difference of opinion and conflicts of interest, and perhaps also to persuade the legal community, the legislator or even public opinion of the soundness of the court’s decision. It is in these cases that we consider that a kind of analytical eclecticism offers the best chance of being useful, not
in the sense of some “general unified theory of argumentation” but, much more modestly, in the sense of a more complete toolbox.

In continental legal tradition, various argumentative techniques can be distinguished, such as the psychological, historical, teleological, economical, systematic and naturalistic argument. Apart from these “traditional” legal arguments, there are also arguments based on the so-called “special legal argument forms”\(^\text{17}\), like the analogical or the apagological (\textit{reductio ad absurdum}) argument, or like the \textit{argumentum a contrario}. Different authors have produced various taxonomies of “interpretive arguments” or “forms” or “methods”: for this reason, the first step of the project consists of implementing an “integrated” catalogue of “traditional legal arguments”, through a comparison of the existing inventories. This catalogue can be used in order to analyze the grounds of a significant sample of decisions (\textit{Acórdãos}) taken by the Portuguese \textit{Tribunal Constitucional}. Subsequently, analysis may be improved by resorting to different approaches, such as the pragmatic-dialectical approach or Douglas Walton’s argumentation schemes\(^\text{18}\). In both these approaches, the key-point is the reconstruction of argumentation schemes (such as “symptomatic argumentation”, “analogical argumentation”, “causal argumentation”) and, from the point of view of the pragma-dialectical theory, which can be considered strongly normative, also the evaluation of the correct application of the schemes, through a set of rules for critical discussion which must be observed. Participants who violate one or more critical rules are committing, from this point of view, a \textit{fallacy}. Consequently, these critical rules can be used in order to check whether one or more participants have committed a \textit{fallacy} an analytical approach that can be extended to the analysis of high courts’ decisions.

The online availability, for the entire legal community, of the collection of these decisions aims to consider the analysis as a “work in progress” open to the community of Portuguese scholars and legal operators, which may even be extended to similar analysis projects in other European countries.

5 \textbf{CONCLUSIONS AND FUTURE WORK}

A fundamental issue is the bottleneck due to putting the information into the system, and due to analysing the argumentation techniques, as well. Next steps will involve automating the extraction of some elements


like the sub-elements of the judgement, such as type, object, parameter; we will also investigate whether argumentation techniques exhibit some commonalities in the syntactic or semantic structures. Should this line of investigation unveil some statistically significant pattern (e.g., those intervening between parse trees of the judgements and argumentation techniques), we would be able to devise software tools useful for both scholars and annotators. The task of analysing a text would be simplified: by searching for some idiomatic periphrases or for some sorts of syntactic/semantic realizations (for instance, proper to legal language) individuating argumentation steps would result easier, and less error-prone. Of course, also the annotation workflow would benefit from such tools.

Finally, we plan to extend our work to considering the decisions of high courts from further countries. We expect the comparative perspective to reveal interesting similarities in the use of argumentation techniques; such mappings between syntactic/semantic structure could be investigated in other national languages as well, thereby providing a strong impulse to a novel comparative investigation.

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