

Building blocks of a legal system. Comments on Summers' *Preadvies* for the *Vereniging voor Wijsbegeerte van het Recht*

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To me, reading Summers' *Preadvies*¹ is like learning a new language. Many of the points he makes and the concerns that he expresses are familiar, but they are cast in a vocabulary different from the one I am used to. I must say that I enjoyed starting to learn this language. General reasons for my enjoyment include Summers' analytical approach and the proximity of the themes addressed by Summers to themes that I often think about myself. A more specific reason is that it allows me to rethink some of the background assumptions in my own field and compare them to those of Summers. I will report on some of this rethinking in these comments and meanwhile raise some questions that I have concerning Summers' *Preadvies*. I start with a brief comment on the formal method in artificial intelligence and in law. Then I turn to the logical formalization of legal reasoning. I conclude with a note on the building blocks of law.

Both artificial intelligence and the law use formal methods, but they have their limits

My field is artificial intelligence and law. In this field, the methods and techniques of artificial intelligence are applied to law. A central method of artificial intelligence is formalization, for instance, by using logic. One could say that artificial intelligence tries to push the limits of what can be achieved using formal methods as far as possible. A lot has been achieved using artificial intelligence technology (as evidenced by knowledge-based systems, computer chess and automated character recognition), but there are also some fundamental bottlenecks. In particular, the understanding of natural language and general knowledge of the world remain beyond the reach of today's state-of-the-art technology.

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1 R.S. Summers, Form and function in discrete legal units and in a legal system as a whole, R&R 2005/1, p. 8-22.

The law also has a bias towards form. For instance, codification of legal rules is a means to organize rules that have arisen in case law, and as such it contributes to the goal of legal security. The act of codification can be seen as an act of formalization. Another example is the separation of powers (functional or otherwise), which, when implemented in a legal system, uses formal constraints to restrain the empowered authorities. Summers gives many other examples.

Interestingly enough, in law it is taken for granted that there are limits to what can be achieved using formal means. For instance, no lawyer thinks that all of society (including its future developments) can be properly and justly regulated by means of today's legal codes. It is understood that the autonomy of judges helps to fill the necessarily existing gaps left by the law. Of course, in its turn, the law (both in its formal and in its material sense) restrains the judges' autonomy.

Now I arrive at my first question. In his *Preadvies*, Summers chooses to emphasize the role of form. My question is: why emphasize form to such an extent? In my personal understanding of the law, it is the *interaction between the formal and the material* that makes the law such an interesting and complex field of study. For instance, one could very well argue that the tension between positive law (formalized law) and justice (unformalized law, or proto-law) is necessary to make the law work as well as it does. I fully endorse the systematic study of the role of the formal in the law. But why not accentuate more strongly the role of the material and the interaction between the formal and the material? Interestingly, it seems that Summers considers the role of the formal to be neglected, while I would personally suggest that the role of the material deserves more attention (given the ample attention for positive, formalized law in legal doctrine).

Legal logic specifies formal patterns of legal reasoning

Some of the most fruitful and innovating research in the area of artificial intelligence as applied to the domain of law has been conducted by applying formal methods to legal argumentation and legal justification. A fine example of such research is Ashley's work on reasoning with precedents (1990, see also Roth 2003). Ashley shows how reasoning on the basis of case-based analogy and distinction can be treated formally and implemented in a computer system. Another example is the formal analysis of the relation between legal rules and principles (Verheij, Hage & Van den Herik 1998), which qualifies Dworkin's strict logical distinction between the two kinds. In addition, the role of dialogue in legal procedure has been studied using formal means (see Hage 2000 for an insightful overview).

In my view, a central lesson that has been learned in this body of work (Prakken 1997 is a good starting point) is that the 'universal' ambition of traditional logic can and should be shaken off when taking an argument-intensive domain such as the law seriously. This implies a shift from abstract to concrete logic (Verheij 2003). The development of such concrete logic involves the formal analysis of legal argumentation schemes, such as analogous rule application and systematic interpretation of codified legal rules (see also Walton 1996).

If I am correct, Summers would fit the formal aspects of legal reasoning and justification under the heading of methodologies in his listing of functional legal units. My second question is whether the methodologies of legal reasoning and justification are fully determined by formal aspects. If so, then I would like to hear about his views on the maxim 'Ius in causa positum': it is in the case itself that the law is made. And if not: what complementary material components are relevant for the analysis of the methodologies of legal reasoning and justification?

Legal ontologies reveal the building blocks of law

In the field of artificial intelligence, there is currently a movement that focuses on so-called ontologies. The plural used here may come as a surprise if one has not before met this specific use of the term 'ontology'. In artificial intelligence, an ontology is taken to be an explicit and formal specification of a conceptualization. Ontologies provide formal descriptions of particular domains of discourse. Typically, ontologies consist of lists of types of objects (classes) and the relations between them (properties). For instance, a medical ontology will contain lists of diseases and treatments and make explicit which treatments can cure which diseases. The use of ontologies is strongly promoted by the Semantic Web community (see, e.g., Antoniou & Van Harmelen 2004). The goal of this community is to advance the uses of today's World Wide Web by adding machine-readable semantic information.

The ontology approach has also been adopted in the field of artificial intelligence and law. A typical example is the frame-based conceptual ontology developed by Van Kralingen (1995) and Visser (1995). These authors distinguish three main types of objects, viz. norms, acts and concepts. Each norm has eight 'slots', for instance corresponding to its legal modality and its conditions of application. Another example of the ontology approach in the law is Hage & Verheij's abstract model of the law (1999). They treat the law as a dynamic system of states of affairs that are connected by rules and events.

Against this background, topics such as the signing of contracts, property rights and legal validity are analyzed.

In my view, the ontology approach in artificial intelligence and in Summers' project as summarized in his *Preadvies* are strikingly analogous in their methods. Both present lists of building blocks of the field of law and both specify properties of those building blocks. There are of course differences in terminology. For instance, whereas ontology researchers (nowadays) tend to speak of classes, objects and properties, Summers speaks of units, examples and constituent features, respectively. There may be slight discrepancies in meaning, but I think that on the whole these terminological differences can be bridged.

As a result, I regard Summers' work as an ontological enterprise. His approach to the analysis of the building blocks of legal systems is praiseworthy. Especially, the fact that he treats legal systems as a varied whole consisting of a diversity of entities is a positive contribution. In this respect it is noteworthy that for Summers, emphasizing that legal systems consist of more than rules is even a central goal (as exemplified by his second thesis). My view of Summers' project as ontology research implies that I do not consider his four main theses to be the most significant aspect of his work, as is suggested by the rhetorical structure of the *Preadvies*. It seems to me that the content of the theses is not controversial (at least not for me, formally inclined as I am) – which, by the way, does not imply that they do not deserve to be emphasized. In my view, the significance of Summers' work resides in the lists of fundamental building blocks of legal systems and in the analyses that lead to the lists. As a result, I look forward to the book length account of Summers' project.

My view on Summers' contribution as an ontological enterprise leads me to a third question. Why is this work positioned so abstractly as focusing on legal form? I agree with Summers that his use of the term 'form' can be connected to the use of this term by others and in other fields. Still, Summers' use of terminology can be confusing for the uninitiated. Summers seems to realize this, as becomes apparent from the section in which he defends his use of the concept of form. Wouldn't it be more adequate and less abstract to emphasize that the project is about the functional units of legal systems and their constituent features?

Summary

As I said, I enjoyed reading Summers' *Preadvies*. I consider it to be a noteworthy contribution to the ontology of legal systems, in the sense of specifying their building blocks and their properties. Some questions that arise in my mind are the following:

- 1 Why emphasize form to such an extent, instead of more strongly endorsing the role of the material as well as the interaction between the formal and the material?
- 2 Are the methodologies of legal reasoning and justification fully determined by formal aspects? If not, what complementary material components are relevant for the analysis of the methodologies of legal reasoning and justification?
- 3 Why is this work positioned so abstractly as focusing on legal form? Wouldn't it be more adequate and less abstract to emphasize that the project is about the functional units of legal systems and their constituent features?

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