

INFORMACINĖS SISTEMOS

Different views on law determine the separate representations of legal meanings in information systems

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This paper is concerned with the legal and legal documentation system as well as their interconnectedness. An exploratory research on the operational treatment of legal meaning is presented. The research question is based on how should the legal meaning of a legal act be represented. In our approach, legal meaning is related with to representation; for comparison, see the FRISCO framework and the semiotic tetrahedron. We explain the reasons for the multiple meanings of a legal act and its representation in separate information systems, because various stakeholders view the act differently. The Schweighofer's eight views/four methods/four syntheses model is presented to reveal different contents. Views are related with representations.

Keywords: legal informatics, operationalization of meaning, representation, semiotic tetrahedron, stakeholder's view.

1. Introduction

This paper is about the legal system, legal documentation and their interconnectedness. In law, there is a sharp differentiation between an act and its legal meaning; a prominent legal scholar, Hans Kelsen, has delved into these subjects (1967, pp. 2–5).¹ For further analysis, see Figure No. 6 and Section No. 3 of this article. “Norm” is the meaning of an act by which a certain behav-

ior is commanded, permitted or authorized (ibid. p. 5).

The subject matter of this study is the representation of legal meaning (which appears in Ought, the reality that ought to be) in computers (which appear in Is, the reality that is). The problem concerns operations with abstract entities that strengthen or lessen the legal meaning.

The finding is that there is no unique meaning and no universal representation of a legal act. This paper has explanatory purposes. The goal is to reveal the reasons for the different representations of law. Therefore, the legal domain is treated as a whole, as an enterprise, and the notion of a

¹ “The norm, as the specific meaning of an act directed toward the behavior of someone else, is to be carefully differentiated from the act of will whose meaning the norm is: the norm is an *ought*, but the act of will is an *is*.” (Kelsen 1967, p. 5)

stakeholder's view is used. A layman's view to the legal system may comprise a sole information system, namely that of primary legal sources, such as laws. However, a legal professional's view comprises more representations; see Section No. 4. The paper also aims to explain the difference between Is and Ought to software engineers. We will use a visualization pattern, which is composed of the horizontal stage and the vertical one. Our goal is also to visualize the explanations as visualizations represent meanings, too.

We tackle the granularity problem and take into account that legal documentation does not reproduce a legal source one-to-one. The whole text of a law or a regulation is nowadays a primary option in legal databases. Another option is a particular article of a regulation; see, e.g., the Austrian Legal Information System (<http://www.ris.bka.gv.at>). Therefore, our explanations can be taken into account in a methodology for the engineering of legal information systems.

The limitations of our research are in that the issues are tackled on an abstract level. Thus, we follow a top-down approach. We stand in a position of a theorist and prefer a "bird's-eye view." There are two options for analysis in law: either the content of norms is analyzed or not analyzed. In the first case, one encounters specific norms of a certain branch of law. In the second case, one stays in a position of legal theory. A practical implication is that concrete recommendations can be provided in the design of a concrete legal information system.

This paper explores the building of a bridge between legal texts and their representations in computers. We believe that the path connecting the legal text to programming legal norms, which are the meaning of the text, requires intermediate

steps. The premise of this paper is based on the idea that it is (almost) impossible to proceed directly in one step from legal texts to programming. Thus, we advocate a multi-arch bridge of some kind and step onto the first arch.

Legal machines implement legal meaning. Representing legal meaning correctly is important in law enforcement, where the so-called legal machines can contribute. Therefore, this research is topical. There are simple legal machines, such as traffic lights, barriers and vending machines, and complex ones, such as the electronic forms that are used in tax and finance. A legal machine can be defined as a machine in a system the actions of which have legal consequences. Legal machines shift raw facts (from Is) into institutional facts (from Ought). Interpreting (legal) requirements may require comprehending the law. This is important in engineering compliant software. Oberle et al. (2012) explore the regulatory compliance problem and provide an example of an app that violates data privacy law.

We insist on the holistic view and hold that neither law nor legal documentation can be successfully reduced to its component parts. The value of results lies in the explanations for engineers who analyze legal requirements and design legal machines.

2. The Approach – Different Meanings Appear in Different Representations

Software engineers may have difficulties understanding the differentiation between a fact and its legal meaning (Is and Ought). The reason is that nature and society are two distinct objects of scientific cognition, and we distinguish between natural and social sciences. A layman can hardly know all the

meanings of law. Therefore, most probably, he views the legal system as a collection of laws.

Suppose a person, a customer named Brown. The word (sign) “Mr. Brown” refers to the real thing (significant) (Figure No. 1, a). However, the next graphical sign, shown in Figure No. 1, b can be interpreted differently: a wine glass or two faces. Next, suppose that two persons – A and B – communicate about law. Law is a complex phenomenon and has multiple meanings. Therefore, most probably, A and B will have different conceptions in their minds (Figure No. 1, c). The problem is in making the conceptions of A and B consistent.

Therefore, we arrive at the problem of representing a conception of law.

Figure No. 2 illustrates relationships between symbols, objects and meaning as a meaning triangle (a semiotic triangle by Ogden and Richards 1923).

2.1. Relating Institutional Meaning with Representation

There are different kinds of meanings, such as scientific meaning, cultural meaning, religious meaning and so on. A policeman’s command “Halt!” obtains legal meaning, whereas a child’s utterance does not. A wedding ring is an example of cultural meaning, which strengthens the legal meaning of marriage.

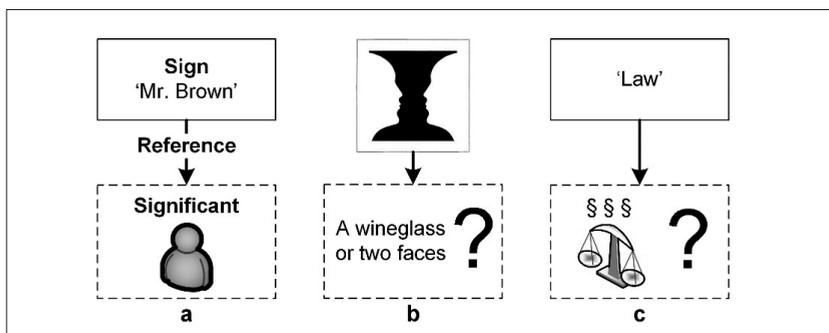


Figure 1: A binary relationship of the reference between a sign and its significant.

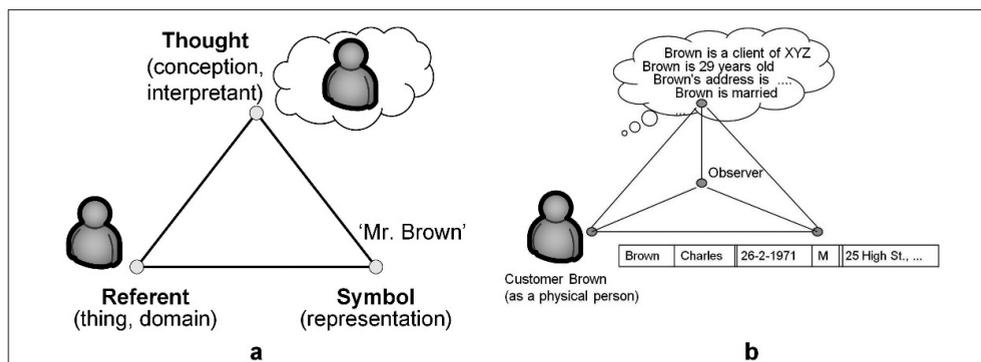


Figure No. 2: a) A tripartite relationship in the meaning triangle; see, e.g., Sowa (2000, p. 192), Ogden and Richards (1923, p. 11); b) Example of the use of the FRISCO semiotic tetrahedron (Hesse and Verrijn-Stuart 2000).

Our idea is to relate the institutional meaning of a legal act with its representation. We do not talk about the mental processes in our minds, because they cannot be observed. Knowing the meaning of words does not depend on understanding the nature of these processes. Legal theory holds that legal norm is a mental product. It extracts, reconstructs and formulates the legal meaning of a norm. A norm is obtained by interpreting a legal text. A paragraph can contain several norms, or a norm can continue through several paragraphs, part here and part there. A simple form is: “if SF then LC,” read “when a state of affairs (SF) is given, then the legal consequence (LC) applies,” SF→LC.

Operations that modify the institutional meaning appear in legitimate workflow events (institutional facts conformant with the law). The events can be raised by authorities’ decisions or computers (e.g., a tax administration system). The process of modifying act_1 to produce a modified act act_2 involves representations in Is (Figure No. 3). Note that we do not reduce Ought to Is; we relate them.

As an example, suppose that an act is strengthened, for example, from a minister’s draft to a ruling and then to a law. Although

the content may be similar, its meaning differs in the power.

We follow the FRISCO semiotic tetrahedron; see Figure No. 2. The tetrahedron extends the three classical categories (the semiotic triangle) by an additional actor, an interpreter. He is a representer, a human actor involved in a representing action (Falkenberg et al. 1998, p. 48). Meaning is defined as the relationship established by people in a language community between a sign standing for an object (ibid., p. 195).

2.2. Multiple Representations of a Legal Act

There are many stakeholders in a scenario to deal with a legal act. Each stakeholder may have a different view of the act. Each view produces a separate representation. Eight views are proposed in the eight-views/four-methods/four-syntheses approach by Schweighofer (2015). It serves the representation, analysis and synthesis of legal materials as legal data science. This model describes the eight different representations of a legal system and four computer-supported methods of analysis, which lead to a synthesis, a consolidated and structured analysis of a legal domain, which may

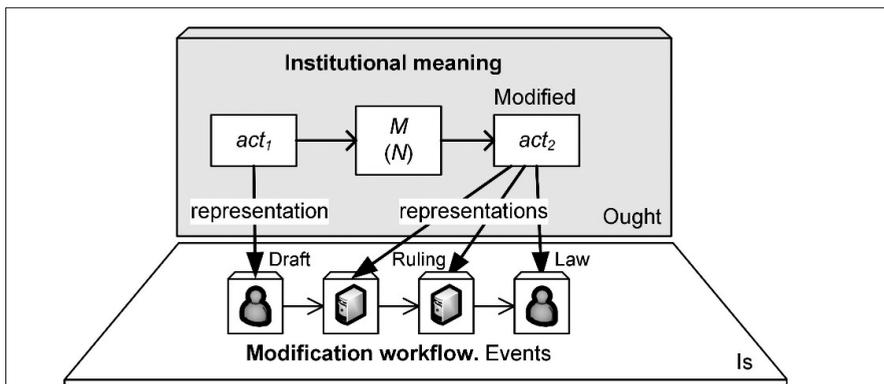


Figure No. 3: Modification in Ought is related with the events in Is.

be either (1) a commentary, an electronic legal handbook, (2) a dynamic electronic legal commentary DynELC, (3) a representation for citizens or (4) a case-based synthesis (Figure No. 4). The eight views (or representations of law) are: 1) Text corpus; 2) Metadata view; 3) Citation network view; 4) User view; 5) Logical view; 6) Ontological view; 7) Visualization view; 8) Argumentation view. The four methods are: 1) Interpretation (search, reading, and understanding); 2) Documentation (search and processing); 3) Structural analysis (conceptual and logical); 4) Fact analysis.

Related work. Representation is stressed by Nadin (2011, p. 18), who writes about the semiotics of computation: “[t]he characteristic of semiotics, as Hausdorff understood and as Cassirer argued for is re-representation. The fact that the means of representation can be called signs, or be defined as signs, is less relevant than the essential functions of semiotics. In close relation to representation is the function

of interpretation through which meaning is conjured.”

2.3. Relating a View with a Layer of Infrastructural Services

From the standpoint of software engineering, a view corresponds to a layer of infrastructural services for several domains (Figure No. 5). The domains may be different representations of the legal system. A layer corresponds to a subsystem and leads to a framework that comprises horizontal and vertical interfaces. Layers are present in a more general, matrix-shaped model, where vertical slices denote the branches of engineering, such as automotive engineering, electrical engineering, chemical engineering etc., and horizontal layers correspond to the features, such as quality engineering, reliability engineering etc. In this comparison, horizontal layers correspond to view characteristics, such as a text corpus, an annotation, a citation, an argumentation etc.

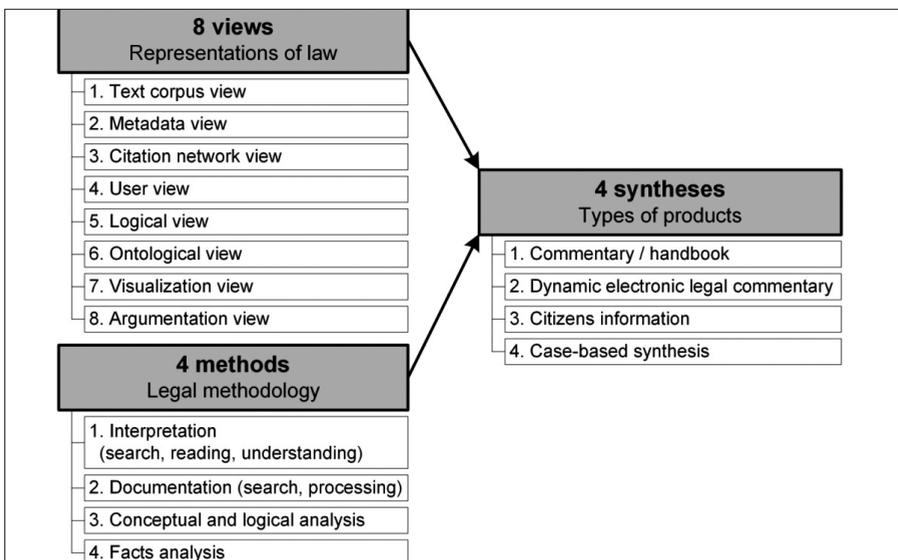


Figure No. 4: Schweighofer's eight-views/four-methods/four-syntheses model

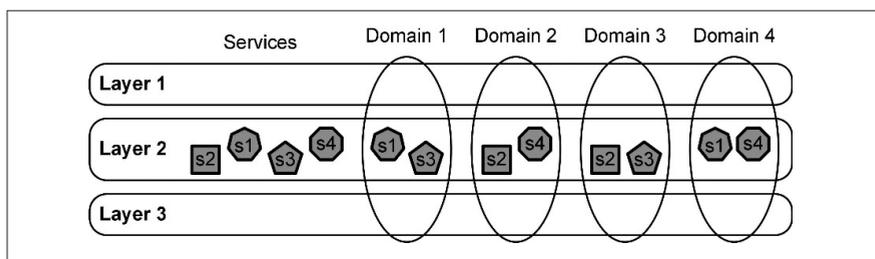


Figure No. 5: A view corresponds to a layer of infrastructural services

Legal informatics lie in the periphery of law. The idea of a core and periphery in law leads to the idea of layers. This idea contributes to the conceptualization of the legal domain from the technological viewpoint. Such a conceptualization will contrast with the jurisprudential outlines of law, where the branches of law or the functions of law (legislative, executive and judicative) play a key role. Soft law challenges “black-letter” law in the information society. To represent data and services in the legal domain, proper conceptualization is required. The views of a legal documentation system constitute a proper beginning. The layers of legal information should be taken into account in the engineering of legal information systems (LISs).

3. Content Meaning and Institutional Meaning

An act is a “happening occurring at a certain time and in a certain place” and the legal meaning of this act is “the meaning conferred upon the act by the law” (Kelsen, 1967, p. 2). An example is of two facts about a gangster and a tax-official, which differentiates the legal meaning.² Two kinds of

“meanings” of a legal act are distinguished (Figure No. 6):

1. *The content meaning.* It appears in Is (*das Sein*). It is determined by causality. It is established by the content, information, semantics and linguistic interpretation of a legal act. It is an intangible, abstract entity but linked with a fact, a material object, such as a document or an event in Is. The content meaning can be represented and processed by computers as data – for instance, the text of a document.
2. *The institutional meaning.* It appears in Ought (*das Sollen*). It is determined by imputation (Kelsen 1967, p. 76). It is the objective legal meaning of the legal act (*der Sinn*). It is an objective, intangible, abstract, nonfactual entity and not a material object. A computer cannot understand it. A computer can process only representations (in Is) of the institutional meaning.

Institutional facts, like contracts, marriages, treaties and so on, are treated as objects that are not material. Ought, the reality that ought to be, is characterized as a spiritual, ideal and moral reality. Hence, institutional facts have two links: (1) to Ought and (2) to Is. Following the first link,

² Kelsen writes: “The command of a gangster to turn over to him a certain amount of money has the same subjective meaning as the command of an income-tax official, namely that the individual at whom the command is directed ought to pay something. But only the

command of the official, not that of the gangster, has the meaning of a valid norm, binding upon the addressed individual” (Kelsen 1967, p. 8).

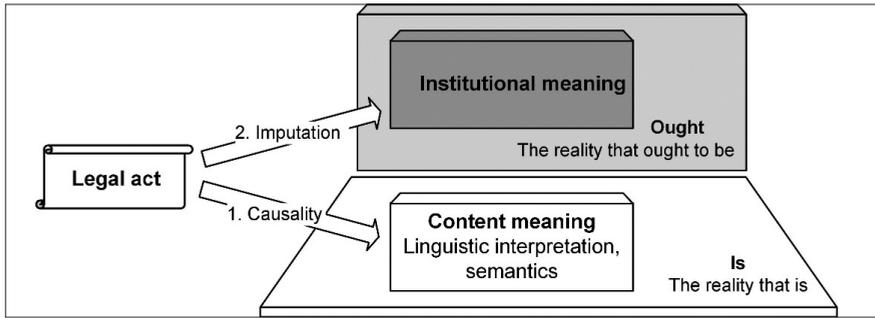


Figure No. 6: *The content meaning (Is) and the institutional meaning (Ought) of a legal act*

an institutional fact is an abstract, spiritual, and ideal entity and is an abstract object, analogically to the way in which norms and legal institutions are also abstract objects.

The dualism of Is and Ought. Kelsen holds that Ought does not follow from Is. In formal logic, no indicative statement logically follows from a modal ought-statement. In other words, *Obligatory p* does not imply *p*. However, this does not mean that there is no relationship between Is and Ought. The direction of the conformance relationship points from Is to Ought (Kelsen 1967, p. 6).

Strengthening or lessening of the content meaning. Although the content information can be divided into prescriptive, descriptive and constitutive statements, they are purely factual and linguistic, and they have no normative significance; consider, for instance, a child's utterance. To add institutional meaning, the statements have to be accompanied by a legal act – for example, a legal speech act.

The actors around a legal act have the means to strengthen or lessen its content meaning, for example:

1. *Logic.* Logical conclusions, which follow from the premises, can be stated clearly. Open texture can also be reduced. However, legal consequences

(Ought) need not follow from a person's statement (Is).

2. *Adding objective legal terms.* Proper legal terms can be added, for instance, in contract use clauses, such as performance, considerations and the like.
3. *Material basis.* The medium of a legal act can be stressed; for instance, the substrate, an (electronic) document or the whole legal machine.

The repertoire of means to modify the institutional meaning, however, differs from the repertoire to modify the content meaning. Jurists know the essence of law, but laymen do not. Software engineers need to understand the essence in order to develop legal machines. The machines can raise institutional events (in Is) which modify – strengthen or lessen – the institutional meaning (in Ought).

Semantics and pragmatics. The content meaning can also be called *semantic meaning*. The reason for this is that the linguistic interpretation is at the forefront here. Analogically, the institutional meaning can also be called *pragmatic meaning*. Semantics deal with the relation between signs and the things to which they refer, and pragmatics deal with the relation between signs and the effects they have on the people who use them. The content meaning has

weak significance compared with the strong significance of the institutional meaning.

Constructivism and meaning. We share the philosophical world view and the constructivist position that social reality is constructed (Falkenberg et al. 1998, p. 29).³ Our term “institutional meaning” corresponds to what is called the “shared conception.”⁴

The world view of Falkenberg et al. supposes the presence of actors and actands and the “quality of causation.” We note that their “causation” comprises both the causality and imputation. The imputation concept is present tacitly, because a group of people agrees on shared conceptions. Therefore, the notion of rule is defined in the FRISCO report.

4. The Notion of a View

Lu and Conrad (2012, 2013) view the system of legal documents from the standpoint of legal search engines. However, the legal system (in a broad sense) can also be viewed from other standpoints, e.g., a software engineer’s or a legal philosopher’s. Thus, different perspectives (a synonym for the term “view”) emerge.

Both the legal system and the legal documentation system are systems. They can be described from the outside and the inside. A system can be described from the

outside as a black box: inputs, outputs and their relation. A system is described from the inside perspective by its elements and the relationships between them.

We will compare the notion of view in Lu and Conrad’s four views and Schweighofer’s eight views with the notion of view in software engineering. The term “view” denotes a representation of the law in the papers by Lu and Conrad, as well as Schweighofer. Each viewer has his own perspective and projects the legal system onto the landscape of legal data science differently.

4.1. Views of an Enterprise System

Further, we consider an enterprise system in the role of a viewed object. Six views – the planner’s, the owner’s, the designer’s, the builder’s, the integrator’s and the user’s – are concerned in the Zachman framework (Sowa and Zachman 1992), which supposes that it is possible to manage an enterprise system using a multiperspective approach. Zachman’s idea to decompose the system into a number of perspectives and focus areas serves as a theoretical basis for the *vision-driven approach*, proposed by Čaplinskas (2009). Zachman decomposes each perspective into six focus areas to be answered: What (data)? How (function)? Where (network)? Who (people)? When (time)? Why (motive)? Zachman’s matrix of five levels and six columns shows thirty different perspectives on the knowledge representation (Sowa 2000, pp. 188–189; Sowa and Sachmann 1992). Čaplinskas calls it the *H3W decomposition*. The concept of views is driven by the separation of the concerns principle.⁵

³ “Constructivist: somebody who also believes that ‘reality’ exists independently of any observer, but who is aware of the fact that we only have access to our own (mental) ‘conceptions’; for the constructivist, the relationship between reality and conception is principally subjective, and may be subject to negotiation between observers; any agreement – which we call ‘inter-subjective reality’ – may have to be adapted from time to time” (Falkenberg et al. 1998, p. 26).

⁴ “When a group [of people] agrees on the meaning of a particular representation, we will call its interpretation a *shared conception*.” (Falkenberg et al. 1998, p. 32).

⁵ “The “separation of concerns” principle is realized by the concept of views. [...] The separation of

Five perspectives (views, levels) of the Čaplinskas' vision-driven methodological framework are: 1) Business level requirements (the view of a business analyst); 2) User level requirements (the view of stakeholders); 3) IS (information system) requirements (the view of an IS analyst); 4) The requirements of IS subsystems (the view of an IS engineer); 5) Software requirements (the view of a software analyst). More perspectives can also be concerned.

4.2. Four Views on Legal Documentation by Qiang Lu and Jack Conrad

Lu and Conrad (2012, 2013) view the system of legal documents from the standpoint of legal search engines. Search engines, however, are not legal entities, and, therefore, are not stakeholders. Stakeholders are comprised of judges, document authors, search engine users (e.g., attorneys) etc.

The document view comprises the documents of traditional legal searches, such as cases, statutes, regulations, law reviews and other forms of primary and secondary legal publications. The basis is the triad of norms, court decisions and legal literature; however, this can be extended by the now huge body of "soft law."

The annotation view comprises "attorney-editor generated synopses, points of law (a.k.a. headnotes), and attorney-classifier assigned topical classifications that rely on a legal taxonomy such as West's Key Number System."⁶ The annotation

concerns principle refers to the description of different characteristics of a software system that may or may not relate to the later execution of those systems" (Goedicke 1990, p. 5).

⁶ West's Key Number System: <http://info.legal-solutions.thomsonreuters.com/pdf/wln2/L-374484.pdf>. This is a classification system for American law.

view is based on metadata, which can be formidable, e.g., the EUR-Lex⁷ metadata system.

The citation network view comprises out-bound (cited) sources and in-bound (citing) sources with respect to the document in question. The citations are very different: basis of the act, acts cited in the document, citations in the operative part of the judgment, document amending other documents, document is amended by other acts etc.

The user view considers "aggregated user behavior," for example, how often a document was opened, document popularity through citatory services, the jurisdiction in which a particular attorney-user practices, and the kinds of sources that a user has historically preferred. In contrast to data (documents) and metadata (citations, annotations), "the aggregated user behavior data represented in the user view is produced by the professional researchers who interact with the system."

5. Views on Legal Documentation in Erich Schweighofer's Approach

Schweighofer considers Lu and Conrad's "views theory" (2012, 2013) and extends it with four more views (representations of the law): the logical view, the ontological view, the visualization view, and the argumentation view, which are described further. It should be noted that in the knowledge representation of law, it is not just about the documentation itself; each view represents further insights on the law itself (Schweighofer 2015, p. 16). Further we follow Schweighofer (2015) and Čyras, Lachmayer and Schweighofer (2016).

⁷ Access to European Union law, <http://eur-lex.europa.eu/>.

5.1. The Logical View

The logical view is based on predicate logic. An example is implementing a big number of legal rules, e.g., the rOWLER, a rule engine by Scharf (2016), which models legal norms with JAVA and OWL 2. Business rules management systems, such as JBoss Enterprise BRMS, is also a kind of a product. The logical view is restricted to “standard cases” (i.e., normal cases) leaving hard cases to the argumentation view.

The works by Monica Palmirani on modelling legal rules with LegalRuleML language are assigned to this view. LegalRuleML functionalities comprise modelling different types of rules, representing normative effects, defeasibility, correspondence between collections of rules in the formal model and natural language texts of legislation, alternative interpretations etc. (Athan et al. 2015). Palmirani also contributes to making the semantic Web the legal domain’s next step (Casanovas et al. 2016). Since 2005, she contributed to the Akoma Ntoso project, which was devoted to access African parliamentary proceedings and currently followed by LegalRuleML (Palmirani 2012). Her contribution is related with the semantic Web and the law topic and the text corpus view as well. These works produced an ontology for managing the legislative text’s evolution and its linguistic variants over time.

5.2. The Ontological View

The ontological view considers legal ontologies, shared vocabularies, advanced thesauri, concepts and relations. A starting point of any legal ontology is the terminology of the law. Since the 19th century, substantial preparatory work has been done in the concept jurisprudence. Legal terms

form a modally indifferent substrate (Kelsen 1991, pp. 60–61). In reusing these works, the respective elements of the concepts have to be transposed into a computer-readable structure, e.g., a header, a definition, relations, a presubsumption (the relation between the normative concept of law and a factual element). In the 1990s, ontologies, as conceptualizations of a domain, have been recognized as a way to acknowledge representation in the Semantic Web (cf. Guarino et al. 2009). The main components of ontologies are terms that are connected with links, such as upper/lower term, synonymy, antonymy etc. For example, the formalization of the norm graph concept is the starting phase in the approach of Oberle et al. (2012) to engineering compliant software.

5.3. The Legal Visualization View

The legal visualization view concerns the use of graphics, images and videos (cf. Brunschwig 2014). The structural legal visualization (SLV) approach by Lachmayer concerns visualizing legal meanings (cf. Lachmayer 2002; Čyras et al. 2015).⁸ These methods are human-oriented. The reason is that legal visualization is primarily a means of information visualization and serves humans. Therefore, the challenges are found in computer-readable visualizations (i.e., computer-oriented) as well as computer-generated visualizations (human-oriented). Graphical notations should also support the formalization of the law similarly as UML supports software development. Figures in this paper can also be assigned to the legal visualization view.

⁸ See also <http://www.legalvisualization.com> and <http://jusletter-it.weblaw.ch/visualisierung.html>.

5.4. *The Legal Argumentation View*

In the recent years, the field of AI and Law have strongly concentrated on the formalization of arguments. This case-based reasoning approach started in the 1980s. For current examples, see the ASPIC+ approach (Modgil and Prakken 2014). Taking into account the dialectical nature of the legal process – thesis (plaintiff), antithesis (respondent), synthesis (judge) – a representation of possible arguments is important.

5.5. *The Four Methods and Four Syntheses*

We briefly describe the legal methods and the methods of synthesis.

Method 1 – Searching, reading, interpreting, and understanding. The basic methodology is to locate, read, interpret and understand the “legal stuff,” taking into account the legal interpretation and reasoning methods in a dynamic world of concepts. The most significant ad-on of legal informatics is the revolution in legal search by the use of search engines. “Legal Googling” now belongs to the recognized methods.

Method 2 – Legal documentation and search. Due to the abundance of the material, legal documentation has become an independent method. However, this task is no longer done primarily by the users but by the services of legal information providers.

Method 3 – Conceptual and logical analysis. Here, the fundamental statement by John Sowa (2000) applies again: the terminology has to be developed and be brought into a convenient logical structure.

Method 4 – Factual elements and their links to law. In the practice of conflict resolution, it is often argued about

the existence of elements of the situation. Therefore, it is helpful to make use of existing world ontologies. The automated generation of factual elements from pictures, videos, websites, intelligent forms and the like is important. Successful practice can be found in tax law and e-Justice intelligent forms.

Synthesis 1 – Commentary/handbook or manual. Presently, such handbooks are written traditionally. Due to the dynamics of the legal system, this task is getting difficult. Therefore, authors favor a more documentary approach with extensive notes.

Synthesis 2 – Dynamic Electronic Legal Commentary (DynELC). The idea is simple – a change from the traditional to an electronic commentary. The eight views and four methods are presented in a structured format, and the basis for further analysis by legal experts is provided. The methods to be used: document categorization, multilingual thesaurus, citations, temporal relations, ranking, text summary and multilingualism. The DynELC consists of a structured representation of the metadata and the text corpus. An advantage is in taking into account the dynamics of the law.

Synthesis 3 – Citizens information. Citizen-focused description of the legal system is provided. The focus is on authority structure and the citizen’s participation.

Synthesis 4 – Case-based synthesis. Contrary to the representation of a “legal system for all,” a specific case is a standpoint. Relevant arguments and counterarguments are presented by taking into account the claimant, the defendant or the judge.

To summarize this section, the eight views/four methods/four syntheses model

is abstracted from decades of experience in the legal domain. This model is validated by numerous applications.

Conclusions

The subject matter of this paper lies in legal informatics, a discipline that builds a bridge between law and computing. We explain their interconnectedness abstractly, as a whole. We show that different methods of analysis and synthesis are used in the legal domain. Various stakeholders observe different meanings that require representations in separate subsystems. Therefore, multiple representations of a legal act make sense. The principle of content separation applies.

Although the research issues are presented on an abstract level, they can be taken into account in a methodology for engineer-

ing. For instance, the layer of legal terminology is assigned to the ontological view and can be implemented in a separate subsystem of legal documentation. Thus, a separate layer of infrastructural services emerges. The periphery of the law can emerge in the core of legal document systems.

Software engineers are the keypersons in the process of designing legal machines. To program institutional decision making, these engineers should properly interpret software requirements that tackle the law.

The semiotic triangle by Ogden and Richards (1923, p. 11) has to be extended to model sender–receiver communication. The reason for that is that the semiotic triangle deals with one person, a human agent. A semiotic square is a proper model.⁹ The FRISCO semiotic tetrahedron is a visualization of a more elaborate framework.

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⁹ https://en.wikipedia.org/wiki/Triangle_of_reference.

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SKIRTINGAS TEISINIŲ PRASMIŲ VAIZDAVIMAS INFORMACINĖSE SISTEMOSE, PRIKLAUSOMAS NUO SKIRTINGŲ POŽIŪRIŲ Į TEISĘ

Vytautas Čyras

S a n t r a u k a

Tyrimo objektas yra sąryšis tarp teisinės sistemos ir teisinės dokumentacijos sistemos. Pristatomas teisinių prasmų operacionalizavimo žvalgomasis tyrimas. Esminis klausimas, kaip pavaizduoti teisės akto prasmę. Remiantis informacinių sistemų konceptualizavimo metodika FRISCO, teisinė prasmė yra siejama su jos pavaizdavimu. Mes aiškiname skirtingų prasmų

atsiradimo ir jų pavaizdavimo informacinėse sistemose priežastis. Skirtingų kategorijų suinteresuotieji dalyviai interpretuoja teisės aktą skirtingomis prasmėmis. Pristatomas Ericho Schweighoferio teisės informatikos modelis „8 perspektyvos / 4 metodai / 4 produktai“. Kiekvieną perspektyvą atitinka atskiras pavaizdavimas.

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