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Chapter 3

**COMMUNITIES FOR
LEGAL KNOWLEDGE DISSEMINATION**

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ABSTRACT

Knowledge and understanding of the law by the citizens of a state is crucial for the legitimacy of governance. There are many examples of legal knowledge deficits, e.g., the lack of legal knowledge of the European Union in its citizens. In order to provide them with understandable and reliable information about the legal framework underlying the European Union, it is necessary to determine how this knowledge deficit can be remedied effectively. Large on-line collaborative environments offer unique opportunities to jointly build a body of knowledge concerning a specific topic. However, these environments feature pitfalls that have to be avoided in legal knowledge dissemination. A reputation system can guard the environment against ‘vandalism’ (destroying others’ contributions) and unreliable or false contributions, by, for instance, letting participants assess each other’s contributions. This article will investigate how a reputation system can improve the quality of collaboration in legal knowledge dissemination. It does so by using ‘applied legal epistemology’ – a framework to assess knowledge relevant to legal domains by practical translations of epistemic criteria – to build a theoretically sound reputation system. This reputation system, in its turn, is meant to optimize the implementation of a theory of legal knowledge dissemination.

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1. INTRODUCTION

Legal knowledge dissemination is a complex task. It requires not only profound knowledge of the underlying legal system, but also a very clear picture of how to communicate such knowledge. Therefore, it presupposes interdisciplinary collaboration. Such collaboration can take place through the internet. One of the advantages of using the internet is the possibility of initiating larger-scale collaboration, but such collaboration requires proper guidance in order to be effective. Such guidance can be provided by a reputation system, allowing assessment of each other's contributions.

Wikipedia, the internet encyclopaedia, is probably the most well-known example of user-generated content, serving information requests of millions of people, and built entirely by essentially the same group that uses it. Wikipedia has not been without criticisms, focusing on vandalism (deleting or 'damaging' proper information pages) and unreliability (e.g. because of contributors without recognized knowledge in a certain area). Attempts to improve quality by 'closing' certain contributions for editing or editorial supervision have up to now not yielded a new platform that is as successful (in terms of sheer size) as the original Wikipedia.

Still, Wikipedia's successes and failures are of major importance to any community-built information database, and thus, also to legal knowledge dissemination. Making use of the achievements of web-based collaboration technologies can help answer the question how the knowledge deficit can be (partially) eliminated. The article uses legal knowledge dissemination as an example case of how an interdisciplinary community could regulate itself by introducing and changing rules of co-operation and assessment.

1.1. Knowledge and the Legitimacy of Law

To be a citizen is to know one's role, rights and duties in a society. The much-used saying that every citizen 'ought to know the law' is a fiction (Voermans 2004) – useful, for example, for the attribution of responsibility – but its fictitiousness also presents a huge risk for the legitimacy of governance. The body of legal rules, case law and literature has grown to such substantial proportions that any person without a legal education will get lost in the multitude and sheer volume of formal sources of law (legislation, case law, treaties and customary law). This cannot be changed by simply making these sources accessible through the internet, because mere textual information does not suffice for legal knowledge dissemination.

The legal system is the backbone of modern society. It establishes the conditions under which people can do business, how they should behave, and what rights they have. If law is instrumental to doing one's duties as a citizen, at least one should have the possibility of mastering the relevant knowledge. An example of a deficit in relevant legal knowledge was established in the research project ANITA (an acronym for 'administrative normative information transaction agents'). As a part of this project, empirical research was done into police officers' knowledge about the regulation of the distribution and exchange of police data. It appeared that there are often shortcomings in such knowledge (Koelewijn and Kielman, 2006).

Additionally, current accessibility of sources of law does not suffice to serve citizens and non-legal professionals. In the Netherlands, sources of law are indeed made available on-line, but they are not linked in a meaningful way. As for the European Union, there are extensive information services, which are indeed linked to each other. But they still only serve those who know their way around these services, and who have sufficient background to understand the nature of the European legal order. Additionally, there are relations between European legislation and national legislation. These connections are not explained as a part of existing European information portals (such as EUR-lex) in a meaningful manner to publics without a legal education.

1.2. Legal Knowledge Dissemination

Dissemination of legal knowledge should take into account specific abilities and interests of the publics involved. The normative nature of the law introduces new challenges in developing such a view: do individual and group attitudes towards certain norms influence the possibility of legal knowledge dissemination? The same goes for the complexity of the legal system: how can someone understand at least the relevant consequences for their situation of a specific part of the law without mastering the outlines of the legal system as a whole, and the content of and interaction between legal sources?

Many modern legal systems, including the ‘Acquis’ underlying the European Union, are very much like ‘virtual cathedrals’; enormous construction of legislative instruments. Just making accessible all the instruments and procedures by themselves will not provide citizens with sufficient insight. In order to attain such insight, well-founded methods of disseminating legal knowledge to the public are needed.

The hypothesis underlying this article is that there has to be a translation of legal information both in terms of the literal content of legal documents – that are often written in the kind of prose that is not readable for the non-legally educated – and the specific goals with which publics utilize that information. Moreover, considering the complex structure of legal instruments and the multitude of documents applicable to even the simplest of situations, there has to be mapping of multiple legal sources to, preferably, a single piece of information or advice. In order to attain this, the necessary collaboration of legal and communication professionals on the one hand, and information users (citizens, consumers etc.) on the other hand, has to be guided properly. This is where on-line collaboration can be managed by instruments derived from ‘applied legal epistemology’.

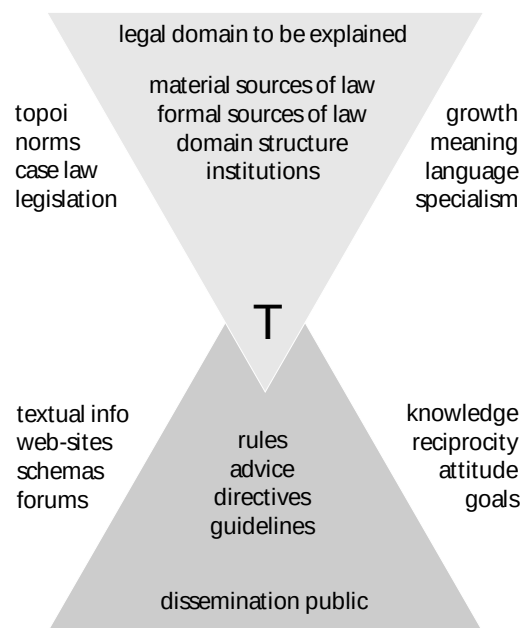
2. A TRANSLATION METHOD FOR LEGAL KNOWLEDGE DISSEMINATION

A model for translating sources of law into understandable information requires detailed knowledge about both the constituents of the legal domain under scrutiny and the background and attitudes of the dissemination public. Although some parts of the model presented can probably be generalized to other legal systems, the entire analysis in this article is restricted to the Dutch legal system. Especially the interpretation of sources of law depends on the legal

system under scrutiny. Any translation of formal sources of law into more understandable texts will yield a risk of explanation flaws and wrong interpretations. As only formal sources of law constitute *valid* law, making explicit references to the relevant parts of the original legal documents is probably the best strategy to solve this lack of reliability of any translated legal information. In this section, we first discuss the translation model (subsection 2.1). Subsequently, we elaborate on the separate steps that have to be taken in order to produce an understandable text for a specific public (subsection 2.2). An example of an actual ‘translation’ is also given (subsection 2.3).

2.1. Outline of the Translation Model

The graphical representation of the legal knowledge dissemination model presented in this article resembles an hourglass. The point where the two triangles meet is where the translation (T) should take place. In the figure, several examples of elements and factors playing a role in the translation are given. They are not meant as limitative lists.



The top triangle shows elements that constitute (valid) law in a legal domain: material sources of law (unofficial sources of law, such as political opinions, socio-economic situation etc.), formal sources of law (these are the official sources of valid law: legislation, case law, treaties and customary law), the structure of a domain (e.g. priority rules for the application of legislation and case law, references between sources, exception structures etc.), and the institutions playing a role therein (promulgating institutions, judicial institutions etc.). The bottom triangle shows examples of knowledge dissemination modalities: rules, advice, directives and guidelines. These modalities concern the way in which the dissemination

activity is presented: e.g. informal or binding. The scope of the communication can vary from personal advice to mass communication, and anything in between.

Returning to the top triangle, on its left, there are some concrete examples of sources of law: *topoi* (subjects such as ‘reasonableness’, that play an important role as reference points in the interpretation of law), norms (rules with a normative nature), case law, and legislation. On the right of the top triangle, there are examples of characteristics of legal domains that complicate legal knowledge dissemination. Legal systems are artificial, which has consequences for the degree to which legal documents can be understood. Growth, meaning, language and specialism play a role in this. *dingen hieronder korter toegelicht dan boven*

Growth. Despite the call for a decrease of administrative burdens, legal systems have a natural tendency to expand. New legislation is issued, whereas existing rules remain in force. The body of case law expands. The more rules the system contains, the less transparent it will probably become.

Meaning. Many legal terms have a constructed meaning, sometimes having hardly any relation with the ‘common sense’ meaning of the same term. Legal documents should always be read with the specific context-based (artificial) meaning of such terms in mind; cf. Mommers and Voermans (2005).

Language. Legal language use includes the use of complex grammatical structures and archaic phrases. These are common as a form of legal jargon, not taking account the readability for non-lawyers.

Specialism. ‘The law’ has encountered such a degree of specialization that only specialized lawyers can say something sensible about a certain area of law. For each of these areas, specific background knowledge is needed.

On the left of the bottom triangle, there are some examples of the forms that dissemination can take: textual information, web-sites, schemas and forums. On the right of the bottom triangle, there are factors that should play a role in the translation of sources of law for a specific dissemination public: background knowledge, reciprocity, attitudes and goals. I elaborate a bit further on these four factors.

Knowledge. Background knowledge of the dissemination group can occur both in terms of being well-educated in general or having prior legal knowledge. It plays an important role in how to approach the target persons, e.g. in determining what additional knowledge is needed and how the dissemination activity can relate to knowledge already present.

Reciprocity. Rules that originate only from structuring goals are often hard to understand for individual citizens. Reciprocity refers to the phenomenon that people are willing to do things for a different person or institution, in an abstract form of ‘compensation’ (*quid pro quo*). If the goal of a rule is not clear because of a lack of ‘built-in’ reciprocity, the tendency to understand, let alone to follow such a rule will decrease. For an extensive account of reciprocity, cf. Pessers (1999).

Attitude. The attitudes of the dissemination public determine, e.g., the degree to which a public puts an interest in an area of law, or in a certain dissemination activity. Other examples of attitudes are curiosity and ignorance.

Goals. Goals of a dissemination public are the specific aims the public tries to attain with respect to a legal area. Goals can range from acquiring knowledge to knowing whether a certain activity is legal or closing a contract with a different party. Other examples of goals are active compliance, avoiding legal problems, satisfying curiosity etc.

2.2. Translation Steps

Information implicitly present in the legal domain to be explained should be made explicit before the actual translation can take place. At the same time, making all implicit information explicit would be very time and resource consuming, if not impossible. As a consequence, legal domain specialists need to be involved in the translation process for making information explicit, and communications specialists need to be involved in order to impose restrictions on that activity. The translation process is thus assumed to consist of different phases: the restriction determination phase, the expansion phase, the strategy determination phase, and the translation phase.

The restriction determination phase takes into account the four factors relevant to legal knowledge dissemination. This phase involves determining the background knowledge of the dissemination public regarding the particular subject of legal knowledge dissemination, identifying communication goals for the particular instance of legal knowledge dissemination, identifying goals of the dissemination public regarding the particular subject of legal knowledge dissemination, and identifying attitudes of the dissemination public towards the particular subject of legal knowledge dissemination.

The expansion phase concerns making explicit 'hidden' information, such as the priority relations between different sources of law, exceptions to rules, and rules that can be derived from, for instance, authoritative case law. Additionally, in the expansion phase terms should be identified that have a meaning that differs from their use in everyday language. These deviant meanings should be made explicit.

The strategy determination phase involves both determining the modality of legal knowledge dissemination and the type of communication used for legal knowledge dissemination. Modalities determine the 'tone of voice' of the communication: whether the communication has the form of advice, behavioural rules, guidelines, obligations or prohibitions. The type of communication used for legal knowledge dissemination towards the dissemination public can, e.g., be texts or schemas, in the form of brochures or a web-site, or in the form of personal advice.

The translation phase encompasses the selection of relevant information from the expanded body of legal information determined in the expansion phase, by checking what information is needed considering the outcomes of the restriction determination phase. With the approach chosen in the strategy determination phase in mind, the selected legal information has to be translated into understandable information. The understandability has now, to a certain degree, been guaranteed by taking into account specific characteristics of the dissemination public.

[A] Restriction determination phase:

- 1) identifying communication goals for the particular instance of legal knowledge dissemination;
- 2) identifying goals of the dissemination public regarding the particular subject of legal knowledge dissemination;
- 3) identifying attitudes of the dissemination public towards the particular subject of legal knowledge dissemination;
- 4) determining the background knowledge of the dissemination public regarding the particular subject of legal knowledge dissemination.

[B] Expansion phase:

- 5) for a particular domain, making implicit information explicit, such as information regarding, e.g.:
 - a. priority of different sources of law;
 - b. exceptions to rules;
 - c. generalized rules from relevant case law;
- 6) identifying legal concepts – terms whose meanings differ from everyday meaning – and making these meaning differences explicit.

[C] Strategy determination phase:

- 7) determining the modality of legal knowledge dissemination (the ‘tone of voice’: advice, behavioural rules, guidelines);
- 8) determining the type of communication used for legal knowledge dissemination towards the dissemination public (e.g. texts, schemas, in brochures or on a web-site).

[D] Translation phase:

- 9) selection of relevant rules from the expanded information from phase [B] in accordance with the restrictions from phase [A];
- 10) translation of the resulting rule set in accordance with phase [C].

2.3. A translation Example

An extended example of the application of this translation model can be found in Mommers, Koelewijn and Kielman 2007. It concerns the regulation of the distribution of police data from the severe crime databases (hereinafter: SCD), and is repeated below. It concerns a specific public, not the general public. Therefore, it represents an example of the necessity of taking a target public into account in legal knowledge dissemination. The example itself does not involve the use of a collaborative workspace – it only represents the application of the dissemination method. The basic entity to be translated is a part of an act concerning the possibilities of exchanging police data. Article 13a paragraphs 2 and 3 from the Police Data Act (hereinafter: PDA) state a specific rule for the distribution of data from the SCD and an exception to that rule. Please note that the mere translation from Dutch into English already presents considerable problems regarding meaning, which will be ignored in this article.

Art. 13a Police Data Act (PDA)

Paragraph 2

“Data from a severe crime database about persons as meant in the first paragraph, subparagraph c, will be only distributed in accordance with art. 13b, second paragraph up to and including the fourth paragraph. No data will be distributed under art. 18, third paragraph concerning persons indicated in the first paragraph, subparagraphs a and b.”

Paragraph 3

“If it is necessary for the proper execution of the police task, the distribution in accordance with articles 14 and 15 first paragraph under b, c, and d, from a severe crime database can be refused, or it can be carried out under restricting conditions with regard to further use.”

[A] Restriction determination phase

1) Communication goals

In the Netherlands, on several occasions it appeared that police officers find great difficulty in the application of the PDA, which resulted in errors in the exchange of police data. The cause for this is found mainly in the unfamiliarity with and the complexity of the relevant legal provisions. The communication goal is to clarify the provisions cited, so that police officers can determine whether to distribute police data in actual cases. The communication in this example ought to be initiated by the public prosecution service. In the Netherlands, this is the institution that is responsible for the legality of the investigation and prosecution of criminal offences. In that capacity, the office has authority over the police, and it also has to supervise the distribution of data from police databases. The goal of the communication for the public prosecution service is the establishment of distribution of police data in accordance with the PDA.

2) Goals of the dissemination public

In addition to the communication goal, we also have to establish the goals of the public addressed. The determination of these goals helps to define the domain, and it helps to determine the proper communication strategy. In our example, we restrict ourselves to police officers responsible for the management of SCD's. The data in such registers mainly originate from informants. Such informants secretly provide information to the police about various criminal activities. Careless use of such information can have major consequences for the informants. Hence, the main goal of police officers that collect and register such information is to protect their sources (Koelewijn and Kielman 2006).

3) Identifying attitudes

The goal of identifying attitudes is closely related to the idea police officers have of the relevant legal sources. This attitude is the third lead in this model for imposing restrictions on the knowledge to be acquired. The attitude of the relevant police officers is to interpret the PDA in conformance with their main goal (the protection of their sources). In practice, this often leads to an incorrect interpretation of art. 13a par. 3 PDA. Police officers interpret this rule in such a manner, that the distribution of data from the SCD can be refused in all relevant cases. This interpretation will prove to be incorrect later on in the discussion of the model.

4) Background knowledge

Finally, in the last step of the restriction determination phase, we have to determine which knowledge with respect to the legal provisions is already present in the public concerned. As indicated before, research has shown that Dutch police officers have only limited knowledge of the provisions in the PDA [28]. Additionally, the two provisions selected make many references to other provisions in the PDA. Such references make the act hard to understand, and, therefore, they

have to be explained. Moreover, we saw that the two provisions also refer to ‘categories of registered persons’ and the ‘police task’. These concepts hardly need any clarification for police officers. They generally have sufficient knowledge of the categories of persons on which they collect data, and of their specific police tasks.

[B] Expansion phase

5) Making implicit information explicit

Hierarchy. After the definition of the domain and the identification of information needs in the restriction phase, in the expansion phase, it is checked which information implicit to the legal provisions has to be made explicit. In case of legal provisions, implicit information often follows from the hierarchy between various regulations. Police officers need to realise that the distribution of police data from the SCD is governed by several regulations. The two provisions in the current example have a high abstraction level, which makes it hard for police officers to apply them in actual cases. In the references to other regulations, these norms contain a large quantity of implicit information, for instance in its references to lower regulations such as the Police Files Decree (hereafter: PFD). This decree provides much more detailed rules about distribution. These rules can be used in the translation. If we evaluate the distribution provisions in the decree, we find a list in art. 14 which provides a limitative enumeration of persons and institutions that are authorized to receive police data. Earlier research, however, showed that police officers do not know this particular decree, and hence they do not know the list in art. 14. In the translation, it is thus necessary to make the list explicit.

Exceptions. In addition, implicit information can be hidden in exception to provisions. In par. 2 of art. 13a PDA, there is a legal opportunity for refusing the distribution of police data from SCD’s. In the formulation of this provision, there is an implicit exception. According to legal doctrine, the phrase ‘distribution in accordance with art. 15 under b, c and d’ has to read in such a manner that the possibility of refusing distribution is not valid for the cases in which art. 15 under a and e are valid [3]. In those cases, the ground for refusal cannot be invoked.

General rules following from case law. In our example, we have not found any relevant case law in which general rules are formulated with respect to the distribution of police data.

6) Legal concepts

Moreover, in the expansion phase, legal concepts have to be identified. Those are concepts that have a meaning different from their meaning in regular language use. We discuss two concepts that are used in the two distribution provisions: ‘distribution’ and ‘necessity’.

In art. 13a par. 2 PDA, the concept of distribution concerns an obligation to provide data. The police officer responsible for the management of the relevant SCD has, in principle, an obligation to respond to a lawful information request from, e.g., a different police officer. This obligation also means that the police officer providing the information only needs to check marginally if the requesting officer really needs the information [3]. By this, the legislator has tried to establish a free flow of information within parts of the police organisation.

The concept of ‘necessity’, used in art. 13a par. 3 PDA, refers to the demands of proportionality and subsidiarity. Proportionality means that the refusal has to be in a reasonable relation with the goal intended by that refusal. The protection of informants can be such a goal. Subsidiarity means that there ought not be a less drastic measure – if there is one, that measure should be taken. In the context of data distribution, this means that, for instance, the distributing officer should check whether there a restrictive condition could be laid upon the provision of data, such that the distribution need not be refused.

Police officers will generally not be familiar with the underlying meaning of this concept of necessity, and therefore it needs to be clarified in the translation. Clearly, the legislator wished to express that refusing to distribute data is only allowed in exceptional cases, and that each new information request cannot be refused automatically. Instead, in each of those cases, the relevant interests have to be weighed against each other by the police officer.

[C] Strategy determination phase

7) Dissemination modality

In the third phase of the model, the communication strategy is determined. Determining such a strategy is the prerogative of communication specialists. They first have to determine the ‘tone of voice’ for the particular instance of communication. Directly relevant to determining the tone of voice are the communication goals identified for the ‘sender’ and the ‘receiver’ (the public) of the message. In our example, we saw that there is a hierarchical relation between the sender and the receiver, in which the former clearly has authority over the latter. The goals identified are also partly conflicting. The goal of the public prosecution office (the sender) is mainly aimed at compliance with legal norms, whereas the police officers in question (the receivers) mainly intend to protect their sources. Considering this conflict of interests, in this particular case, the public prosecution office probably should use an imperative tone of voice. This tone of voice could be established in the form of obligatory provisions with respect to the distribution of police data in case there is no ground for refusal. In case there is room for weighing interests, the public prosecution office can employ an ‘advisory’ tone of voice, for instance by formulating a number of assessment criteria.

8) Communication type

Furthermore, in determining the communication strategy, we have to consider the form in which the communication will take place. In the current example, the most obvious thing to do is to relate to communication methods that are already used in the domain. By doing this, there is a good chance that the communication goals will be attained. Two obvious means for communication are adding the instructions to an existing handbook for the police officials concerned, and to publish the instructions on the website of the public prosecution office. Such a handbook already exists, and the public prosecutions office could choose to add an extra chapter with clear instructions on how to deal with information requests for an SCD within the legal framework imposed by the PDA, supplemented by various practical examples. Using the public prosecution office’s website would imply an addition to the ‘directives for investigation’ that are already published on that website. Using the

website would also mean that the police organisation would become more transparent and verifiable, as the public can directly access the instructions.

[D] Translation phase

9) Relevant rules

Finally, in the fourth phase, the conversion of the legal provisions takes place, including all relevant background information, into clear instructions for police officers. First of all, we need to establish what restrictions are imposed in the 'restriction phase', and what the information needs are. In our example, although police officers had some background knowledge about the subject, this background knowledge did not suffice to make proper decisions about actual information requests. The translation is aimed at clarifying knowledge implicit in the hierarchy of relevant regulations and legal concepts. In practice, this means that the list of authorized persons for the receipt of data from the PFD has to be provided, and that the information should clarify that art. 13a par. 2 of the PDA implies an obligation to distribute, that is only affected by the exception in par. 3. Furthermore, the exceptional nature of such a refusal should be stressed, in addition to the necessity of weighing arguments for and against compliance with each information request.

10) Translation

The output of the model is a possible translation of the two provisions and relevant background knowledge. It could take the following form:

If, as a manager of a SCD, you receive a request for information about a certain person registered in your SCD, you have an obligation to provide that information in three cases:

- 1) if the request is made by a public prosecutor;
- 2) if the request is made by the BIBOB bureau (an integrity screening organisation);
- 3) if the request is made by the AIVD or the RID (both are secret services).

Please note that it is not permitted to refuse such requests, or to impose additional constraints on the provision of the information.

If, as a manager of an SCD, you receive a request for information from one of the following persons:

- 1) a detective or a different police officer;
- 2) a civil servant working for the unusual transactions desk;
- 3) a member of the royal military police;
- 4) one of the other persons mentioned in art. 14 PFD;

you have the obligation to consider the information request and to provide the data requested. In exceptional cases, the provision can be refused. In the decision to refuse the provision of certain data, the following criteria are applicable:

- 1) *Risks for the informant.* To the degree that the use of the information constitutes a greater risk for the informant, you may be more careful with providing the requested information. In case the risk is life-threatening, the provision of data should probably be refused.
- 2) *Goal of the information request.* Before refusing to respond to an information request, you have to take note of the goal of the information request. The interest behind the information request has to be weighed against the interest of protecting the informant.

Example: The fact that a suspect has a firearm always has to be provided to the team preparing his apprehension. The safety of that team outweighs the interests of the informant.

- 3) *Opportunities for restrictions.* Before refusing to an information request, you have to determine whether additional constraints on the further use of the information supplied could still protect the informant to a sufficient degree.

Example: Information can be provided with the explicit restriction that it may only be used for analysis ends.

Finally, in case of doubt, you always need to consult the public prosecutor.

This concludes the example concerning the regulation of the distribution of police data from the severe crime databases. In the following section, we elaborate on the framework of ‘applied legal epistemology’. This framework uses the intrinsic value of the knowledge predicate in order to assess, e.g., statements of lawyers. In the current endeavour, regulating the collaboration between lawyers, citizens and communication experts requires taking into account different ‘types’ of knowledge, and differences in background knowledge. Furthermore, the normative nature of legal epistemology should be properly connected to the regulative nature of applying a reputation system to collaboration in legal knowledge dissemination.

3. APPLIED LEGAL EPISTEMOLOGY

‘Applied legal epistemology’ denominates the research into practical applications of knowledge criteria. In the current transition of legal domains into the information and communications technology era, keeping a close watch of the proper guidance of epistemic preconditions is of vital importance. New technologies may improve epistemic opportunities (e.g. by providing prompt information access), but they may also have negative impact. For instance, the occurrence of so-called ‘virtual straitjackets’. Everyone has had their own experiences with forms lacking proper categories and voice response systems leading you through endless series of selections. I call these ‘virtual straitjackets’, and they are becoming ever more ubiquitous. A virtual straitjacket is a situation characterized by the following:

- a) The situation consists of ‘forcing’ individuals into options that do not offer the choice they prefer.
- b) The situation is based on previously made choices with respect to classification schemes.
- c) The situation is ‘virtual’, in the sense that the option offered is not a physical one.

Although this sounds highly abstract, it can be made concrete very easily. For instance, handwritten notes will not be read if you put them on a computer-readable form, so that your comments about that form cannot be processed. And web forms may contain questions that do not allow you to provide a proper answer, by offering only a limited number of options and not providing an option ‘other, please specify’. Although they are not necessary for their occurrence, Information and communication technologies tend to trigger virtual straitjackets

because automating processes requires making explicit distinctions in order to avoid manual classification work. We are not conscious any more of many virtual straitjackets, simply because we are adjusted to particular classifications. But even the seemingly simple classification male/female may actually exclude people who do not have a clear gender.

Virtual straitjackets occur more and more often in the legal domain. This is, assumedly, a consequence of the call for efficiency of legal aid and processing capacity. Automation is still often the answer to this efficiency call. Additionally, the use of information and communication technologies in law increases because they are used in normal activities such as word processing and information access. The most obvious example of a virtual straitjacket in law I came across was noted by Dory Reiling, a judge of the Amsterdam court. She was 'corrected' by an employee who said: "Your Honor, you cannot impose that sanction, Compas [the administrative system for the Dutch public prosecutor – LM] cannot process it!" (Reiling 2006). This 'Umwertung aller Werte' is a fundamental threat to judicial independence and discretionary powers. Similarly, information systems that provide incorrect or incomplete information detrimental to the epistemic position of their users.

The proper use collaborative environments requires the prevention of such virtual straitjackets, as they may hinder the development of knowledge, and thereby damage the very essence of collaboration in legal knowledge dissemination. In this section, we first discuss the value of the concept of knowledge – what does it mean? Is it a descriptive or normative concept? Subsequently, we discuss three dimensions of knowledge: its acquisition, object and justification. In subsection 2.3, we explain how these dimensions of knowledge fit into an abstract framework aimed at modelling legal domains. In subsection 2.4, finally, we discuss the epistemic roles, that play an important role in the application of the model to on-line collaboration. In the next section, this model will be used to develop ways of regulating on-line collaboration for legal knowledge dissemination.

3.1. The Value of Knowledge

There are two basic grounds that support the assumption that the concept of knowledge as such is relevant. First, there is the utility of knowledge. Compared to mere belief, knowledge can be used as a reliable ground for decisions, behaviour and judgement. It may also serve as a means of gaining authority relative to those only having belief. In the legal domain, knowledge provides grounds for authoritative decisions. Rather than basing one's decision on relatively unreliable beliefs, the basis for one's inferences should be knowledge. Second, attaining knowledge is a goal that is worth aiming at as such, regardless of its utility. An argument with this content is put forward by Finnis (1980, p. 59-80). He claims that the pursuit of knowledge is a value, in the sense of a good: a goal that is worthwhile independent of any further utility in the achievement of survival, power, and popularity. The value of attaining knowledge is a principle of practical reasonableness, Finnis claims. It provides us with a direction in which we can lay out lines of argumentation. It can be used to generate new principles, and to direct the application of rules. In his discussion of the value of knowledge, he emphasises the importance of truth. Having knowledge presupposes truth, whereas beliefs can be true or false. Knowledge and truth are very close relatives, if we may regard the following quotation as representative of Finnis' opinion on the matter (1980, p. 61):

“In explaining, to oneself and others, what one is up to, one finds oneself able and ready to refer to finding out, knowledge, truth as sufficient explanations of the point of one’s activity, project, or commitment.”

Finnis regards the value of knowledge as a self-evident principle. He asserts that self-evidence of some principle has little or nothing to do with our feelings of certitude about that principle. Rather, he claims, the self-evidence of a principle shows itself in its employment as a criterion for the assessment of feelings. A principle such as the worthiness of knowledge can, on principle, not be proved. It can be adopted, though, on the assumption that its employment is fruitful, or rather, that, if it is not adopted, rational discourse becomes hard or impossible. In sum, knowledge is a better starting point for making inferences (the utility argument), and it is worthwhile in its own (the value argument).

Knowledge, I claim, may be regarded as the mark of a quality stamp. It is a mark of approval; it says that a belief or a skill conforms to a set of criteria, and that it deserves to be called ‘knowledge’ for that reason. The applicable set of criteria depends on the type of entity that we wish to qualify as knowledge, and the context in which we encounter that entity. For instance, if we wish to qualify a belief about the actual selling of fake spare parts for automobiles as knowledge, we may demand that this belief is true. However, if we wish to qualify a belief about the breach of copyright in a particular case as knowledge, we may demand that this belief is justified rather than true, as the legal qualification of a fact is often a matter of providing a suitable argument. Representing knowledge thus requires us to make explicit the criteria by which the represented entities deserve their qualification as knowledge. These criteria may apply to the acquisition, object and justification of the entities. Thus, they do not only concern the content (object) of knowledge, but also the sources of knowledge (acquisition), and the reasons there are to believe its content (justification). Together, the criteria provide a framework for assessing whether to assign the quality mark. What is more, they provide valuable additional information on represented knowledge.

The concept of knowledge takes an important place in representations of legal domains, because a large part of that domain consists of rules, norms, thoughts and skills the reflection of which, ideally, can be qualified as knowledge. As such, the value of knowledge is unchallenged. However, what knowledge in the legal domain amounts to, remains obscure on many occasions. The ‘ontology’ (a conceptual model of a domain) presented in this section is based on the necessity of expressing different views on the role of knowledge and the existence of entities in the legal domain. On a theoretical level, this enables us to avoid taking a stance in the legal-philosophical debate prior to building a model for an application.

In this sense, the model developed may be called a ‘meta-ontology’ of law – it allows for different views on what knowledge in the legal domain actually amounts to. On a practical level, the model facilitates a detailed description of the context of knowledge items – how they are acquired, what they refer to, and how they are justified. To attain this, the model distinguishes between ontological status layers and epistemic roles. The ontological status layers enable the expression of different views on the existence of entities in the legal domain, and the epistemic roles enable expressing different views on what knowledge amounts to. In the context of building communities for legal knowledge dissemination, epistemic roles are of vital importance, as there should be a clear framework for the knowledge to be disseminated. Ontological status layers – denoting the ‘types of existence’ distinguished in philosophy of law – will receive little attention. These layers, such as validity and recognition, do not

directly play an important role in the current subject of research. Both epistemic roles and ontological status layers apply to ‘entities’, such as statements and questions.

At the time of its origination, this framework itself did not cater for the need to distinguish between specialist knowledge and common knowledge. However, the current application of the framework, namely translating specialist legal knowledge into something suitable to *become* common knowledge, requires us to take into account the transition from the specialist nature of knowledge in the legal domain into the pursuit of disseminating it outside that particular domain. This inevitably has consequences for the outlines and application of the model.

3.2. Three Dimensions of Knowledge

To elaborate on the role that the concept of knowledge plays in the legal domain, I start from two relevant disciplines: ontology and epistemology. Ontology scrutinises the existence of (legal) entities, such as rules, norms, and legal institutions, and the dependencies between these entities. Epistemology regards the acquisition, object and justification of knowledge. Together, ontology and epistemology can provide an integrated view on the legal domain, thus facilitating the representation of knowledge. However, among those who practise legal epistemology and legal ontology, there is little consensus on what justifiable claims can be made within these disciplines. Moreover, prior to making such claims, one has to develop a general view on the law, and such attempts have been manifold (natural law theory, legal positivism *etc.*). A general view on the law inevitably comprises a view on the way in which the law can be known, and on the entities it consists of. Differences in the general views cause the lack of consensus on epistemological and ontological claims.

The transition from belief to knowledge plays a major role in explaining the three dimensions of knowledge. By using criteria based on these dimensions, it is assessed whether a belief qualifies as knowledge. Only if it complies with all applicable criteria, a belief may be called knowledge. Therefore, the three dimensions of knowledge are discussed relative to *beliefs*. The first dimension is acquisition: how is the belief acquired? A person can acquire a belief by different routes, some of which deserve more trust than others. The second dimension is its object: what is the belief’s object? A person’s belief has – supposedly – some kind of object; the belief is *about* something. The third dimension is justification: how is the belief justified? A person can be justified in believing something. He can, for instance, have good reasons for his belief. Both acquisition and object belong to the so-called *context of discovery*. The justification of a belief constitutes the *context of justification*. The three dimensions are discussed below.

Acquisition

A belief can be acquired from different sources. On a sunny Sunday morning, John acquires the belief that the sun is shining by looking out of the window. He learns from the Saturday newspaper that it will start raining before 2 pm. His daughter tells him that she watched the morning weather forecast on the weather channel, and that she learned it will not start to rain until the evening. Perception (looking out of the window) and testimony (reading the newspaper and listening to your daughter) are called belief sources (Audi 1998). A belief source is the process or phenomenon that a belief is based upon. A knowledge source is

similar to that, except that in this case a piece of knowledge arises from the process or phenomenon. Audi (1998) distinguishes five sources of belief and knowledge: perception, memory, consciousness, reason, and testimony.

Although legal knowledge may arise from the same sources as regular knowledge, the focus is somewhat different. I focus on specific sources of legal belief and knowledge, *i.e.*, sources that are classified because of their content rather than by the acquisition method employed. These are the so-called knowledge sources for the law. In order to explain what knowledge sources for the law are, I start to elaborate on two different types of sources of law: formal and material sources of law. Subsequently, I explain what knowledge sources for the law are, and finally, I clarify to what extent sources of law (formal and material sources of law) can be qualified as knowledge sources for the law.

There are two types of *sources of law*: formal sources of law and material sources of law. Formal sources of law are, according to Algra and Van Duyvendijk (1989, p. 19), the sources of positive law itself. These are statute law, treaties, and legal precedents (*ibid.*). Customary law is often also considered a formal source of law. Material sources of law are the origination sources of law, *i.e.*, those factors that contributed to the drafting and interpretation of positive law. Material sources of law themselves cannot be reduced to legal rules or legal norms. They form, however, the grounds for those rules and norms. For instance, as soon as a judge has made a decision in a case, and he has based his decision partly on the consequences his decision will have for the social structure (socio-economical developments constitute a material source of law), he establishes a verdict (a legal precedent is a formal source of law).

Algra and Van Duyvendijk (1989, p. 20) distinguish the following material sources of law: political powers, civil servants, pressure groups, religious beliefs, moral beliefs, socio-economical developments, geographical circumstances, and technological developments. The importance of this enumeration is that material sources of law are indeed the external factors relevant to the *origination* and *interpretation* of the law. Material sources of law, such as moral beliefs and technological developments, have an impact on both the content of law and on the way in which the content of law is understood.

Knowledge sources for the law are the sources through which we acquire knowledge about the law. Acquiring (explicit) knowledge about the law requires us to know two properties of the law: its *content* and its *validity*. Knowledge about the two properties is acquired in different manners for different legal-philosophical stances. In a legal-positivist stance, formal sources of law largely coincide with valid law. Thus, if one acquires knowledge of the formal sources of law, one will acquire knowledge of both the *content* and the *validity* of law. In a natural-law stance, however, this is not necessarily the case; the validity of law is also determined by principles that are not part of the system of positive law, and thus are not part of the formal sources of law. In such a stance, knowledge about the content of positive law is derived from the formal sources of law, but knowledge about the validity of positive law is partly derived from principles outside positive law.

In legal-positivist and natural-law stances, knowledge about the content and validity of the law may also be derived from *material* sources of law. Material sources of law are helpful in interpreting the content of formal sources of law. Thus, sources of law (both formal sources of law and material sources of law) can function as knowledge sources for the law. However, their precise role may differ, depending on the legal-philosophical view of the law taken.

Object

Beliefs are generally *about* something. They reflect some view on how things relate to each other in reality. For instance, beliefs are about the weather, a book, or a judgement. In that case, the weather, book, or judgement forms the *object* of the belief. Beliefs differ in how they relate to objects. They vary in their degree of abstractness (an abstract belief about an arbitrary conference paper *versus* a concrete belief about the copy of the paper you are currently holding). A belief is abstract when it generalises over individual objects; instead of referring to individual occurrences, it refers to object categories. A belief is concrete if it is connected with objects, *i.e.*, if it refers to individual objects.

The main difference between the object of legal knowledge and the object of regular knowledge, is that the object of legal knowledge largely consists of intangible institutions and entities, which brings about the danger of a confusion of the object of knowledge and the knowledge itself. I discern two categories within the object of knowledge about the legal domain. The first object category is *legally-relevant*, the second object category is *legal*. The objects within the first category are situations in the world that are relevant for the legal domain, *i.e.*, entities, facts, acts, and practices that have not (yet) got assigned a legal status. The objects within the second category are situations in the world that are part of the legal domain, *i.e.*, entities, facts, acts, and practices that have been assigned a legal status. A potential third category, namely non-legal, could well play a role in the current venture. A translation of legal knowledge could in certain circumstances involve circumstances, facts etcetera that are, while not being *legally* relevant, relevant to the communication venture. However, we will not further discuss this possibility.

For instance, the object category of knowledge about the fact that John hit a pedestrian with his car is not legal. However, the object category becomes legal whenever the fact has the assigned legal status of criminal negligence. The fact that an object of knowledge is legal need not mean that the knowledge itself is legal. Neither does the fact that that an object of knowledge is legally-relevant imply that the piece of knowledge itself is legally-relevant. That depends on the content of the piece of knowledge itself. For instance, knowledge about hitting a pedestrian with a car as criminal negligence may count as a piece of legal knowledge if it concerns the legal consequences of that fact.

The confusion of knowledge with the object of knowledge starts where the object of knowledge is more or less intangible: if it arises from reasoning or interpretation, or if it is an artifact resulting from social conventions. Whereas it is easy to distinguish the situation that John hits a pedestrian from the belief 'John hits a pedestrian', it is somewhat harder to distinguish an interpretation from a belief about that interpretation. The reason for this is that interpretations are not objects in the same way as we can regard, for instance, toys as objects: we cannot hold, feel, and look at interpretations from different angles (*i.e.*, not literally), whereas in the case of toys, we can. We construct interpretations ourselves, and by doing this we 'make' knowledge – *i.e.*, we do so according to some legal-philosophical viewpoints. In other viewpoints, the distinction will indeed not be made.

Justification

Justification amounts to those circumstances in which the content of some entity or behaviour is sufficiently defended. Such a defence can be given in an explicit way: in terms of reasons for the content of an entity, or a proof of the content of the entity. A defence can also be given in a rather implicit way, for instance by establishing a high chance that the

belief is true. Justification thus consists of all those factors that make us *believe* something. Justification is found in several forms. The typology I give in this subsection is partly based on Audi (1998, p. 2-3). I distinguish three main types of justification: justification as a state, justification as a process, and justification as a status.

The first main type of justification is justification as a state. It refers to a situation in which an entity is justified, or in which a person is justified in believing something. Within this main type, there are four subtypes. (1) Belief justification is attained if certain criteria are met with respect to a specific belief. The belief is, in other words, in the state of being justified. (2) Personal justification occurs if a person is actually justified in having a belief, and he knows that he is in this state of justification. (3) Propositional justification occurs if there are sufficient reasons for justifying the proposition. If certain criteria are met with respect to a proposition, this proposition is in the state of being justified. (4) Situational justification occurs if a person has sufficient reasons to justify a certain belief, but nevertheless does not hold that belief. For instance, John has consulted the marriage register and read Mary's name. However, he has not realised that this means that Mary is married. Thus, John would be justified in believing that Mary is married, but in fact, he does not believe that Mary is married.

The second main type of justification is justification as a process. A state of justification can, but need not be, the result of a successful process of justification. Such a process may consist of exchanging reasons, or applying certain rules, or any series of acts that aims at accomplishing a state of justification. For instance, the different steps in a penal trial among others aim at reaching a clear picture of the actual facts. The rules that govern this process let the different parties present and explain their stances, and by presenting the evidence and responding to each other, ideally relevant and true statements are made as a conclusion.

The third main type of justification is justification as the status of an entity. It refers to the justifying role an entity can play. For instance, a fact can be qualified as a reason, and then its justifying role is based on a status layer of the fact. In the example given above, the fact that Mary's name is in the marriage register can be qualified as a reason for believing that Mary is married. Because it has the status of a reason, it performs a justifying role with respect to the belief that Mary is married.

All three justification types are found in the legal domain. Some of the instances of the types are actually institutionalised in the law. An example of justification as a state is the legitimate character of evidence (which is attained by acquiring evidence in a lawful manner). An example of justification as a process is the application of parts of civil procedural law, which guide two parties in exchanging arguments. An example of justification as a status is the legitimising force a piece of evidence exerts towards a conclusion (*e.g.*, evidence for finding a suspect guilty). From these examples, we can derive the main characteristic of justification with respect to legal belief.

Basically, justification of legal belief is based on sources of law. In many cases, this means that it is rule-governed, *i.e.*, procedural rules determine in what cases justification as a state, process or status occurs. The legitimate character of evidence arises from the lawful application of legal rules regarding the gathering of evidence. The legitimate character of a civil trial partly arises from following the applicable rules of procedure. The legitimising force a piece of evidence exerts towards a conclusion may also arise from legal rules regarding the role of evidence. Of course, this is only valid insofar as the legal system concerned is rule-based, such as the Dutch one is to a certain extent.

Table 1. An overview of the knowledge-based ontology of the legal domain

type	legally-relevant	legal
<i>entities</i>	e.g. concepts	e.g. legal rules
<i>ontological status layers</i>	e.g. recognition	e.g. legal validity
<i>epistemic roles</i>	e.g. reasons	e.g. factual legal knowledge
<i>relations</i>	e.g. counting as	e.g. legal causation
<i>acts</i>	e.g. applying non-legal rules	e.g. making legal decisions
<i>facts</i>	e.g. recognised facts	e.g. conventional legal facts

3.3. Basic Categories of the Knowledge-based Model of the Legal Domain

An ontology specifies what elements and relations we can find in the legal domain. As a consequence of incorporating the concept of knowledge, the resulting ontology caters for the need to express relevant characteristics of knowledge about the legal domain. In Table 1, we give an overview of main types present in the knowledge-based model of the legal domain, complemented with an example of a subtype for each main type.

Some words on the model's main types ought to clarify the model. Entities are basic objects that are encountered in the legal domain. They may be assigned certain characteristics in the form of ontological status layers and epistemological roles. Ontological status layers are the existence characteristics of legally-relevant and legal entities, acts, and facts. Epistemic roles are claims regarding objects, signifying their function in acquiring or justifying knowledge. Relations express interdependencies among phenomena. A relation may state the consequences of some event, or impose new roles on existing objects. Acts indicate the operations of individuals and institutions in the legal domain. Facts involve objects, the characteristics of those objects, characteristics of characteristics, and relations between objects and between characteristics. They express the attributes of entities, individuals and institutions, or the relations between them. The core of the ontology is found in the ontological status layers and epistemic roles, as they represent the characteristics regarding the existence and knowledge status of entities.

3.4. Epistemic Roles

Ontological status layers and epistemic roles form the core of the model described in this article. As the ontology aims to accommodate different views on existence and knowledge in the legal domain, it has to provide for the means to represent these views. In this subsection, I discuss epistemic roles, as they play a major role in the practical application proposed in section 3. Epistemic roles are claims regarding objects. They have two functions. Either they signify the function an object has in granting the knowledge predicate to a different object, or they signify the knowledge predicate itself. The former function is fulfilled by the epistemic roles reason, defeater and conclusion, the latter by the roles factual knowledge and practical knowledge. If an object (e.g., a belief) has reason as its epistemic role, it supports the content

of a statement, i.e., the object functions as a means to make us believe the statement. Therefore, it helps to turn the statement into knowledge by contributing to its justification. Thus, the epistemic role of one item may help to establish a different epistemic role for another item. The following epistemic roles are distinguished:

Reasons – Reasons are statements, propositions or facts that are employed for the explanation or justification of some other statement, proposition or fact (*cf.* Hage 1997). Each reason has a content (its meaning relative to its subject and object), a subject (a person, a group of persons or an authority, or there is no subject at all), an object (a belief, an action, a decision, a classification, an interpretation, or another reason), and a specific relation between subject and content (believe, constitute), and between content and object (explanatory, guiding).

Defeaters – Defeaters are negative reasons, i.e., they attack some belief or reason in such a way that it is no longer correct. Defeaters that directly attack the conclusions of an argument are called ‘rebutting defeaters’. Defeaters that attack the relation between a reason and its conclusion are called ‘undercutting defeaters’. With an undercutting defeater, the assumption is challenged that some statement or fact is indeed a reason for a conclusion (Pollock 1999, p. 196). Just as reasons, defeaters can be classified according to the distinctions made above. A defeater has a content, a subject, an object, and there is a specific relation between subject and content, and between content and object. The specification of a defeater in terms of these characteristics is thus comparable to the specification of a reason.

Conclusions – Conclusions are inferences from existing statements, reasons and defeaters. These include not only the ‘classical’ logical inferences such as deductions, but also the more sophisticated non-logical inferences, related to e.g. Toulmin’s argumentation scheme. Any statement that gets the epistemic role of being a conclusion, can also acquire other epistemic roles. One conclusion can, for instance, be a reason for a different conclusion.

Factual knowledge – The epistemic role ‘factual knowledge’ is granted to an entity if that entity complies with certain so-called knowledge criteria. Suitable entities are beliefs, statements and propositions. Knowledge criteria regard the acquisition, object and justification of knowledge. Reliability of acquisition, the truth relation between knowledge and its object, the coherence of a system of beliefs, and the justification of the content of knowledge together support the granting of the knowledge predicate. Factual knowledge concerns those parts of knowledge whose content can be expressed in a natural language.

Practical knowledge – The epistemic role ‘practical knowledge’ is granted to those entities that comply with certain demands. Unlike factual knowledge, practical knowledge does not apply to well-described entities. Instead, it applies to certain skills and competences, for instance to the assessment capabilities of a judge, or the pleading skills of a lawyer. Criteria for the assessment of such knowledge are somewhat harder to determine, as the acquisition, object and justification dimensions are unclear. Rather than an existing object, against which knowledge can be tested, practical knowledge often produces new objects. The acquisition dimension thus becomes a production dimension, which can still rely on the reliability criterion. This applies especially to the legal domain, in which the ability to defend or assess a case, or to make a judgement, heavily depends on the experience of a legal professional.

3.5. Knowledge Criteria

Under what conditions may we call something legal knowledge? This question has been revived by Gettier (1963), who explained that the definition of knowledge as true justified belief needed revision. Knowledge criteria define conditions under which we can qualify an entity as knowledge. We discuss four criteria that may establish a qualification relation between a belief and a 'piece' of knowledge. These criteria are truth, justification, reliability, and coherence. They criteria regard the correspondence of a belief with a part of reality, the presence of satisfactory reasons for the belief, the reliability of the acquisition of a belief, and the conformity of an individual belief with other, related beliefs, respectively. Except for truth, the knowledge criteria add to the fulfilment of the broad concept of justification, *i.e.*, if the criteria proper justification, reliability and coherence are fulfilled, this provides support for the conclusion that the broad concept of justification is fulfilled as well. The use of knowledge criteria for the evaluation of legal beliefs was discussed in, *e.g.*, Mommers (1999) and Mommers and Van den Herik (2000).

Truth

'Truth' and 'true', as expressions of our daily language, refer to different phenomena. For instance, if we say that we want to know the truth about the Bijlmer disaster, we mean that we want an accurate and complete description of the plane crash, of its causes, and of the events that followed it. If we assert that Van Thijn acted as a true leader after the disaster, we mean that he did what we think a leader should do under certain circumstances. In case we state that what Van Thijn said was true, we mean that he made a statement that corresponded to an actual event – provided that we regard truth as a semantic, non-epistemic criterion. *Semantic* means that truth is a relation between sentences and reality. *Non-epistemic* means that truth does not depend on knowledge; if we are absolutely convinced that some proposition is true, that does not mean it *is* true. Instead, truth depends on the actual agreement between a proposition and reality.

If, however, we regard truth as an epistemic criterion, truth becomes a function of the presence of some form of justification for a belief. The truth of a belief then depends, for instance, on the presence of good reasons for that belief. As a consequence of identifying truth with some epistemic criterion, it easily becomes empty. So, for instance, when we identify truth with providing sufficient reasons, we may as well drop the notion of truth. But if we make the truth of a belief dependent on the fulfilment of several different epistemic criteria, for instance proper justification and coherence, truth can be a useful predicate.

Truth, understood as a non-epistemic criterion, is independent of our knowledge. It belongs to the realm of semantics. The non-epistemic versions of semantics describe the meaning of language in terms of the relation between language and reality. This means that the truth of a belief does not depend on the belief's relation with other beliefs. Instead, it only depends on the belief's relation with reality. The main non-epistemic truth criterion is correspondence truth. This criterion says that for a sentence to be true, it should be in accordance with a situation in reality. Thus, the truth of some sentence does not depend on our opinion about its truth. The truth of a sentence can be postulated, but it can only be backed by giving reasons or proof for it, and never be proved unconditionally.

Such an idealised, semantic notion of truth has a major disadvantage. If we succeed in separating epistemic considerations from semantic ones, *i.e.*, if we separate the relation

between knowledge and reality from the relation between language and reality, our epistemology should preferably be such that it enables us to form correct beliefs about reality. Otherwise we would never be able to apply the concept of truth in real situations, *i.e.*, we would never be able to say (with an acceptable degree of certainty) whether some statement is true or false. Therefore, we have to find some way of linking our epistemic evidence (in the form of reasons and a reliability measure) to a state-of-affairs as it is in the objective world. A realist epistemology enables us to do so. In a realist epistemology we may hold the assumption that we form true beliefs whenever they are sufficiently justified.

In the context of this article, we adapt a simplified version of Devitt's (1991) notion of correspondence truth to accommodate human-constructed facts (for instance the existence of a legal rule 'killing a person on purpose counts as manslaughter') in the following way:

A sentence is true or false in virtue of: (a) its structure; (b) the referential relations between its parts and reality; (c) the objective nature of that reality.

In this definition, only part (c) is altered. In the original definition Devitt (*ibid.*) refers to the 'objective and mind-independent nature of that reality'. The mind-independence demand is left out because it restricts the application area of the correspondence truth criterion too much. To be able to apply the non-epistemic correspondence truth criterion we just need to guarantee that the parts of reality we are talking about are not true (or false) because we say they are true (or false), but because they have been established already when we state something about them. For instance, the establishment of such facts can be attained by institutional rules or by conventions.

Justification

Beliefs are justified in different ways, depending on their content and on their type. A belief can be justified by other beliefs, such as beliefs based on sensory evidence, beliefs based on the statement of another person, or by facts. The fact that the streets are dry could form a *reason* for me to believe that it has not rained. In as far as the justification of a belief (or some other entity, such as an act or a proposition) is given in terms of explicit reasons, we call it justification. Justification refers both to the act of giving reasons and to the state of being justified. If I give some reason for my belief, I am in the process of justifying properly, and if I have sufficient reasons for my belief, the state of being justified properly is attained. A belief can be justified for one person while it is not for another. For instance, if I lack reasons for a belief, but a friend of mine has good reasons for a belief with the same content, he will be justified properly in his belief, whereas I will not be justified properly in my belief.

Justification is central to knowledge about the legal domain, as such knowledge is often about entities that derive their existence from reasoning. Reasoning comprises the arrangement of reasons in such a form that a consistent argument structure results, and ideally, the proper justification criterion is fulfilled. In the description of proper justification in the legal domain, the focus is somewhat different from proper justification for regular knowledge. In traditional epistemology, proper justification is discussed mainly with respect to perceptual beliefs. Justification in the legal domain also applies to other types of beliefs, such as interpretative beliefs. For instance, if we need to interpret some law text, different sources of justification enter. Reasons in such a context may be based on material and formal sources of law.

Defining proper justification in a realistic way, that is, employing a criterion that can actually be used in real life, can be attained. The following example definition of proper justification takes into account both reasons and defeaters: there should be either a conclusive or a non-conclusive reason for a subject to believe a certain proposition *p*. Additionally, there should not be a defeater for this proposition, nor for the reason for the subject to believe that proposition.

In this definition, some arbitrary choices are made with respect to the depth of justification. For instance, in some cases, one non-conclusive reason is hardly sufficient justificatory material to justify a certain belief. And if there are reasons that are inconsistent with each other, how do we choose the right one? However, justifying a conclusion by giving a reason for it, and justifying these reasons by giving other reasons, and so *ad infinitum*, does not fit in with our needs either. Therefore, a relatively arbitrary choice with respect to the depth of justification is necessary to apply the criterion in a sensible manner.

Reliability

The criterion of reliability mainly applies to perceptual beliefs (*cf.* section 2.5). The issue that induced the introduction of the reliability criterion is illustrated by the following example, drawn from Goldman (1976, p. 772-773), and paraphrased in Audi (1993, p. 188). A person named Henry enters a district where, along the roads, barns made out of papier-mâché appear. However, Henry cannot see the difference between real barns and fake ones. At the border of the district, he sees a barn, which is a *real* one. Now, Henry's belief that he sees a barn is true and it is justified, but is it knowledge? Goldman says we are inclined to say it is not. The criterion that should be complied with is the *reliability* of a belief, which is defined by Goldman as follows. Given a certain belief, there should be no (potential) event that could cause the same belief, while that belief, which is justified and true, is not a piece of knowledge. Thus, in case of Henry, there should be no papier-mâché barn on the route. If there is one, Henry could form a belief about a real barn on the same route ('there is a barn right here'). He could be justified in believing it, and the belief would be true. But the belief would not be knowledge, because of the possible occurrence of an event that would prevent the belief from being transformed into knowledge. This criterion of reliability primarily concerns perceptual beliefs.

Audi lists a number of subcriteria that determine whether a perceptual belief complies with the reliability criterion (Audi 1993, p. 17):

- “1 the acuteness of the senses relevant to forming, sustaining, and confirming the belief;
- 2 the normality of their operation at the time;
- 3 the appropriateness of the perceptual circumstances to the content of the belief;
- 4 the normality of the perceiver's responses to the sense(s);
- 5 the absence of a justified belief - or of justification *for* believing - that one or more of (1)-(4) fails to hold.”

In brief, these criteria amount to the following. Criterion (1) says that we should have the power to discriminate a certain fact. So if I claim that I see a barn, I should be in close distance to it. In that case I can discriminate it clearly from its surroundings, and do not mistake it with some other object (a barn facsimile). Criterion (2) says that our senses should operate properly. Hallucinations and optical illusions can disturb what we perceive. Criterion

(3) says that our perception should be appropriate to the kind of belief it is supposed to sustain. This means that when we perceive a colour, the lighting should enable us to distinguish red from green. Criterion (4) says that a disturbance between the act of perceiving and the forming of a belief should not occur. While we see a red thing, we may not believe it is red, just because we are confused in some way. Criterion (5) says that there should be no reason for us to believe that any of these problems occurs at the time (*ibid.*, p. 201-202).

Reliability of legal beliefs should allow for the assessment of beliefs concerning legal affairs. But reliability has traditionally been applied to perceptual beliefs. These beliefs constitute only a small part of the beliefs relevant for the legal domain. Reliability is a measure for the integrity of the cognitive system. It is an externalist criterion, *i.e.*, it provides us with the chance that our cognitive system yields correct beliefs, and this measure is determined independently of our internal states. Audi's (1993, p. 17) five criteria for determining the reliability of a belief all hold for perceptual and testimonial beliefs in the legal domain as well. For the other types of belief, the reliability criterion has to be rephrased. In case of a memorial belief (*cf.* section 2.5) that is originally based upon perception, both the reliability of the perceptual apparatus and the reliability of the memory of a person are relevant. In case of a reasoned belief (*cf.* section 2.5), there should be an acceptable reasoning method, and in case of interpretative beliefs (*idem*), the way the belief is acquired should be acceptable as well. Therefore, we define reliability in the legal domain as follows:

A legal belief is acquired in a reliable manner whenever the route by which it is acquired is acceptable by the standards in a given legal and social context.

Reliability is thus based upon the acceptability of the route by which a belief is acquired. In case of perceptual beliefs, reliability is measured in terms of the production of *truth*. In case of reasoned beliefs, the truth criterion may have to be dropped. Instead, the adherence to a procedure becomes important for the fulfilment of the reliability criterion. If there is no fixed procedure for the acquisition of a belief, such as with interpretative beliefs, the acceptability of its acquisition can be determined entirely by relating to the content of the interpretative belief. To establish the acceptability of the acquisition route of interpretative beliefs, we refer to the reasons given for these beliefs. Reliability is then reduced to the fulfilment of the proper justification criterion for a sufficient amount of interpretative beliefs produced by a certain person.

The difference between the reliability criterion and the justification criterion is that the former is located in the 'context of discovery', and the latter in the 'context of justification'. The former is about the production of beliefs, and the adherence to the procedures that perform this task, the latter is about providing good reasons for the result of the procedure. Distinguishing the two is difficult, because the adherence to a procedure also adds to the proper justification of a belief.

Coherence

In the current subsection, we start discussing general definitions of coherence. The main similarity between the two definitions we give (their internalist nature) is the outset of a brief discussion of the degree to which coherence constitutes truth. After that, we discuss legal philosophers' views on coherence, explaining the main components of their definitions. There are different definitions of coherence, varying from the logical definition by Kirkham (1992)

to the extensive definition that was derived from Bonjour's (1985) *The Structure of Empirical Knowledge*. Kirkham's definition of coherence says that a coherent belief set should be consistent, and that there should be inductive or deductive implication relations among the beliefs (*cf.* Kirkham 1992, p. 104):

"Each member of some set of statements or beliefs is consistent with any subset of the other statements or beliefs. Each statement or belief is inductively or deductively implied by the set of premises formed by all other statements or beliefs, or by each other statement or belief."

Bender (1989) gives a summary of the subcriteria of the coherence criterion he found in Bonjour's (1985) *The Structure of Empirical Knowledge*. The following set of conditions must be fulfilled in order for a set of beliefs to be coherent (Bender 1989, p. 5):

- "(i) It is logically consistent,
- (ii) It has a high degree of probabilistic consistency,
- (iii) It has a significant number of relatively strong inferential connections among component beliefs,
- (iv) It is relatively unified, i.e., does not divide into relatively unconnected subsystems,
- (v) It contains few unexplained anomalies,
- (vi) It provides a relatively stable conception of the world and remains coherent (i.e. it satisfies (i)-(v) in the long run) and
- (vii) It satisfies the Observation Requirement, i.e., it must contain laws attributing a high degree of reliability to a reasonable variety of cognitively spontaneous beliefs, including introspective beliefs."

When comparing Kirkham's (1992) and Bonjour's (1985) coherence criterion, the striking difference is that Kirkham's criterion refers only to logical characteristics of the belief set, whereas Bonjour's criterion also refers to the content of those beliefs, the degree to which the beliefs in the set are unified, the stability of the belief set, and the link between beliefs and the world (the Observation Requirement). However, in both definitions, coherence is still an internalist criterion, *i.e.*, it concerns the internal relations of some system. It does not concern the relations between the system and reality, unless there are beliefs in the system that concern reality (and then the Observation Requirement comes into play).

The internalist nature of the coherence criterion has a consequence for the relation between coherence and truth. The degree of coherence is often regarded as a direct measure for the degree of truth of the beliefs to which it applies. I reject this interpretation, because beliefs can be coherent without being about reality. But even if coherence is not used as a truth criterion itself, it can be used as a knowledge criterion in either of two ways. First, its purpose can be to give epistemic support for the truth of the beliefs involved (instead of being a direct measure for the truth of the beliefs, it gives support for the assumption that the beliefs involved are true by correspondence). This is attained by employing the assumption that beliefs cohere *because* they adequately represent a coherent reality. Second, its purpose can be to support the beliefs by the mere fact that they cohere. In this case, coherence directly supports the transition of belief to knowledge; it is an ideal in itself.

Coherence in law is defined in very different ways, but with very much the same intentions. McCormick (1978, p. 152) says about coherence that "the multitudinous rules of

a developed legal system should ‘make sense’ when taken together”. The criterion usually consists of a demand of consistency plus a demand of the presence of reasonable content relations among beliefs. Thus, two beliefs cohere with each other when they do not logically exclude each other and we are able to say that they fit in with each other.

Peczenik (1989, p. 178-179) distinguishes between thirteen subcriteria constituting the notion of coherence. I summarise these subcriteria by three measures, *viz.* support, preference, and universality. The first measure, support, relates to the degree to which some statement is backed by reasons, and the degree to which it is interconnected with other (universal) statements, and the degree to which a set of statements contains supported statements, *etc.* The second measure, preference, indicates the degree to which principles relate to each other in a preferential order. The third measure, universality, denotes the degree to which concepts can be applied generally, resemble each other, are cross-connected, *etc.* According to Peczenik, the list applies to statements, universal statements, concepts, theories, reasons, chains of reasons, and principles. But for the sake of simplicity, we assume that they apply to beliefs as well.

There is an important argument in support of employing coherence as a knowledge criterion. The legal domain is a part of reality constructed by human beings. If we try to theorise about that part of reality, it could be argued that coherence is a reasonable criterion to employ. Human beings usually try to apply as much consistency on the things they design as possible. The quality of some work (be it a law or a book) is often judged by coherence-type criteria. Therefore, coherence becomes a reasonable demand.

Summarising, coherence concerns the presence and nature of relations in a set of beliefs: its main ingredient is the support measure mentioned above. Except for the demand of consistency of the beliefs considered, content relation among those beliefs play a central role in the concept of coherence. We therefore define the criterion as follows:

A set of legal beliefs is coherent whenever there is a high number of support relations among the beliefs in the set.

In section 4, the four knowledge criteria discussed above are used to define practical requirements and assessment schemes for collaborative environments.

4. IMPROVING THE QUALITY OF CONTRIBUTIONS IN COLLABORATIVE ENVIRONMENTS

There are methods of improving the quality of production in collaborative workspaces. These are based on the improvement of (perceived) authoritativeness in on-line environments. An example of a schema meant for assessment in on-line legal collaborative workspaces is provided in Mommers 2003. The schema proposed is based on assessment frameworks that are in use in other contexts, such as IT forums, online auctions and review sites, and on fundamental research on valuation of knowledge. It uses truth, reliability, coherence and justification as main criteria for valuing contributions and contributors, in an attempt to assess, and if possible promote, their individual quality.

The same quality improvement can be attained by making use of human moderators. Their contribution, however, is more expensive - and it may be more intrusive to individual collaborators - than moderation regulated by a reputation management system. Also, the combination of human moderators with a reputation system may be considered. A reputation management system should take into account the specific requirements of professional legal environments. This means not only that the information built and moulded in a collaboratory should acquire sufficient authority, quality and reliability, but also that it respects professional autonomy, and is accepted and actively supported by management. In practice, this means that it should somehow acquire the status usually ascribed to, for instance, publishing articles in professional journals.

If we take a closer look at the development of collaboratories, we can see a need for mechanisms to value individual contributions and contributors. The attitude of contributors and users towards a contribution may be expressed in valuations and justifications of those valuations. These valuations may be backed by profiling information on a contributor, establishing a reliability profile for that member. This profile can be used by others to determine whether they are inclined to believe and use the contribution. Benkler (2006, p. 104) states that "Cooperation in peer-production processes is usually maintained by some combination of technical architecture, social norms, legal rules, and a technically backed hierarchy that is validated by social norms."

In a legal context, much work may well benefit from the interaction among different practitioners. The combination of collaboratories with elements of knowledge-valuing techniques may form a fruitful environment for knowledge development and enhancement. Despite these benefits of a 'collaboratory reputation system', measures must be taken to avoid contributors creating many pseudonyms and use them to gain a disproportionately large influence.

4.1. Collaboratories and the Three Dimensions of Knowledge

With respect to three dimensions of knowledge, namely knowledge acquisition, the object of knowledge, and justification of knowledge, a reputation system for collaboratories can take the following form. The acquisition dimension may, for instance, require contributors to a legal collaboratory to indicate how they have acquired the information they use in their arguments (the origination source of the information), so that other users and contributors can establish the reliability of that information. The object dimension may, for instance, require a clear indication of the content source of the information, enabling other contributors to check such sources and to assign value to them. The justification dimension requires contributors to argue their positions and their comments on other contributions.

The justification dimension has been subject of extensive research (e.g. Gordon 1995, Hage 1997, Prakken 1997, Verheij 1996). A collaboratory environment offers the opportunity to use meta-information on the acquisition, object and justification of knowledge to direct the interaction between contributors towards a satisfactory result. Implementing criteria relating to the three dimensions of knowledge thus enables the support of procedural and substantive justification, while taking into account both the truth, reliability and coherence of the knowledge content of a system. As such, knowledge criteria, related to the three dimensions

of knowledge, may act as a guidance in the exchange of ideas about a certain legal issue, and form the main reference points for assigning value to those ideas.

The outline of the proposed reputation system is as follows. The entities distinguished are discussions, contributors, statements, and questions. Epistemic roles distinguished are reasons, defeaters, conclusions and factual knowledge.

Table 2 indicates the way in which the value for a knowledge criterion with respect to an element (entity or epistemic role) is determined. Note that the valuations can differ per assigned epistemic role. For instance, a statement that counts as a reason (has ‘reason’ as an epistemic role) can have a justification value different from the same statement that counts as a defeater (has ‘defeater’ as an epistemic role). The statement *itself* can also have a different justification value.

With respect to the reliability and justification criteria, elements are assigned a value between 0 and 1. With respect to the truth and coherence criteria, one of three values is assigned: for truth, the values are *true*, *false* and *not applicable*, and for coherence, the values are *coherent*, *incoherent* and *not applicable*. A brief explanation of the ways in which the values are determined follows below.

The reliability of an element (except for contributors) is determined directly on the basis of the reliability value for the contributor who introduced the element. Reliability is measured as a value between 0 and 1. The initial reliability of a new contributor can be set by the other contributors. Contributors can earn a higher (or lower) score by the evaluation of their contributions by other contributors. The reliability of a contributor is calculated from (1) the number of positive and negative valuations and (2) the relevance of the elements for which the valuations are determined.

The value *true* or *false* can be assigned to an element (a reason, defeater or conclusion) by individual contributors under two conditions. These conditions are: the truth or falsity of an element ought not be disputed by a different contributor with a certain minimum reliability score, and the reliability of the element itself ought to have a certain minimum value. Of course, the assignment of the value *true* to an element only establishes the *assumption* that the element is true. If the assignment of the value is not disputed, this adds to the reliability of the contributor.

The value *coherent* or *incoherent* can be assigned to an element by individual contributors under two conditions. These conditions are: the postulated coherence or incoherence of an element ought not be disputed by more contributors than it is supported by, and there ought to be a minimum value for the justification status of the element. If the assignment of the value is not disputed, this adds to the reliability of the contributor.

The value for the justification criterion is either an initial value, equal to the reliability value for the contributor who contributed it, or a derived value, based on the presence of reasons or defeaters for a conclusion. In both cases, the value can be adjusted by contributors. In the latter case, the system calculates a justification value on the basis of justification values of reasons and defeaters pointing to the element at hand. In addition, the value of individual elements, and the justifying or rebutting force an element exerts towards a different element, can be valued by contributors by increasing or decreasing the assigned value.

Table 2. Valuations for entities and epistemic roles within a collaboratory environment

criteria	reliability	truth	coherence	justification
entities				
discussion	equals the average valuation of all contributors' reliability	not applicable	valuation of coherence across all contributions (statements and questions)	not applicable
contributor	equals the average valuation of a person's contributions	not applicable	valuation of coherence across contributions	valuation of being justified in taking a stance
statement	equals the average reliability of the contributor	assigned by contributor	valuation of coherence between the elements of the statement	valuation of justification status
question	not applicable	not applicable	valuation of coherence between the question and a discussion	not applicable
epistemic roles				
reason	equals reliability of the contributor who introduced the element	assigned by contributor	not applicable	valuation of justifying force with respect to a conclusion
defeater	equals reliability of the contributor who introduced the element	assigned by contributor	not applicable	valuation of rebutting force with respect to a conclusion
conclusion	equals reliability of the contributor who introduced the element	assigned by contributor if no defeaters present	not applicable	valuation of justification status
factual knowledge	maximum reliability	true	coherent	justified

An example of a calculation for a justification value is as follows. There are two reasons and one defeater for a conclusion. Reasons p and r have justification values with respect to a conclusion of respectively 0.8 and 0.7, defeater q has a 'negative' justification (rebutting) value of 0.3 towards the same conclusion. The initial justification value for the conclusion is calculated by a simple division of $(0.8 + 0.7 - 0.3)$ by 3 is 0.4. Because the combination of reasons does not necessarily lead to a higher degree of justification, this is only an indicative value. Justification values can be adjusted by individual contributors, but only to a certain degree, depending on their reliability value. The higher a contributor's reliability, the more he or she can influence the justification value of an item.

On the basis of the valuation of different criteria with respect to a given element, the knowledge predicate can be assigned to those elements that comply with a certain fixed set of criteria, for instance a sufficient degree of reliability and justification. The knowledge predicate functions as a simple identifier for those elements that form the consolidated core of content of a collaborative environment.

The work on a particular subject is enabled by a number of possible moves: contributors can introduce statements and questions, and attach different epistemic roles (reasons, defeaters, conclusions and factual knowledge) to them, they can comment on any of these, they can value an element (entity or epistemic role), and they can revoke an element. The value and predicate assignment guidelines described above constitute only a rough idea of an actual collaborative environment, as such an environment should include a rule set that provides a stable discussion environment, in which new contributors and contributors with dissenting opinions still have a say.

5. ON-LINE COLLABORATION IN LEGAL KNOWLEDGE DISSEMINATION

Summarizing, the argument made in this article is as follows. Understanding of the law by the citizens of a state is crucial for the legitimacy of governance. For citizens to understand the law, there has to be a translation of sources of law into understandable information, taking into account factors such as the background knowledge and goals of the information public. In order to perform this translation activity, legal professionals and communication professionals have to work together. Their collaboration has to be guided to improve the quality of their contributions and of the dissemination product. This involves facilitating interdisciplinary communication, and the ‘interfacing’ between the knowledge comprised by these disciplines, and their vocabularies.

To support this interfacing task, the concept of knowledge is analyzed according to three dimensions, namely acquisition, object, and justification. Each of these dimensions leads to the establishment of knowledge criteria, normative criteria establishing the difference between mere belief and knowledge (cf. section 3.5). If a belief satisfies the criteria, it gains the qualification as knowledge as a kind of ‘quality stamp’. The criteria themselves (truth, reliability, coherence and justification) provide ample opportunity for establishing functional requirements regarding an online collaborative environment. In establishing these requirements, the goal of collaboration in legal knowledge dissemination should, of course, be leading.

Four types of entities and four epistemic roles (only practical knowledge is left out) discussed above are used in the context of the current framework. They are listed in the table below. For each of the entities and epistemic roles, there is an indication of how the value of the knowledge criteria reliability, truth, coherence and justification is determined. Valuations are either determined manually, or calculated on the basis of a collection of manual valuations. Although reliability and truth should not attain an intersubjective nature by way of these valuations, in practice there is no other attainable way of establishing the compliance with these criteria.

5.1. Regulating Collaboration

Returning to the example from the previous section, the translation given there is actually the outcome of extensive research not only in legal doctrine, but also in the practice of police data exchange. The explaining of such a brief fragment of a regulation therefore shows how important it is to collaborate closely on these matters: how to articulate relevant questions on the one hand and answers to these questions on the other hand. It also proves the sheer scale of the ambition of letting people collaborate on-line on such complex matters, and even to try to 'regulate' this collaboration.

Moreover, the regulation should be – at least partly – in the hands of the collaborators. This is an interesting idea put forward in collaborative workspace literature (Groenouwe and Top 2006), namely that of letting establish the rules of a particular collaborative exercise to be determined by the participants in that exercise. Instead, however, of employing a rather formal-logical approach to this so-called 'constitution' (the basic rules of collaboration and use), we choose to focus on easily-usable rule frameworks and compliance-furthering mechanisms. It thereby not only relates to the hereforementioned collaborative workspace research, but also to the work of those who claim that the web itself encompasses numerous regulative mechanisms (Lessig 1999).

We wish to stress the importance of preventing 'virtual straitjackets' from occurring, both in the collaborative processes themselves, and in regulative systems governing those processes (which, of course, are closely connected to each other). Measures that may guarantee this, might range from a non-invasive reputation system (it does not limit the rights of a contributor in any way, it just indicates contributors' and contributions' reputation values) to 'rule of law' ways of governing the reputation system's behaviour (e.g. the rules of the reputation system should comply with some minimum requirements (cf. Fuller 1969)). This is why we propose a layered model for the reputation system.

Rather than using a 'constitution', usage rules and compliance mechanisms are deemed to be a collection of the following elements: (a) a 'Collaboration Mission', setting out the collective goal of the community, and the goals of the individual (groups of) participants; (b) a 'Code of Conduct', setting out the principles of collaboration in terms of what to do and what not to do; (c) a 'Reputation Charter', establishing how the valuing of individual contributions and individual participants should take place; and (d) a 'Reputation System', implementing the policies from the reputation charter into the collaborative workspace. The resulting framework forms, together with the actual collaborative workspace, an experimental setting, of which this article only sets out the initial situation.

Fuller's (1969) minimum criteria for a functioning legal system are: (1) its rules must be general in nature; (2) its rules must be publicly promulgated; (3) its rules must be effective only from the time of promulgation; (4) its rules should be understandable; (5) the rules should be consistent with each other; (6) the legislator and citizens ought to be able to follow the rules; (7) its rules should be relatively stable; (8) administration should be consistent with its rules. If we apply these criteria to the regulation of a collaborative environment, namely to the Code of Conduct and the Reputation Charter, they can be interpreted as follows. They should apply equally to all contributors, their rules should be known to all participants, its rules may not have consequences for established rights, its rules must be understandable to all participants, its rules ought not impose impossible demands on the participants, changes may

not drastically alter the Code and Charter, and the Reputation System should follow the principles laid down in the Code and the Charter.

5.2. The Rules of Collaboration

A viable set of collaboration rules should, we assume, comply with Fuller's set of minimum criteria. Additionally, it should afford the specific aims of the collaborative enterprise. We first provide an example of the way the four parts of regulative system are filled in in the particular case of legal knowledge dissemination.

Collaboration Mission

The mission of collaboration is to find solutions for legal problems and to communicate them in such a manner that they are useful and understandable to our target group.

Code of Conduct

- (1) Each member of the collaborative environment has the right to articulate his or her own opinion at any stage of the collaborative activity.
- (2) Each member of the collaborative environment has the duty to contribute to the mission of the collaborative activity.
- (3) Each member of the collaborative environment has the duty to clarify contributions sufficiently for other participants.
- (4) The members of the collaborative environment together establish the rules of the Code of Conduct by a qualified majority of votes.
- (5) The compliance between the Reputation Charter and the Reputation System is warranted by
 - a. the fact that the Reputation System is built and maintained by people outside the circle of members;
 - b. the institution of an independent Reputation Board checking the compliance.
- (6) All changes in the Code of Conduct must comply with the following criteria:
 - a. they must be general in nature, and may thus not be aimed at only certain contributors;
 - b. they must be made known in clear terms to the community before they are made effective, and their effect may not have retroactive effects;
 - c. they must be consistent with other rules of the Code and the Charter, unless these inconsistent rules are revoked;

Reputation Charter

- (1) The Reputation System is meant to reward wise and useful contributions to the Collaborative Mission.
- (2) The Reputation Charter may only be changed by a normal majority of votes.
- (3) The workings of the Reputation System must comply with the Reputation Charter.
- (4) Discussions and their constitutive elements, as well as their specific roles in collaboration, are assessed according to the criteria reliability, truth, coherence, and justification.

- (5) Participants in the collaborative environment decide to what degree elements and roles are true, coherent and justified.
- (6) The reliability of elements and roles is calculated on the basis of the valuations.

Reputation System

The reputation system is discussed in more detail in section 3.2. It connects entity types and epistemic roles to the four 'knowledge criteria'. By leaving it up to the participants in a collaborative environment to assess each other's contributions, a network of interrelated values comes into existence. Starting from identical starting positions ('neutral' reliability values of 0.5), participants have to attach values to the coherence and justification of entities and roles. In a fictive example concerning the example of knowledge dissemination explained above, the translation process includes the interpretation of sources of law. Introduction of statements about these sources allows the assignment of high values for their 'truth', as the statements generally are exact replicas of officially promulgated laws. The justification and reliability criteria become more important as the translation process progresses. Interpretation and simplification then may take their toll, and the quality of translation has to be monitored carefully.

5.3. Reusing Reputation

Many promises were made during the internet's rapid growth in the late nineties. These promises regarded large-scale accessibility of products and services offered by small companies and individuals, because the distribution network was available to anyone. A few years later, we may conclude that only very few players survived, and the rules of traditional marketing still apply. Amazon and eBay became large players, whose value is largely dependent on their brand names. They have both become large network enterprises, housing many small companies and individuals who take advantage of the value of these companies' brands. The on-line survival of such small companies depends on the presence of these large companies, which offer a kind of articulation service. Without the presence of a well-known, trusted company with adequate search facilities, it is relatively difficult to find a small supplier of a product and determine its credibility. It is important to realize that a similar concern is valid for almost any provider of services or goods on the internet, including the provision of legal information.

Thus, in an on-line environment, trust is as important an asset as in the off-line world. Gaining a good reputation in a certain on-line environment would certainly gain attractiveness if you could take that reputation with you to other on-line (or even off-line) places. But is it necessary that such trust provision takes place by commercial enterprises, such as Amazon and eBay? Of course not. Public institutions provide trust. Building on traditional scholarly reputation mechanism research libraries enable open knowledge sharing of publicly funded research by repository technology and interoperable author-identifiers. To a certain extent this can provide for citizens' information needs. Given their goal to support internal scholarly discussion, translational steps have to be taken to meet the needs of net-citizens and innovative entrepreneurs. This can be done in collaborative environments. Wikipedia and Flickr, for instance, may be ideal candidates for both (extending their) reputation systems and exchanging the profiles from those. The value of a reputation profile in one of these

communities for a fair assessment of one's reputation in another community may depend on the degree of relationship between the subjects of the two communities, but the simple fact that you do not have to enter each new community 'empty handed' could mean a great deal to the spread of participation across communities, and the quality of contributions.

There is a flip-side to this coin, namely in potential privacy breaches. But as much as storing and using personal information is considered a privacy risk, there are major advantages in 'being known' by other people. If you wish to sell your old tv set, the price you will get is higher if the buyer knows that you do not lie about its age or existing defects. If you want a loan, the rate you will get it for will be lower if the bank knows that you always pay back in time. To push it a little further: if you are looking for a relationship, you might benefit from relatively objective information about a person's past. In social network software, this is implemented using the principle: 'a friend of a friend of mine is a friend of mine'. This is most likely *not* true, but still, the advice of others can contribute to a better grounded opinion. Detaching information from its original use environment could thus, in principle, support many aspects of daily life. We coin the term 'portable reputation profiles' for such detached information. If anyone could re-use reputation information built up in certain contexts, this would enable, for instance, a part-time eBay-seller who also discussed consumer law issues on a separate legal forum to let his merits on both platforms strengthen his reputation profiles on both platforms mutually.

It need not be necessary to reveal one's identity in order to support portability of reputation profiles. A fixed pseudo-identity can be established through a trusted third party, which links Jones' nickname to his personal data with the assurance that he is the one who the reputation profile applies to. Such personal data can also be linked to arbitrary nicknames, that Jones can use in any context that he wishes to leave traces in, but does not want to be linked to his personal data – unless he authorizes such a link. For instance, Jones could wish not to reveal to the internet community that he deals in furniture, because he is afraid his house will be visited by thieves or because he is afraid he will lose his job over it. Then again, if Jones wants to start his own internet shop, leaving eBay out, he may profit from reusing his existing feedback profile. But the current business model of eBay of course excludes that possibility. Technically, it need not be a problem to guarantee the authenticity of portable reputation profiles, through a mechanism similar to that for authentication. Economically, however, the value of keeping those profiles as proprietary content is considerable – and in theory, portable reputation profiles could mean the end of eBay, as any successful client would be able to take his feedback and 'move' to an auction site where transaction costs are lower.

5.4. Challenges for Reputation-based Collaboration

Reputation systems tend to trigger calculating behaviour. Any framework whose rules are fixed will suffer from this, and frameworks whose rules can change will still find a hard time in keeping ahead of such behaviour – unless the calculative nature of behaviour actually furthers the successful completion of tasks. The regulative mechanism set out in this section is designed to lead to stable behaviour in collaborative environments, but it has not been tested yet. Also, the stability of an environment depends very much on the publics involved, and the question whether it is open to uninvited participants. Consequently, participants have

to accept the ‘meta-level’ introduced by the Code of Conduct and the Reputation Charter as part of their collaborative work, and actually use the assessment opportunities to make it work. For that matter, it would be interesting to find out in what cases a collaborative environment functions like a stable ‘social order’ *without* any sanctioning or reputation system, compared to the situation in which groups in real life usually tend to behave – not only without breaking the law, but also in observing some minimum social rules.

6. CONCLUSION

Reputation systems are a viable way of improving the quality of on-line collaboration. However, the specific tasks to be fulfilled in the on-line environment and the necessity to prevent virtual straitjackets from occurring trigger the need for a more serious investigation of the lawfulness of on-line collaboration. Considering on-line environments as small social orders with a need for ‘rule of law’ induces the necessity of establishing ‘constitutions’, in addition to ways of coping with the difference between ‘administration’ and ‘adjudication’, which is warranted by an independent Reputation Board. The ‘social order’ can be changed by the participants in the collaborative environment, but those changes have to meet Fuller’s minimum requirements for ‘rule-of-lawness’. The task-oriented part of the collaborative environment – which consists of making legal issues understandable to a certain non-legally educated public – is regulated by a reputation system based on the value of knowledge. Criteria meant to determine whether mere belief ‘deserves’ the predicate ‘knowledge’ are used to assess the contributions and participants in the on-line environment.

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