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THE LOGICAL-SEMANTIC STRUCTURE OF LEGISLATIVE SENTENCES

ABSTRACT: This article analyses the logical-semantic structure of legislative sentences from a linguistic point-of-view. First, it is examined which elements constitute the meaning of legislative sentences. The following norm elements will be discussed: legal modality, norm subject, act, conditions of application, time and space, norm authority and negation. In the second part of the article, the logical-semantic relations between these elements are analysed. Following Bowers (1989), these logical-semantic relations are represented in a predicate-argument structure on different levels.

KEY WORDS: legislative language, legal norms, predicate-argument structure, semantic roles

1. Introduction

Legal theory often distinguishes between **NORM-FORMULATIONS** and **NORMS** (Von Wright 1977: 93; Kelsen 1991: 2). In linguistics, a similar distinction is made between the **SURFACE SYNTACTIC STRUCTURE** of (legislative) sentences and their **UNDERLYING LOGICAL-SEMANTIC STRUCTURE** (Bowers 1989: 209). It is well-known that the relation between this surface form of a sentence and its meaning is not a straightforward one. Compare for instance the Dutch, German and French version of article 101 of the Belgian Constitution:

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(1) *Geen* minister kan worden vervolgd of aan enig onderzoek onderworpen naar aanleiding van een mening in de uitoefening van zijn ambt uitgebracht.³

“No minister may be prosecuted or pursued on account of opinions expressed in the line of his duties.”

(2) Ein Minister darf *nicht* anlässlich einer in der Ausübung seines Amtes erfolgten Meinungsäußerung verfolgt oder Gegenstand irgendeiner Ermittlung werden.

(3) *Aucun* ministre *ne* peut être poursuivi ou recherché à l’occasion des opinions émises par lui dans l’exercice de ses fonctions.

Although the sentences in (1)-(3) express the same norm, they differ as for their syntactic structure. In the Dutch version in (1), the negative determiner *geen* combines with the noun *minister*, which is the grammatical subject of the sentence. In the German version in (2), on the other hand, the negative element *nicht* negates the modal verb *darf*. Finally, in the French version in (3), negation is expressed by the discontinuous morpheme *aucun...ne*. *Aucun* combines with the grammatical subject *ministre*, whereas *ne* negates the modal verb *peut*. So, at the syntactic level, negative marking may occur either on the subject or the verb, or on both. However, as will be shown below, at the logical-semantic level, it is the deontic modality which is negated in each case.

This example shows that the syntactic structure of a sentence does not straightforwardly reflect its meaning. In order to cope with these differences between form and meaning, Bowers (1989: 209) argues that a linguistic description of (legislative) sentences “must adopt at least a dual representation, whereby external syntactic structure is accompanied by internal semantic structure”. This article examines how the semantic structure of legislative sentences can be represented. Formalisations of legal norms have been proposed by scholars in various fields, including logic (Von Wright 1977), legal theory (Ruiter 1993) and legal informatics (Van Kralingen 1996). In this article, we will examine the logical-semantic structure of legal norms from a linguistic point-of-view, following Bowers (1989). We will argue that a number of problems raised by his analysis can be solved by making use of insights from legal theory.

In section 2, we determine which elements constitute the meaning of legislative sentences. In section 3, we analyse how these norm elements relate to each other and how these logical-semantic relations can be represented.

³ Article 101 of the Belgian Constitution. See http://www.senate.be/doc/const_nl.html.

2. The elements of a legal norm

The question as to which elements constitute the meaning of legislative sentences has been considered by researchers in various disciplines related to law, including legal translation (Šarčević 2000), legal drafting (Driedger 1976), legal theory (Brouwer 1990), legal informatics (Van Kralingen 1996) and philosophy of law (Von Wright 1977; Ross 1968). Most scholars agree that a norm must comprise at least three elements: a **LEGAL MODALITY** (2.1), a **NORM SUBJECT** (2.2) and an **ACT** (2.3). In addition, four further norm elements may be distinguished: the **CONDITIONS OF APPLICATION** (2.4), **TIME AND SPACE** (2.5), the **NORM AUTHORITY** (2.6), and **NEGATION** (2.7).

2.1 Legal modality

The legal modality, which is also referred to as the norm character (Von Wright 1963), the directive operator (Ross 1968) or the deontic modality (Brouwer 1990), is generally considered the most important element of a norm, because it provides the norm with its normative character. The legal modality determines in which way the norm regulates a certain behaviour. Thus, the function of a norm is to a large extent determined by the legal modality (Van Kralingen 1996: 44).

However, there are some differences in opinion as to what types of legal modalities must be distinguished. We will limit ourselves here to the most widely accepted view, presented in Van Kralingen (1996: 44-50), which argues that there are three basic legal modalities: **OBLIGATION**, **PERMISSION** and **COMPETENCE**. Obligation and permission are deontic modalities which also feature in modal logic and linguistics. Competence is a typically legal modality. It can be defined as the legally established ability to create or apply legal norms (Ross 1968: 130; Kelsen 1991: 102).

2.2 Norm subject

It is generally acknowledged that norms are always directed to a person or a class of persons, referred to as the **NORM SUBJECT**. If a norm were not directed to someone, the norm would be without effect or function (Van Kralingen 1996: 42). However, the norm subject is not always referred to explicitly in legislative sentences. Although the sentences (1)-(3) are not

explicitly directed to a norm subject, there must be some implicit party that the norm is imposed upon, in casu the court of justice.

Von Wright (1977: 77) defines the norm subject as follows: “By the subject (or subjects) of a prescription I understand the agent (or agents), to whom the prescription is addressed or given.” As norms are to be observed and applied, only beings endowed with reason and will, that is human beings, can be the subject of a norm (Kelsen 1991: 89-90).

2.3 Act

The object of a norm, i.e. that which the norm regulates, is human behaviour. Most commonly, the behaviour constituting the object of a norm is some act or activity. An act can be defined as an event performed by a human being, e.g. killing a person, whereas an activity is a process in which a human being is engaged, e.g. smoking (Van Kralingen 1996: 58). Norms concerning activities can be translated into norms concerning acts. For instance, a norm which prohibits the activity of smoking involves two acts: (1) when a person is engaged in the activity of smoking, the norm orders him to perform the act of ceasing to smoke, and (2) when a person is not smoking, the norm prohibits him from performing the act of starting to smoke.

However, not only acts and activities can be the object of a norm. Sometimes, the object of a norm is a certain state of affairs. These norms are not concerned with acts or activities, but envisage what may (not) or must (not) be the case (Van Kralingen 1996: 22). Norms concerning states of affairs are often referred to as norms of the *SEIN-SOLLEN* type, whereas norms concerning acts or activities are called norms of the *TUN-SOLLEN* type (Van Kralingen 1996: 22-23). The sentence in (4), taken from the South-African road traffic regulations, is an example of a *sein-sollen* norm.

(4) A seatbelt shall comply with the standard specification SABS 1080 [...] and bear a certification mark or approval mark.⁴

According to Von Wright (1983: 185), *sein-sollen* norms can be rewritten into *tun-sollen* norms. For instance, a norm prescribing that a certain state of

⁴ Article 213 (8)(a) of the *National Road Traffic Regulations (1999)* of South-Africa. See <http://www.polity.org.za/html/govdocs/regulations/1999/roadregs00.html>

affairs ought to be the case, implies, among other things, that, if the desired state of affairs does not hold and will not arise spontaneously, a norm subject has to bring about the state of affairs. For instance, in (4), the driver of a motor vehicle must take care that the seatbelts of his vehicle comply with certain standards and bear a mark.

2.4 Conditions of application

Legal scholars, e.g. Kelsen (1991: 19-21) and Von Wright (1977: 73-75), distinguish between CATEGORICAL NORMS and HYPOTHETICAL NORMS. According to Kelsen (1991: 19), categorical norms are norms which decree that a certain behaviour is unconditionally obligatory (or permitted), whereas hypothetical norms are norms which decree that a certain behaviour is obligatory (or permitted) only under certain circumstances, which are termed “conditions of application” by Von Wright (1977: 73).

However, both Kelsen and Von Wright point out that even categorical norms are valid only conditionally. A norm is valid when it ought to be observed. So, a norm such as *Close the door* is only valid when the door is open, i.e. when there is an opportunity to perform the act prescribed by the norm. So, all norms are valid only conditionally, but the behaviour which is the object of the norm may be conditionally or unconditionally obligatory (or permitted). For instance, in the norm *Close the door when it's raining*, the act of closing the door is obligatory only when the condition *it's raining* is fulfilled.

Standardly, the conditions of application are expressed by a conditional clause, as in (5). However, the conditions of application may also be inherent in other norm elements, e.g. in the norm subject, as in (6) (Franken e.a. 2001: 164).

(5) No person shall operate a vehicle on a public road towing another vehicle *if the length of the tow-rope, chain or tow-bar between the two vehicles exceeds three and a half metres [...]*.⁵

(6) Any person *driving a vehicle on a public road* shall do so by driving on the left side of the roadway [...].⁶

⁵ Article 330 of the *National Road Traffic Regulations (1999)* of South-Africa.

⁶ Article 296 (1) of the *National Road Traffic Regulations (1999)* of South-Africa.

In (6), the conditions of application are expressed by the restrictive postmodifier inside the noun phrase which functions as the norm subject. Thus, the sentence could be reformulated as in (7):

(7) If a person drives a vehicle on a public road, he shall do so by driving on the left side of the roadway.

2.5 Time and space

Since the object of legal norms, i.e. human behaviour, takes place in space and time, both the place and the time in which that behaviour must or may be performed are part of the semantics of each legislative sentence (Kelsen 1991: 144). In the legislative sentence in (8), space and time are referred to explicitly:

(8) No person shall drive any animal referred to in subregulation (1) *along a public road* during the period *from sunset to sunrise* [...].⁷ [our italics]

However, not all legislative sentences express the place and time in which a certain act must or may be performed. In that case, space and time must be inferred from the context (Brouwer 1990: 77-89).

2.6 Norm authority

Norms do not appear out of the blue: they are always issued by some authority (Von Wright 1977: 75). The norm authority orders, permits or empowers certain norm subjects to do certain things on certain occasions. In the case of statutes, the authority is the lawgiver or legislator, who is mentioned in the so-called enacting formula, appearing at the beginning of every statute. English statutes, for example, are preceded by the following enacting formula (Maley 1987: 27):

(9) Be it enacted by the Queen's Most Excellent Majesty, by and with the advice and consent of the Lords Spiritual and Temporal, and the Commons, in this present Parliament assembled, and by the authority of the same, as follows:

⁷ Article 313 (4) of the *National Road Traffic Regulations* (1999) of South-Africa.

Formerly, a shortened version of this enacting formula, *And be it further enacted, That...*, preceded each section of the Act. This practice was omitted by the Interpretation Act of 1889, which stated: “Every section of an Act shall have effect as a substantive enactment without introductory words”. So, in fact, the enacting formula is to be understood before each section of a statute (Maley 1987: 47).

2.7 Negation

Although it is generally ignored as a separate norm element, negation plays an important role in legislative sentences. Prohibitions, for instance, which are quite numerous in legislative texts, can only be expressed by means of some explicit negative morpheme (Bowers 1989: 249). This is illustrated in the legislative sentence in (10):

(10) *No* person shall park a motor vehicle on a traffic island or in a pedestrian mall or pedestrian lane.⁸

But even in legislative sentences expressing positive deontic concepts such as obligation or permission, negation is often found, for instance in the form of a restriction or an exception, as illustrated in (11) and (12) respectively (Mellinkoff 1982: 28).

(11) A pedestrian may cross a public road *only* at a pedestrian crossing or an intersection [...].⁹

(12) Persons, other than traffic officers in the performance of their duties, driving motor cycles on a public road, shall drive in single file *except* in the course of overtaking another motor cycle [...].¹⁰

Obviously, sentences such as (10), (11) and (12) have a negative element not only in their syntactic structure, but also in their logical-semantic structure. As we will see below, the place of negation in the logical-semantic structure of legislative sentences may differ.

⁸ Article 305 (5) of the *National Road Traffic Regulations (1999)* of South-Africa.

⁹ Article 316 (6) of the *National Road Traffic Regulations (1999)* of South-Africa.

¹⁰ Article 309 (6)(a) of the *National Road Traffic Regulations (1999)* of South-Africa.

3. The logical-semantic relations between the norm elements

Having identified the principal elements of a norm, it is now possible to determine the logical-semantic relations between these norm elements. A method which has proved very useful to represent semantic relations in natural language sentences is the predicate-argument analysis, based on the Predicate Calculus of formal logic (Bowers 1989: 212). In section 3.1, we will briefly discuss this method. In section 3.2, we will apply it to legislative sentences.

3.1 Predicate-argument analysis

The abstract structure representing the logical-semantic relations in a sentence is called a proposition. In propositions, we can distinguish between elements that describe an event or a state and elements describing which participants are involved in the event or state (Givón 2001: 106). The element describing the event or state is called the PREDICATE of a proposition, whereas the participants in the event or state are called the ARGUMENTS of the predicate. For instance, in a sentence such as *John is running*, the predicate *to run* describes an event in which the argument *John* is involved. A predicate which takes one argument is called a one-place predicate. A predicate which takes two arguments, for example *kill* in *Bertha killed Cato*, is a two-place predicate and so on. The usual representation of propositions is to put the predicate first (in capital letters), followed by its arguments between round brackets, e.g. *RUN (John)* or *KILL (Bertha, Cato)* (Comrie 1994: 905).

In addition to identifying the predicate and its arguments, the relationship between the arguments needs to be established as well, i.e. which of them takes which part in the event or state (Comrie 1994: 905). For instance, in *Bertha killed Cato*, one must know not only that *Bertha* and *Cato* are arguments of *kill*, but also that *Bertha* is the initiator of the action and that *Cato* is the participant undergoing the effect of the action. The former is assigned the semantic role of agent, whereas the latter is called patient (Saeed 1997: 140). Standardly, the semantic roles are indicated below each of the arguments, as in (13):

- (13) KILL (Bertha, Cato)
 agent patient

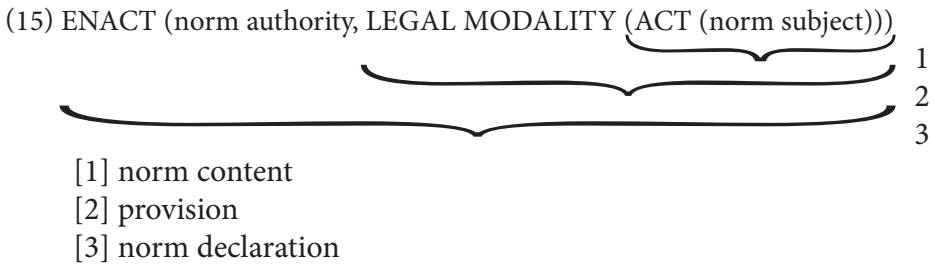
3.2 Predicate-argument structure of legislative sentences

3.2.1 The analysis of Bowers (1989)

In his comprehensive study on legislative expression, Bowers (1989) has applied the predicate-argument analysis to legislative sentences. According to him, the logical-semantic structure of legislative sentences must be represented as in (14) (Bowers 1989: 250):

(14) ENACT (her Majesty, SHALL (DO X (all persons)))

Replacing the concrete norm elements in (14) by the more abstract elements discussed above, results in the following representation:



The proposition represented in (15) is a complex one: it contains three predicates, which are recursively embedded one into the other. At the innermost level, we find the ACT, which has at least one argument, namely the norm subject. Together they form the NORM CONTENT (cf. Von Wright 1977: 71). The norm content is in its turn the single argument of a higher predicate, namely the LEGAL MODALITY. This modal predicate and the norm content constitute the PROVISION. As we have seen above, this provision is dependent on the enacting formula. So, semantically speaking, the provision, together with the norm authority are the two arguments of the ENACT predicate (Bowers 1989: 29; Kurzon 1986: 9 ff.). This level will be called the NORM DECLARATION.

However, Bowers' analysis raises a number of questions. First, the modal predicate is represented as a one-place predicate, a view which is contested by other linguists (e.g. Brennan 1993). Furthermore, the representation in (15) only applies to categorical norms. It is not clear on which level the conditions of application should be represented in the case of hypothetical norms. The same question arises with respect to the norm elements time and space, as well as negation. All these issues are addressed in the remainder of this section.

3.2.2 *The logical-semantic relation between the legal modality, the norm subject and the act*

According to Bowers (1989: 220-222), the “legislative modals” *shall* and *may* are one-place predicates, operating on a proposition, which we have called the norm content. Standardly, however, it is argued that deontic modals represent a two-place predicate, operating not only on a proposition, but also on a subject (in the case of legislative sentences, this is the norm subject) (cf. Brennan 1993). Deontic verbs, then, establish a relation between the subject and the proposition, or, in the case of legislative sentences, between the norm subject and the norm content. Lyons (1977: 823), for instance, defines directives as “utterances which impose upon someone the obligation to make a proposition true”.

The differences between these two views can be demonstrated by means of the following example, taken from Bowers (1989: 220).

(16) An officer shall take a record of the interview.

The legal modality, expressed by *shall*, may be represented either as a one-place predicate, as in (17), or as a two-place predicate, as in (18). These two representations correspond to different types of paraphrases.

(17) SHALL (RECORD (officer, interview))

“It is obligatory that an officer take a record of the interview.”

(18) SHALL (officer, RECORD (officer, interview))

“An officer has the obligation to take a record of the interview.”

In the representation in (17), proposed by Bowers, there is no direct semantic relation between the legal modality, realized by *shall*, and the norm subject, realized by *officer*. This is also reflected in the “impersonal” paraphrase given in (17). However, at the syntactic level, there is a relationship between the norm subject and the legal modality: in the sentence in (16), *officer* is the syntactic subject of *shall*. According to Bowers, this syntactic relation does not reflect a semantic relation. He argues that the syntactic relation between *shall* and *officer* is due to a process called subject-to-subject raising: the norm subject, which is an argument of a lower predicate, namely *record*, is raised to take the subject position in the surface sentence.

According to Brennan (1993: 25), by contrast, the syntactic relation between the modal *shall* and the subject *officer* does reflect a semantic

relation between the two: in deontic utterances, the subject “is understood to have a modal property”. In the case of (16), the norm subject, *officer*, has an obligation to take a record of the interview; he is the *bearer* of an obligation. So, on this view, the sentence in (16) must be paraphrased by using a “personal” construction, as illustrated in (18). The legal modality, then, must be considered as a two-place predicate, taking two arguments, namely the norm subject and the norm content. This is represented in (19).

(19) LEGAL MODALITY (norm subject, ACT (norm subject))

Thus, the norm subject occurs in two places in the logical-semantic structure of norm sentences. The motivation for this representation is that the norm subject is a participant of two different predicates, not only of the ACT but also of the LEGAL MODALITY. However, the formula in (19) does not yet reflect that the two tokens of the norm subject refer to the same entity. This can be solved by adding an identical subscript to the two occurrences of the norm subject:

(20) LEGAL MODALITY (norm subject_x, ACT (norm subject_x))

What remains to be solved then, is what semantic role the norm subject fulfills with respect to the legal modality and with respect to the act. Above, we have referred to Von Wrights definition of the norm subject as “the *agent* to whom a prescription is *addressed*” (our italics). With regard to the act, the norm subject obviously functions as the agent. He is the one who must or may perform the act regulated by the norm (cf. Bowers 1989: 220). With regard to the legal modality, the norm subject functions as the addressee: the obligation or permission is addressed to the norm subject. In linguistics, this semantic role is called the *goal* (Saeed 1997: 141) or the *experiencer* (Longacre 1983: 155).

(21) LEGAL MODALITY (norm subject_x, ACT (norm subject_x))
goal/experiencer *agent*

Notice that the norm authority, functioning as the first argument of ENACT, the highest level predicate, as in (15) above, can be said to fulfill the semantic role of the source.

3.2.3 *The representation of the conditions of application*

As pointed out above, hypothetical norms differ from categorical norms in that the behaviour they regulate is only obligatory or permitted under certain conditions of application. The question arises which is the logical-semantic relation between the conditions of application in a hypothetical norm and the other norm elements, or, as Kelsen (1991: 20-21) puts it: “in a norm which decrees a certain behaviour to be obligatory under certain conditions, what exactly is subject to the condition? Is it the behaviour decreed to be obligatory or is it the Ought of this behaviour (i.e. its being obligatory)?”. According to Kelsen, it is the legal modality which is conditional, for the question is: under which conditions one *ought* (or may) behave in the way specified in the norm, under which conditions the behaviour is obligatory. So, the conditions of application are outside the scope of the legal modality. This may be represented as follows:

(22) conditions of application \rightarrow LEGAL MODALITY (norm subject_x, ACT (norm subject_x))

Legal theory often refers to the conditions of application as the FACT-SITUATION (Tatbestand). The legal modality, the norm subject and the act together constitute the so-called LEGAL CONSEQUENCE (Tatfolge) (cf. Ruiter 1987: 45-46).

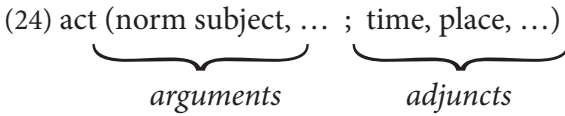
(23) fact-situation \rightarrow legal consequence

So, in the case of hypothetical norms, the provision consists of two propositions, one specifying the conditions under which the particular norm operates and one prescribing to the norm subject what s/he must or may do, in the event the conditions constituting the fact-situation are fulfilled (Šarčević 2000: 136).

3.2.4 *The representation of time and space*

As pointed out above, time and space specify when and where the act must or may be performed. As such, they modify the act regulated by the norm. However, time and space do not constitute arguments of the act, but adjuncts (Comrie 1994: 906). They specify the circumstances of the act, whereas the arguments refer to the participants involved in the act, e.g. the norm subject,

functioning as the agent. In order to separate arguments and adjuncts in our representation of legislative sentences, a semicolon will be used, as illustrated in (24).



3.2.5 The representation of negation

Negation can be seen as a predicate acting upon lower propositions (Bowers 1989: 250). As pointed out above, a legislative sentence is a complex proposition, consisting of a norm declaration, a provision and a norm content. Theoretically speaking, negation may operate on each of these three levels. Lyons (1977: 770-773) distinguishes between PERFORMATIVE NEGATION (negation of the performative verb, e.g. *to enact*), MODAL NEGATION (negation of the modal operator, e.g. the legal modality) and PROPOSITIONAL NEGATION (negation of the proposition within the scope of the modal operator, e.g. the norm content).

Performative negation obviously does not come into play in the case of legislative sentences (Bowers 1989: 250). Modal negation, on the other hand, is frequently found in legislative sentences. For instance, the sentences discussed in (1)-(3) of the introduction, all involve modal negation. Their logical-semantic structure can be represented as in (26) (the elements between square brackets are implicit):

(25) No minister may be prosecuted or pursued on account of opinions expressed in the line of his duties.

(26) NOT (MAY ([court_x], PROSECUTE OR PURSUE ([court_x], minister; because of opinions expressed in the line of his duties))

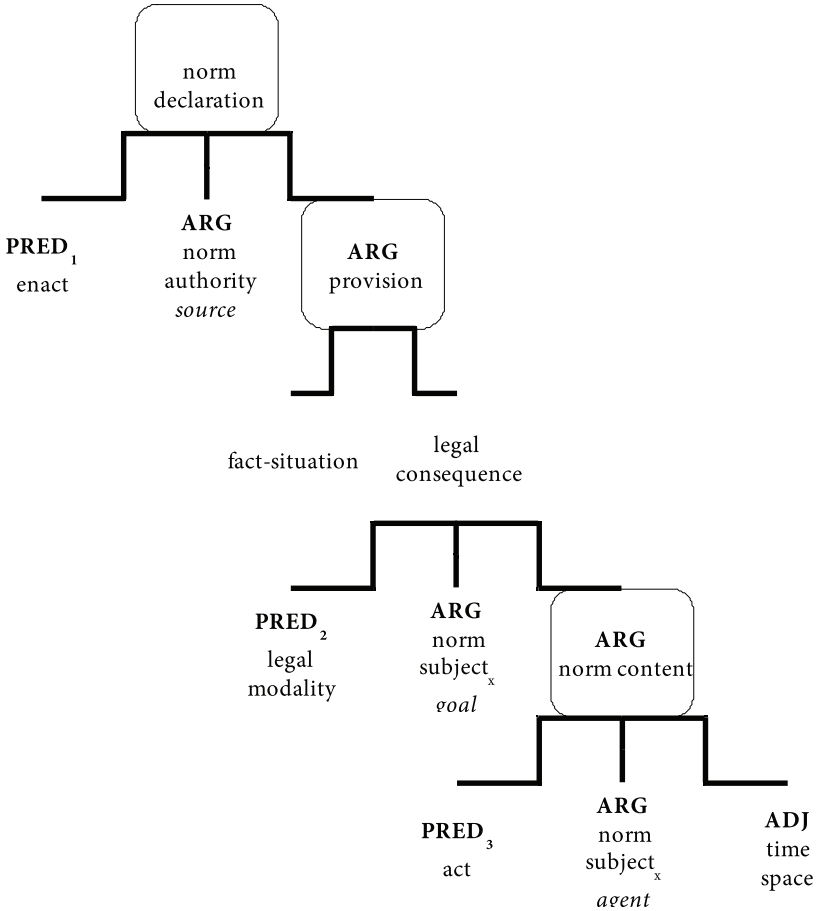
The sentence in (27) provides an example of propositional negation.

(27) The members of the Commission shall refrain from any action incompatible with their duties.¹¹

(28) SHALL (Commission members_x, NOT (DO (Commission members_x, any action incompatible with their duties)))

¹¹ Article III-347 of the European Constitution. See http://europa.eu/constitution/en/lstoc1_en.htm

Figure 1 Logical-semantic structure of legislative sentences



Theoretically speaking, prohibitions may be expressed by stating that it is obligatory *not* to perform some action, as in (27), but in general, they involve modal negation (Lyons 1977: 774).

Finally, in legislative sentences, negation may also operate on the conditions of applications, as illustrated in the legislative sentence in (12).

(12) Persons, other than traffic officers in the performance of their duties, driving motor cycles on a public road, shall drive in single file *except* in the course of overtaking another motor cycle [...].

(28) NOT (OVERTAKE (motor cyclist_x, another motor cycle)) → SHALL (motor cyclist_x, DRIVE IN SINGLE FILE (motor cyclist_x))

4. Conclusion

In this article, we have examined which elements make up the meaning of legislative sentences and how these elements relate to each other. In Figure 1, the logical-semantic structure of legislative sentences is represented by means of a tree diagram.

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