

LEGAL LOGIC (*logique juridique; Logik des Recht; l gica jur dica*). L. l. is the theory of the use (and application) of the principles of identity and non-contradiction to establish the relationships between the terms of a ‘legal proposition’ and between different ‘legal propositions’. By ‘legal proposition’ (henceforth l. p.) is meant here: a) a statement attributed the nature of a legal rule by virtue of previous assumptions (v.); b) a statement whereby a particular meaning is attributed to a legal rule; c) a statement that refers to a particular event and defines it in terms of a particular normative meaning. The criteria and problems of l. l. concern all three types of l. p. because, generally, the presence of each of them in discourse explicitly or implicitly relates to the presence of the others. The initial definition, for reasons which will be fully explained below, runs as follows: l. l. is the set of criteria (and their study) whereby l.ps a) assume an univocal meaning; b) stand in a relationship of identity, exclusion, inclusion, or extraneousness; c) can function as premises for a necessary inference.

In the age of the codifications – according to an account whose most authoritative proponents have been Gaetano Filangeri (*Riflessioni politiche*, Naples 1774) and Cesare Beccaria (*Dei delitti e delle pene*, in Edizione Nazionale delle Opere di Cesare Beccaria, I^o, Milan 1984, pp. 15-129) – the model for l. l. was the practical (or legal) syllogism (v.): a) a major premise consisting of the legal norm (abstract case); b) a minor premise (concrete case) consisting in the specific fact being adjudged; c) a conclusion consisting in legal definition of the fact and able to furnish the *necessary* content of the ruling. Believing in the efficacy of the legal syllogism is to assume that: a) the meaning of the legal rule is clear and unequivocal; b) the description of the fact is accepted by all parties to the trial. However, increasing distrust in these assumptions has meant that – with notable exceptions represented, for example, by Paul Comanducci and Riccardo Guastini (*Razionalit  e legalit  nel giudizio penale*, in M. Basciu (ed.), *Diritto penale, controllo di razionalit  e garanzie del cittadino*, Padua 1988, pp. 163-88) – the practical syllogism is no longer considered a probative device, but if anything, a simple scheme with which to order in sequence the various arguments relative to interpretation of the law, reconstruction of the facts, and the conclusions (Michele Taruffo, *Il controllo di razionalit  tra logica, retorica e dialettica*, *Ibid.*, pp. 55-72).

For contemporary scholars, the obstacles against constructing an efficacious l. l. derive from the difficulty of resolving two orders of problems: one relating to the choice of the premises; the other to their structure.

As regards the former issue, of enormous influence has been the work of Hans Kelsen (see above all *General Theory of Law and State*, Cambridge 1945, It. trans. by S. Cotta and G. Treves, Milan 1963). For the Austrian jurist, what constitutes a valid legal norm is given by its formal features – being endowed with a sanction, and being pronounced by a legitimate power – as well by the overall effectiveness of the legal order of which it is part. The jurist is thus provided with the means to judge with certainty: a) whether or not a given prescription possesses the features of a legal rule; b) the fitness of that prescription to serve as the premise for further reasoning. From this perspective, whilst *I. l.*, furnishes useful instruments with which to identify a valid rule, it does not suffice to address issues concerning interpretation of that rule, nor the relationship among the contents of different rules.

This brings us to the second order of problems, which concern two structural characteristics of *I. ps.*, viz.: A. They are formed of prescriptive statements that, unlike indicative (or declarative) statements, cannot be predicated as true or false. Hence, *I. ps.* cannot be derived from indicative propositions (according to Hume's Law), nor can the same inferences that hold among indicative propositions be established among *I. ps.* B. although the language of *I. ps.* adopts a specific terminology, as recently shown exhaustively by Mario Jori (*Libertà di parola e protezione dei dati*, in A. Artosi et al. (eds.), *Problemi della produzione e dell'attuazione normativa*, II, Bologna 2001, pp. 369-409), it is irremediably elastic, vague, and devoid of the unambiguity that only symbolic or highly formalized languages possess.

Without gainsaying Kelsen's contribution, the above-mentioned difficulties have been mainly addressed by importing, and applying to legal norms, elements of deontics (the discipline which analyses prescriptive propositions) (v. DEONTIC LOGIC). The first of them is the distinction, introduced by Richard M. Hare (*The Language of Morals*, London 1952, It. transl. by M. Borioni, Rome 1968) between 'phrastic' and 'neustic': the former term denotes action susceptible to description and which is the object of the prescription; the latter denotes the modalities in which the action is predicated. Georg H. Von Wright (*Deontic Logic*, in "Mind", LX, 1951) and others – developing insights which reach back to Aristotle – identified four of these modalities: permitted, forbidden, obligatory, indifferent. Thus, by specifying which is the phrastic in a proposition and how it declines the neustic, one can compare different norms and describe their relationships with logical criteria. (E.g.: "touching the door" – phrastic – "is forbidden" – neustic = A; if opening the door

necessarily implicates touching it, A implicates the rule that it is forbidden to open the door”, while it contradicts the rule “open the door”, etc.).

The analysis of prescriptions has given legal thought essential criteria with which to determine the meaningfulness of every discourse on norms. But it has not produced a model of l. l. generally endorsed by scholars and applied by experts. The meanings of the deontic modalities are not always clearly and unanimously defined among theorists; in any case, the use of deontic tools is not enough to remedy the structural vagueness of legal language.

These considerations – amongst others – have induced some scholars to turn to deontics once again, and specifically to that branch of it termed “logistics” (v.), which seeks to translate prescriptive language in general, and the predicative modes in particular, into a precise symbolic language. This has led to an endeavour – contemporaneous with the researches of Von Wright, as Eduardo García Màynez (*Introducción a la logica jurídica*, Buenos Aires 1951) testifies – finally to give rigour and unambiguity to the terms of l. ps., and to formalize the work of jurists to the point, if possible, that their language is entirely axiomatized.

Although this endeavour has given rise to refined studies, such as those by Luigi Ferrajoli (*Teoria assiomaticizzata del diritto: parte generale*, Milan 1970), they have been largely unused by jurists, both in their theoretical analyses and in their forensic work. This is not due to contingent reasons, or to the difficulties of learning the symbolic language. It is rather due to a question of principle which applies to everything that has been said about deontics: symbols (but also all attempts to attribute rigid and constant meanings to the terms of l. ps) are abstractions from experience; they denote phenomena that – as in the case of geometric figures – never actually occur. Yet the jurist instead needs to represent, and to qualify by means of l. ps., concrete occurrences: those which in the world of phenomena always possess specific features and are never repeated in identical form. The geometrician’s concern is to depict something that, though it does not occur, can be hypothesised as constant in every situation. Yet jurists instead want to depict the specificities of events, with the consequence that they can never reach sufficient agreement on the axiomatizations to apply to phenomena.

Hence the position of Chaim Perelman (v.) has found wider acceptance among jurists, who have often complained that the distance of their language from mathematics is an irremediable ‘defect’ (see AA.VV., *Teoria e tecnica dell’interpretazione*, Ufficio Studi del Consiglio Nazionale Forense, Milan 2003). Perelman, by extending to legal reasoning (*Logique juridique*, Brussels 1962) what he

argued in general concerning all discourses expressed in natural language, resolutely denies that l. ps. can stand in a logical relationship and lead to a necessary conclusion. However, he admits that their formulation is not arbitrary, in that its purpose is to produce a certain effect in the listener, namely persuasion. The means to elicit this effect, according to Perelman, are those which pertain to what since antiquity has been generally termed ‘rhetoric’ (v.). Produced with such criteria is a series of arguments (as distinct from proofs, which pertain only to the mathematical disciplines) which are worthy of note when their structure and their efficacy are recurrent and observable. Perelman identifies a large number of arguments and groups them into broad families according to whether they proceed in similar manner to logical reasoning, by induction or by falsification. He stresses, however, that arguments are more persuasive, the more they imitate – without ever possessing the same rigour – scientific proofs.

This return to rhetoric as a means to direct l.ps. towards an end seems amply justified when by ‘rhetoric’ is meant the method which organizes propositions of natural language to secure a certain outcome. Doubts can be raised, however, concerning the congruence of this result; one may ask whether it must necessarily reside in persuasion as defined by Perelman.

It has been pointed out (see e.g. Tecla Mazzaresse, *Forme di razionalità delle decisioni giudiziali*, Turin 1996) that rigorous logical connections are excluded from ordinary language by a rationalistic-formalistic prejudice. And also a prejudice is the idea that linguistic terms have univocal meaning only when that meaning remains the same in different times and places. In fact, communicative experience attests that when vague terms are opportunely associated (whether they are expressly stated or implicitly present in the culture and language of the interlocutors), they specify each another: in this way they are able, in a certain situation, to mark out a particular object as unequivocally different from all the others present. Of course, the vague term is unambiguous only relatively to a specific context.

Yet this suffices to look with interest at the teachings of classical thought, for which also rhetorical devices – especially in forensic activity - can produce a *locally valid* premise (protasis) from which a conclusion *irrefutable*, in a given context can be derived. On this view there is a criterion for a protasis to be considered valid and therefore worthy of selection. This criterion – necessary but not sufficient, as we shall see – requires that the premise be constructed as dependent on knowledge which a certain audience, in a certain context, cannot reject; if it is thus dependent (in the sense that will be clarified) on incontrovertible knowledge, the protasis too becomes irrefutable.

On the other hand, it is possible to defend, and not reject, only knowledge that can be expressed in univocal terms (here too, in the sense and within the limits stated below), because an authentic dependence relationship can only hold between univocal discourses. Accordingly, in the classical theory, the criterion of dependence is intended to resolve the two problems that thwart, in modern culture, construction of an efficacious I. I.: the fundamental problem (what premises to adopt in different situations) and the semantic problem (how to make a premise sufficiently univocal so that a necessary conclusion can be derived from it).

In order to specify the dependence criterion more precisely, we may state that a premise is valid when it satisfies the following three conditions.

A. The premise must respect its nature which connects inseparably with its function. The rhetor deals with events: s/he therefore does not have the means with which to sustain a premise of principle; nor can s/he assume as protasis a universal predication – with which one defines a class of objects by stating all and only the elements that belong to it. What is stated in this way (consider a geometric definition: for instance that a triangle is a three-sided polygon) never actually occurs. Hence the protasis can only be a *generalization*: i.e. the representation of a series of phenomena which mentions some of their shared properties that are recurrently associated in experience, so that their frequency is recognizable, and recognized by the audience. (In every moment of experience, it is because of a generalization previously present in our minds that we recognize a given book as a book, a given discourse as a discourse, etc. The generalization must be made explicit in controversial cases: when, that is, there is discussion on how to classify a given object). The generalization does not in itself furnish the means with which one can always decide whether or not a certain object is comprised in it. Nevertheless, it can constitute a sufficiently univocal, and locally valid, protasis when it satisfies the further two conditions below.

B. As the premise defines a series of occurrences, it must state a set of properties that the audience is able neither to increase nor to decrease without the premise becoming confused. Confusion arises when, owing to the characteristics (properties) attributed to them, the elements of a series are not distinct from those of another series, when the audience has assumed the latter as opposite to the former. (The property of legibility cannot be removed from the definition of ‘book’ where – for example to determine the extent of a legacy – it is assumed to distinguish books from other objects which have only the form of a book).

C. The premise must be able to ‘include’ the particular case in discussion. Inclusion occurs when: a) the particular occurrence is recognized by the audience, who attributes to it not solely, but *at least*, the properties named in the initial generalization; b) the specific properties of the occurrence appear irrelevant to the audience; that is, they are incapable of characterizing a series opposite to that represented in the premise. (In a group of books part of a legacy, it is irrelevant that one of them is bound with gold trim: where it is assumed that the testator has not differentiated the books for their antiquarian value, the series ‘books of value possessed by the *de cujus*’ is not opposed to the series ‘books possessed by the *de cujus*’).

When these three conditions hold, the audience cannot reject, if not groundlessly, the protasis, which can be constituted, indifferently, by the redefinition of a normative case, by an interpretation of it, by the generalization of certain phenomena in view of a normative definition of one of them. And just as the audience cannot reject the premise, so nor can s/he reject, without contradicting him/herself, that it derives from an inference made according to the following scheme. If A is a series of occurrences defined by the properties a, b, c, and x is an occurrence with at least the same properties, x is an exemplar of A and it has the same status as A (if A is forbidden, obligatory or permitted, so too is x; if A defines the objects of a legacy, also x is bequeathed).

From this perspective, l. l. is constituted by criteria with which, via the principle of identity and non-contradiction in reference to the assumptions present in a given setting, the rhetor-jurist achieves and defends the unambiguity of a certain generalization posited as the premise, and the necessity of the conclusion derived from it.

A very recent use of the l. l. is made in artificial intelligence and law (v.) the discipline which deals with the criteria suited to constructing an online information network on l.l.

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