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Norms and Novelty: Reflections on Legal Knowledge, Norms and Evolutionary Systems[2]

1. Introduction: two exotic questions

Consider this question: did the French tribunal of peace have jurisdiction over a guarantee claim for a shipment of goods from France to Morocco in 1925? If you have no idea about that, you are not alone. I had no idea either. Let me add some information and reframe the question as a comparative one: Was there a difference in that respect between Morocco and Algeria? Was a shipment of goods from France to Algeria under the same regime as a shipment from France to Morocco? I didn't know before I randomly opened an old issue of a legal journal and read about a judicial decision on that.[3] There you find that on 4 March 1925 the Civil Tribunal of the Seine established that, based on Articles 5–6 of the French law of 12 July 1905, the jurisdiction of the tribunal of peace was limited to shipments of the continental service, to Corsica, Algeria and Tunisia, and for the rest the administrative courts were competent.

I have no idea yet of why shipments to Morocco were under a different regime compared to shipments to Corsica, Algeria and Tunisia. Perhaps because of the greater distance from France? However, I am not going to inquire into that. What I wanted to do, was to pick up randomly a legal question and ask it to readers. I assume that none of the readers knew the answer. The reason can be put simply like this: it was just a matter of positive law. More in particular, it was a question of procedural law, of competence distribution between different courts and tribunals, and these legal matters are notoriously plagued by complications and intricacies that only the expert lawyer can handle. In addition, it was one century ago. To answer now a question like that you need very specific knowledge of French legal history.

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[2] The ideas presented here have had a long incubation and development. For a pragmatist understanding of normative novelty, the work builds on G. Tuzet, *Norme e novità* [Eng. *Norms and Novelty*], "Annali dell'Università di Ferrara" 2002/16, pp. 243–252; and G. Tuzet, *Norme e novità. II* [Eng. *Norms and Novelty. II*], "Annali dell'Università di Ferrara" 2003/17, pp. 167–183, eventually put together as chapter 6 of G. Tuzet, *Dover decidere. Diritto, incertezza e ragionamento* [Eng. *Having to Decide. Law, Uncertainty and Reasoning*], Rome 2010; and, for a discussion on the epistemic novelty of norms, the work builds on G. Tuzet, *The Epistemic Novelty of Norms*, "Phenomenology and Mind" 2017/13, pp. 158–165.

[3] See: "Revue de droit maritime comparé" 1925/3, p. 555.

Note that the comparative reframing of the question made it more tractable. If I ask whether there was a difference between Morocco and Algeria with respect to guarantee claims for shipments of goods, you are likely to start wondering about the similarities and differences between the two countries, so as to imagine what could have been more relevant to the point. This is not possible if I simply ask you whether the French tribunal of peace had jurisdiction over a guarantee claim for a shipment of goods from France to Morocco in 1925.

Let me now take a different example and ask you another question. Did Ottoman civil law in 1865 apply to both sexes the same criteria for being a minor? Again, it's a question I have chosen randomly by opening an old legal publication. I guess readers have two different intuitions on that. On the one hand, some may think that that was a society which traditionally discriminated women; as a consequence, those ones may think that Ottoman law discriminated women in that respect too, by setting a different threshold, or different criteria for them. On the other hand, some may notice that the question is about Ottoman civil law, not religious law; as a result, it wouldn't be utterly surprising to find that the same criteria and the same threshold were established for both sexes. So, what is the answer? Was the threshold the same for both sexes? If so, what threshold? And, given that legal rules often come with exceptions, where there any exceptions in that respect? If so, what exceptions?

The source I consulted[4] reports that Article 95 of the Ottoman civil law, arranged according to the order of the Napoleon Code, made no such difference. Each individual of both sexes was considered a minor up to the expiration of the 16th year of age, unless signs of puberty appeared before that time. So, the same threshold and the same possible exception were established.

The Ottoman question is somehow less outlandish than the Morocco one. It can be taken for certain (or almost so) that a minority age threshold exists in any legal system, given the constitution of human beings and their development over time. What is less predictable is the exact threshold in a given legal system and, as to our question, whether it changed according to sex. Again, these are matters of positive law across time and legal systems.

The reason why I have taken those questions at random is to reflect on how we acquire legal knowledge. I exclude we can have *a priori* knowledge about such issues. Neither speculative reflection nor any other *a priori* method can indicate you the right answer to them. Legal knowledge of such questions is *a posteriori*. Being matters of positive law, in order to learn about them one must consult the relevant sources. These can be the normative provisions themselves (possibly coupled with information about the ways they were interpreted and applied) or the scholarly works that give information on them. Philosophically speaking, the kind of knowledge that one so acquires is propositional and is basically transmitted through testimony.[5]

Next, I think we need an explanation of why we can know such things only in retrospect. So many questions of the sort "Is it true that there was a norm so-and-so?" receive an *a posteriori* answer because the law is largely *contingent*. Positive law changes across time and space. This means that legal systems are characterized by *novelty* as a fundamental feature. Call this the "novelty claim". Novel institutions emerge, new norms are enacted, novel interpretations of earlier materials are suggested and developed, and so on.

[4] D. Gatteschi, *Manuale di diritto pubblico e privato ottomano* [Eng. *Handbook of Ottoman Public and Private Law*], Alexandria 1865, pp. 403–404.

[5] Addressing critically the view that legal knowledge is practical, as being a form of knowing-how, and claiming it is propositional, being a form of knowledge-that, see: G. Tuzet, *Is Legal Knowledge Practical?*, 2020 (unpublished).

In this respect, we can see legal systems as evolutionary. The process of legal change is not driven by chance but by the attempt to face ever new problems and changing circumstances. This supports a view of legal systems as adaptive and evolutionary, as classical pragmatism suggested in the context of contemporary philosophy.

The scope of the novelty claim can be limited by two considerations: there are norms that are inferable from others, and there are norms that are more or less constant across systems. Take a legal system whatsoever: it is not surprising to find it has a norm against homicide. This resonates with Hart's claim on the "minimum content of natural law".[6] The contingent periphery has perhaps a necessary core. The Morocco question is farther from the core than the Ottoman one.

So, the starting idea of the paper was to look at the way we learn about legal norms, as a contribution to an understanding of their nature. I believe it is pointless to argue about the nature of norms without paying any attention to what we do or experience when we learn about them. The conclusion of the argument will be that legal norms, as contingent, belong to evolutionary systems.

Here is how the paper proceeds. Section 2 specifies the novelty claim by distinguishing two kinds of novelty, ontological and epistemic, and recalls some of the contributions to this that classical pragmatism made. Section 3 addresses the issue of whether there can be inferences between norms; the issue is also known as Jørgensen's dilemma, and I contend that the true problem is explanatory, since such inferences appear to be quite natural to our mind and are certainly entrenched in our reasoning practice. As legitimate inferences, they can give us legal knowledge. This knowledge, however, does not exhaust all we can know about a legal system. The Morocco and Ottoman question were supposed to suggest this. Section 4 distinguishes two degrees of novelty, absolute and relative, and connects them to the inferences we make. Section 5 views legal systems as dynamic and evolutionary, which limits what inference can tell us about the law. Section 6 concludes by summing up and suggesting further research questions.

Some caveats are in order here. No doubt, we need a preliminary understanding of what we mean by "norm". I propose to start from a definition of "norm" as the content of a prescriptive sentence.[7] This definition accounts for the symmetry between propositions and norms in the respect of sentences having content. Propositions are the content of descriptive sentences. Norms are the content of prescriptive sentences, i.e. the content of legal provisions, technically speaking. For simplicity's sake I will leave to one side interpretive issues. No doubt, we also need to differentiate between the external viewpoint of the observer learning about law and the internal one of the participant creating law, or applying it, or complying with it. I will basically adopt the former viewpoint, since I focus on legal knowledge and also because to apply the law or comply with it intentionally one needs the relevant legal knowledge.

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[6] H.L.A. Hart, *The Concept of Law*, Oxford 1961, chapter 9.

[7] Cf. the *hyletic* conception of norms, contrasted with the *expressive* conception, in C.E. Alchourrón, A.A. Bulygin, *The Expressive Conception of Norms*, in: R. Hilpinen (ed.), *New Studies in Deontic Logic*, Dordrecht 1981, pp. 95–124. See also: E. Bulygin, *Norms and Logic: Kelsen and Weinberger on the Ontology of Norms*, "Law and Philosophy" 1985/4, pp. 146–148; and, among others, R. Guastini, *Interpretare e argomentare* [Eng. *Interpreting and Arguing*], Milan 2011, pp. 63–65. If the hyletic/expressive distinction is reformulated as a semantics/pragmatics distinction (P.E. Navarro, J.L. Rodríguez, *Deontic Logic and Legal Systems*, Cambridge 2014, p. 66ff) and this is taken as an alternative, I think it is a false one. Normative language, as any kind of language, can be studied from three perspectives at least: syntactic, semantic, pragmatic. Each perspective throws light on aspects that the others hardly see.

2. Two kinds of novelty: ontological and epistemic

Let me specify the novelty claim. Novelty comes in different kinds. One is *ontological*; every time a new entity comes to existence it is an instance of ontological novelty. This encompasses things that belong to the natural world (e.g. animals, viruses, earthquakes) and things that belong to the social one (e.g. contracts, firms, revolutions). Next, every time a cognizant subject learns something they didn't know before, this constitutes an *epistemic* novelty for that subject. Learning now about the 1865 Ottoman criteria for being a minor constitutes an epistemic novelty.

Furthermore, there are different *degrees* of novelty applying to each of its kinds. Below I shall distinguish *absolute* from *relative* novelty (section 4).

To make the picture a bit more complex, notice that novelties in the social world are typically carried out after having been the object of an intentional state (with the exception of unintentional social phenomena, of course). This means that some form of *mental* novelty is antecedent to the existence of the thing in the social world. Consider Paul Valéry's experience when he contemplated Stéphane Mallarmé's *Coup de dés* for the first time.[8] The originality of the work struck Valéry as extraordinary. The poem, originally written in 1897, was a combination of free verse and unusual typographic layout. It was spread over twenty pages, in various typefaces, amidst liberal amounts of blank space. It was an absolute epistemic novelty for Valéry when he saw it (before, he couldn't even imagine a poem written like that). The poem itself was an ontological novelty, but first of all it was somehow in the author's mind, as a mental kind of novelty, even if its form was fully defined only by writing and publishing it. *Mutatis mutandis*, this applies to law too. Most legal norms start as the content of intentional states, then undergo some process of enactment and become knowable.

The classical pragmatists (Charles Sanders Peirce, William James, George Herbert Mead and John Dewey) gave an account of the world as characterized by evolutionary processes. Peirce and James focused especially on the natural world and the world of human experience. Mead and Dewey extended their reflections to the social and legal world. Peirce provided a number of categories to account for the phenomena of novelty, clash and continuity, within the framework of an *a posteriori* metaphysics.[9] James gave an account of mental phenomena as emergent, within the framework of a "pluralistic universe".[10] Mead tried to capture the evolution of mental and social phenomena alike, through the concept of emergence and on the model of the construction of the "self".[11]

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[8] P. Valéry, *Œuvres* [Eng. *Works*], J. Hytier (ed.), Vol. 1, Paris 1957, pp. 622–630.

[9] See especially the papers Peirce wrote in the 1880s and 1890s (the most important are in C.S. Peirce, *The Essential Peirce. Vol. 1 (1867–1893)*, N. Houser, C. Kloesel (eds.), Bloomington–Indianapolis 1992; C.S. Peirce, *The Essential Peirce. Vol. 2 (1893–1913)*, Peirce Edition Project (ed.), Bloomington–Indianapolis 1998). *Firstness*, *Secondness* and *Thirdness* are his best known categories, but not the only ones (he also discussed, among others, the topic of "evolutionary love"). Firstness is in Peirce the category of radical novelty, but some forms of radical experience (like a religious conversion, or falling in love) have features of Secondness. Cf. G. Tuzet, *Two Concepts of Experience: Singular and General*, "Pragmatism Today" 2018/9, pp. 132–144. See also: C. Tiercelin, *Peirce on Norms, Evolution and Knowledge*, "Transactions of the Charles S. Peirce Society" 1997/33, pp. 35–58; C. Tiercelin, *Le ciment des choses. Petit traité de métaphysique scientifique réaliste* [Eng. *The Cement of Things. A Small Treatise in Realist Scientific Metaphysics*], Paris 2011.

[10] See especially: W. James, *A Pluralistic Universe* (1909), Cambridge 1977; W. James, *Some Problems of Philosophy* (1911), Cambridge 1979. Cf. M. Bella, *Novelty and Causality in William James's Pluralistic Universe*, "European Journal of Pragmatism and American Philosophy" 2019/11, pp. 1–24.

[11] See: G.E. Mead, *Mind, Self, and Society. From the Standpoint of A Social Behaviorist* (1934), Chicago–London 1967. What constitutes the "I" as over against the "me" is the novelty of the individual's replies to the social situation involved. "The novelty comes in the action of the 'I', but the structure, the form of the self is one which is conventional" (G.E. Mead, *Mind*..., p. 209). In Peirce's terms the "I" is a form of Firstness, while the "me" is a form of Thirdness.

Dewey, building on his Hegelian and Darwinian premises, stressed the phenomenon of continuity in the history of institutions.[12] In this last picture, social institutions and legal norms have an adaptive function. We need them to face new problems.[13] New facts can induce new needs and these can induce new norms,[14] with the proviso that some adaptation is intentional and some is not (when it is not it closely resembles biological adaptation in terms of functions).

Evolutionary accounts often connect to instrumentalism and even if the former may be *descriptively* falsified, the latter can be maintained in *normative* terms: given an end, practical reason requires us to substitute ineffective with effective means. The word changes continually, and often unpredictably. In our social experience legal systems are part of the process. Contingencies show up, new needs and new problems emerge, novel solutions are found, and so on. Notice that some new problems are unpredictable. The 2020 pandemic situation (Covid-19) had not been predicted and was hardly predictable, unless in very vague terms echoing Nostradamus' prophecies (as "One day a new virus will generate a dreadful pandemic on the planet").[15] Legal systems arrange measures to face the pandemic, try to use different ones, and change them if they prove ineffective.

Law is part of the process in that legal norms are usually adopted to the purpose of securing social goods, achieving social ends, fixing social problems. Law is a means in this respect. But less obviously law can be a part of the process as being the problem to solve. Legal institutions and norms become outdated and unable to achieve the purposes they were designed for, or unable to perform the functions they were developed and selected for. Then social groups and individuals need to elaborate new norms and institutions; and the old ones can exert a sort of resistance to change. Legal hurdles frequently stand in the way of social change.

It is hard to say to what extent there is radical change and to what there is continuity. Social phenomena vary significantly across time and places. However, it can be taken for granted that novelties occur. The world is neither static not constantly reproducing the same things.

In an early paper on novelty and emergence it was claimed that the notion of novelty is compatible with any kind of world – mechanical or living, determinist or indeterminist, etc. – so that the notion has no philosophical importance in settling issues about our

"This brings out the general question as to whether anything novel can appear. Practically, of course, the novel is constantly happening and the recognition of this gets its expression in more general terms in the concept of emergence. Emergence involves a reorganization, but the reorganization brings in something that was not there before. The first time oxygen and hydrogen come together, water appears. Now water is a combination of hydrogen and oxygen, but water was not there before in the separate elements. (…) The common language is there, but a different use of it is made in every new contact between persons; the element of novelty in the reconstruction takes place through the reaction of the individuals to the group to which they belong" (G.E. Mead, *Mind*..., p. 198).

[12] See e.g.: J. Dewey, *Anthropology and Law* (1893), in: J.A. Boydston (ed.), *The Early Works of J. Dewey*, Vol. 4, Carbondale 1971, pp. 37–41. "Every new institution is, like the organ of an animal, an old one modified. Continuity is never broken; the old is never annihilated at a stroke, the new never a creation *ab initio*. It is simply a question of morphology. But what controls the modification is the historic continuity in the practical usefulness of the institution or organ in question" (J. Dewey, *Anthropology*…, pp. 40–41).

[13] On law and evolution in a sociological perspective cf. J. Carbonnier, *Flexible droit* [Eng. *Flexible Law*], Paris 1983, chapter 1.

[14] B.N. Cardozo, *The Nature of Judicial Process*, New Haven–London 1921, pp. 156–157.

[15] As Wikipedia reports, Nostradamus (1503–1566) was a French astrologer, physician and reputed seer, who is best known for his book *Les Prophéties* (1555), a collection of 942 poetic quatrains allegedly predicting future events. The contemporary believers think he predicted even things like the attempted assassination of Pope John Paul II and the fall of the Berlin wall. I guess there are people who believe he predicted Covid-19 too. See: *Nostradamus*, en.wikipedia.org, https://en.wikipedia.org/wiki/Nostradamus, accessed on: 14 March 2021.

kind of world.[16] As I see the problem, novelties (biological, mental, social, technological, institutional) come to being undoubtedly, but not any kind of world conception explains novelties as well as any other. Is a determinist conception of the world a good explanation of novelty? Is it as good as an indeterminist conception? We must find the *best explanation* of the phenomenon of novelty. This is not what I will try to do here, though; it goes beyond my reach. I will rather discuss the issue of epistemic novelty as related to law. You had some of it when you learned the answers to the Morocco and Ottoman question.

Next, what about epistemic novelty *as such*? In a very broad sense, it is the novelty of what comes to knowledge. In this sense, anything which comes to knowledge is epistemically novel (in the different senses of knowing-of, knowing-how, knowing-that: a new perceptual cognition, a new skill or ability, a new justified true belief). More strictly, if we consider epistemic novelty as the novelty of justified true beliefs (knowing-that), we must say that it has to do with belief acquisition.[17] A belief is acquired in the belief set of subject S, if S comes to believe it and in their belief set there is no belief having the same content.

So, the belief that *p* constitutes an epistemic novelty for subject S when: 1) S acquires in their belief set the belief that *p*; 2) it is true that *p*; 3) the belief of S that *p* is justified.[18]

Next, what about the epistemic novelty *of norms*? As to norms, a norm *N* constitutes an epistemic novelty for S when: 1) S acquires in their belief set the belief that *N* is the case; 2) it is true that *N* is the case; 3) the belief of S that *N* is the case is justified.

If that is correct, knowledge of norms obtains in propositional terms (it is a form of knowing-that); and it is just *a posteriori* if you have no means to infer it in advance. But in some contexts you can so infer, and I will argue that different inferences determine different degrees of epistemic novelty. This helps distinguish kinds of norms and normative systems.

3. Knowledge, inference and norms

How do we know that a certain norm is the case? Here I use the notion of knowledge in a dynamic sense: I am less interested in epistemic states as such (S knows that *p*) than in epistemic acquisition (S comes to know, learns, is informed, that *p*). So, I am wondering about the kind of epistemic acquisition we experience when we come to know that a certain norm is the case. I focus on legal norms, but some of the following thoughts may concern other norms too.

Suppose we learn that Anastasia, living in Istanbul in 1865, had to be legally treated as a minor because she was just thirteen and did not show signs of puberty. Can we infer a general norm from this and other individual cases? Or, assuming we know the general norm, can we infer from it how Anastasia ought to be treated? If we can, we can have some *a priori* knowledge of norms.

The basic question is whether there are inferential relations between norms. If there are not, one cannot have legal knowledge by inference. If there are, one can have some

[16] W.T. Stace, *Novelty, Indeterminism, and Emergence*, "The Philosophical Review" 1939/48, pp. 296–310.

[17] About belief acceptance, cf. P. Gärdenfors, *Knowledge in Flux: Modeling the Dynamics of Epistemic States*, Cambridge 1988. Notice that acceptance is stronger than acquisition, and can hardly apply to novelties inferred by abduction, i.e. by hypothesis.

[18] To avoid complications I do not discuss Gettier-style objections (see e.g.: R. Nozick, *Philosophical Explanations*, Cambridge 1981, chapter 3). I just claim that the conditions I sketch are necessary.

such knowledge. The knowledge of norms would be completely *a posteriori* in the first scenario, whereas in the second it would be possible to have some *a priori* knowledge of norms. In the first scenario it is basically testimony that gives knowledge of norms; in the second it can be inference.

If the individual norm that Anastasia ought to be treated as a minor can be inferred from the general norm expressed by Article 95 of the Ottoman civil law and the fact that Anastasia is thirteen and lives in Istanbul, this makes the individual norm knowable in advance. This has important consequences: it makes sense of the institutional doctrine of the separation of powers and the view that judges are supposed to apply the existing and knowable law; they are not supposed to create new law.

But the whole question seems to depend on whether there are inferential relations between norms. Jørgen Jørgensen addressed the dilemma consisting, on the one hand, in the standard conception of inference as a relation between indicative sentences (either true or false) and, on the other, in our disposition to formulate inferences with imperative sentences (neither true nor false); he concluded that imperative sentences cannot be part of inferences, but indicative sentences describing their content can.[19] Many logicians, after him, denied that norms can be part of inferences; others resisted this skeptical conclusion.[20]

Before going into a brief discussion of Jørgensen's dilemma, let me point out that it has two horns but more than two solutions.

Riccardo Guastini claimed that positive solutions to the dilemma do not depend on common-sense intuitions but on different conceptions of normative language.[21] He distinguished three such conceptions: 1) norms are propositions used in a prescriptive function (logic applies to them *qua* propositions); 2) norms are performative utterances of deontic sentences (logic applies to them since valid performatives make true the deontic sentences); 3) norms are independent of human prescriptive acts (logic applies to them since they have truth-values).[22] Guastini contended that the three disregard the normative character of norms, since they take norms to have truth-values or take into consideration only the content of normative language and not its prescriptive function.

More recently, Guastini has distinguished six solutions to the dilemma:

1) a natural law view of norms with truth-values;
2) a legal positivist view of norms without truth-values (*ergo*, there is no logic of norms);
3) the illusory view of an isomorphism between norms and normative propositions (see section 5 below on the dynamic nature of law in the Kelsenian sense);

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[19] J. Jørgensen, *Imperatives and Logic*, "Erkenntnis" 1938/7, pp. 288–296. Cf. A. Ross, *Imperatives and Logic*, "Theoria" 1941/7, pp. 53–71.

[20] Cf. among others: N. Rescher *The Logic of Commands*, London 1966; G. Kalinowski, *Le problème de la vérité en morale et en droit* [Eng. *The Problem of Truth in Morals and Law*], Lyon 1967; G.H. von Wright, *Is There a Logic of Norms?*, "Ratio Juris" 1991/4, pp. 1–15; A.G. Conte, *Filosofia del linguaggio normativo* [Eng. *Philosophy of Normative Language*], Vol. 3, Turin 2001, pp. 641–644, 832–833; P. Di Lucia, *Normatività. Diritto linguaggio azione* [Eng. *Normativity. Law Language Action*], Turin 2003; E. Bulygin, *Essays in Legal Philosophy*, Oxford 2015, pp. 189–194, 267–271. Notice the family resemblance with the Frege-Geach problem concerning inferences in embedded contexts or inferences with illocutionary mixed sentences. On this problem see: P. Geach, *Assertion*, "The Philosophical Review" 1965/74, pp. 449–465; and, among others, P.E. Navarro, J.L. Rodríguez, *Deontic Logic…*, pp. 34ff, 74ff.

[21] R. Guastini, *Produzione di norme a mezzo di norme. Un contributo all'analisi del ragionamento giuridico* [Eng. *Production of norms by means of norms. A contribution to the analysis of legal reasoning*], in: L. Gianformaggio, E. Lecaldano (eds.), *Etica e diritto* [Eng. *Ethics and Law*], Rome–Bari 1986, pp. 197–201.

[22] For a reduction of deontic logic to alethic modal logic, see: A.R. Anderson, *A Reduction of Deontic Logic to Alethic Modal Logic*, "Mind" 1958/67, pp. 100–103. Cf. G.H. von Wright, *Deontic Logic*, "Mind" 1951/60, pp. 1–15.

4) a logic without truth;
5) the view of incorporating a proposition in each norm (its referential element, to which logic applies);
6) a logic of satisfaction of normative requirements (the solution that Guastini seems to prefer).[23]

Solution 4 has been endorsed by many logicians. Carlos Alchourrón and Antonio Martino propose to define an *abstract notion of consequence* in the first place and the logical connectives secondly.[24] If so, it is not necessary do deny that norms have a logic: they do have a logic, but it is a "logic without truth". That abstract notion of consequence is neither semantic nor syntactic[25] and the meaning of logical connectives and operators is given by *rules of inference* (or rules of use in a context of consequence). [26]

Other scholars have recourse to different logics. Daniel Mendonca presents the problem in four theses:

1) we actually make normative inferences;
2) logical relations are defined in terms of truth;
3) norms do not have truth-values;
4) there are no logical relationships between norms.[27]

Thesis 4, which is inferred from 2 and 3, contradicts thesis 1 which according to Mendonca concerns a "pre-analytical fact". To avoid 4 one must abandon 2 or 3. If, on the other hand, 4 is accepted, one must somehow account for the fact expressed by 1.

Mendonca accepts 1 and 3 and rejects 2 and 4; the rejection of 2 is based on a non-classical logic of a trivalent character where the three values are true, false, and neither true nor false.[28]

Those are just some of the positions on the dilemma. If we look at it from a distance, I think we can consider it as an *explanatory problem*. This forbids any skeptical solution to it and is based on the entrenched and somewhat natural practice of normative inference (Mendonca's "pre-analytical fact"). If so, the dilemma is solvable without relying on the distinction between norms and propositions on norms,[29] namely on the idea that the former cannot be directly inferred but the latter can. In fact, norms can be directly inferred both in case one claims they have truth-values (in substantive terms as Georges Kalinowski,[30] or in minimalist terms as Giorgio Volpe[31]) and in case one argues for a different account of logic (a logic without truth as Carlos Alchourrón and Antonio Martino,[32] or another non-classical logic as Daniel Mendonca[33]).

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23 R. Guastini, *Interpretare…*, pp. 240–251.

24 C.E. Alchourrón, A.A. Martino, *Logic Without Truth*, "Ratio Juris" 1990/3, pp. 46–67.

25 C.E. Alchourrón, A.A. Martino, *Logic...*, p. 57.

26 Along these lines see also: P.E. Navarro, J.L. Rodríguez, *Deontic Logic…*, p. 50ff.

27 D. Mendonca, *Hacia una lógica con y sin valores de verdad. Una respuesta al dilema de Jørgensen* [Eng. *Towards a logic with and without truth values. An answer to Jørgensen's dilemma*], "Analisi e diritto" 2013, p. 137.

28 For critical comments on Mendonca's attempt, see: R. Hernández Marín, *Sobre la necesidad y la posibilidad de la lógica de normas* [Eng. *On the necessity and possibility of the logic of norms*], "Analisi e diritto" 2013, pp. 143–154; G.B. Ratti, *Lógica de tres valores y dilema de Jørgensen. Algunas dificultades básicas* [Eng. *Three-valued logic and Jørgensen's dilemma. Some basic difficulties*], "Analisi e diritto" 2013, pp. 155–162.

29 G.H. von Wright, *Norm and Action*, London 1963.

30 G. Kalinowski, *Le problème...*

31 G. Volpe, *A Minimalist Solution to Jørgensen's Dilemma*, "Ratio Juris" 1999/12, pp. 59–79.

32 C.E. Alchourrón, A.A. Martino, *Logic…*, pp. 46–67.

33 D. Mendonca, *Hacia una lógica…*

So, I do not address the question of which is the best solution to Jørgensen's dilemma. I take it for granted that it has a solution indeed, one that permits the inference of norms. The reason is that, as I take it, the dilemma can be taken as an explanatory problem: how are we to explain the fact that we ordinarily make normative inferences in spite of the logical reservations about it? The skeptical answer denying the possibility of normative inferences is no answer at all to that problem. The more plausible solutions are two: 1) norms do have truth-values; 2) logical and inferential relations hold for normative sentences as well, since logic is not restricted to truth-values and normative sentences have other logical values. Which is the best solution I do not discuss here. But I claim that it is either the first or the second. Otherwise, the problem is removed rather than solved.[34]

4. Two degrees of novelty: absolute and relative

Based on the preceding considerations, let us assume that norms are inferable. How does this impact legal knowledge? The epistemic novelty of a non-inferable norm and the one of an inferable norm appear to be different. The first is a stronger form of novelty. I think we must distinguish different degrees of novelty.

According to *degrees of novelty*, we can make a distinction between *absolute* and *relative* novelty. This distinction was (critically) stated in the early paper I mentioned, in the field of philosophy of science:

> If what is red turns green, then the green is something new. It is a novelty. But this kind of novelty is merely relative. The new elements of such a situation are new in that situation and relatively to that situation. (…) I would only call anything an absolute novelty if it were a phenomenon the like of which had never appeared before in the whole history of the universe.[35]

In this sense, relative novelty concerns specific situations; absolute novelty is independent of them. If the distinction applies to degrees of epistemic novelty we have the following: the content which had never appeared before in the whole history of a knowing subject is absolutely novel, and the content whose novelty is just relative to situations is relatively so.

I think that that distinction is basically correct but too loose to account for more complex phenomena like the novelty of inferable norms. Is an inferable norm being inferred something which had never appeared before in the whole history of a knowing subject? In a sense it is, but in the respect of its being inferable it is a weaker form of novelty than a non-inferable norm, which, being known, really appears for the first time in the history of a knowing subject and had no other means to appear in it. If my guess was right, you had no idea about the Morocco question.

So, can we provide a more precise account of the degrees of novelty? Let me try with a token/type criterion. I refer to the well-known distinction made by Peirce.[36] It

[34] Obviously those solutions do not rule out the possibility of additional inferences between propositions on norms.

[35] W.T. Stace, *Novelty…*, p. 300. Walter Terence Stace confines his distinction to ontological novelty, but his critique (notably of the confusion between *new* and *unexpected*) loses its grip if we distinguish between epistemic and ontological novelty.

[36] Note that Peirce made a further distinction, between *token* and *replica*: the first has a singularity that the second has not; so, two individual norms inferred by deduction from the same general norm are two tokens of the general norm but are not two replicas, while two instances of the letter "A" are two replicas. Cf. e.g. C.S. Peirce, *The Collected Papers of Charles Sanders Peirce*, C. Hartshorne, P. Weiss (eds. Vols. 1–6), A. Burks (ed. Vols. 7–8), Vols. 1–8, Cambridge 1931–1958, Vol. 2 paras. 246, 253, Vol. 4 par. 537, Vol. 8 par. 334. On cognitive and normative types cf. L. Passerini Glazel, *Fitting types*, in: P. Di Lucia (ed.), *Ontologia sociale* [Eng. *Social Ontology*], Macerata 2003, pp. 351–371.

can be applied to epistemic novelty in the following way: the unknown token of an unknown type constitutes an *absolute epistemic novelty*; the unknown token of a known type constitutes a *relative epistemic novelty*.

Consider some examples. Imagine the first European man in Australia seeing some animals. When one saw a kangaroo, one saw an unknown token of an unknown type, an *absolute* epistemic novelty. When one saw a bird, one saw an unknown token of a known type, a *relative* epistemic novelty.

Consider some normative examples now. Imagine a subject, a young boy for instance, who does not know what norms are the case in a library. When he comes to know that in library L_1 using the mobile phone is not allowed, that knowledge constitutes for him an *absolute* epistemic novelty. It is the knowledge of an unknown token of an unknown type. Then suppose he comes to know that also in library L_2 using the mobile is not allowed: that knowledge constitutes a *relative* epistemic novelty. It is the knowledge of an unknown token of an already known type.

But norms, if inferable, have more complex relations than token/type ones. Take Article 95 of the Ottoman civil law. Suppose it is not inferable from other norms. When subject S comes to know that general norm, such knowledge constitutes an absolute epistemic novelty for S. Subject S *did not have any other means* to know it apart from learning (by hearing or reading) what the lawmakers enacted.[37] No *a priori* knowledge of that was possible for S.

Now take the individual norm that Anastasia ought to be treated as a minor. Subject S, provided they have the relevant inferential capacities, can infer that norm from the knowledge of the general norm of Article 95 and the knowledge of the fact that Anastasia is thirteen and lives in Istanbul. When subject S so infers, the inferential knowledge they get constitutes a relative epistemic novelty. Subject S *did have other means* to know it in addition to hearing or reading some sentence about the individual norm: their inferential capacities allowed them to infer that norm from the general one.

To take another example, did you know that according to the 1381 statutes of the butchers of Paris the apprentices of the guild were forbidden to marry a woman who had been, or still was, public?[38] I guess you did not. But now if I tell you that François was an apprentice of that guild you can easily infer that he was not permitted to marry a public woman.

So, the criterion – let's call it *C* – could be the following: given that a non-inferable norm can be known only by hearing or reading about it, and that an inferable norm can be known by other means (notably by performing the relevant inference), the knowledge of a non-inferable norm constitutes an *absolute epistemic novelty*, while the knowledge

[37] Note that I use "enactment" (instead of "statement" and similar words) to mark the performative and authoritative dimension of lawmaking. See: P. Amselek, *Le locutoire et l'illocutoire dans les énonciations relatives aux normes juridiques* [Eng. *The locutionary and the illocutionary in the utterances relating to legal norms*], "Revue de Métaphysique et de Morale" 1990/3, pp. 385–413. Of course knowing the law is different from making it. Cf. A. Marmor, *The Language of Law*, Oxford 2014, chapter 3, on legal prescriptions as speech acts asserting some truth-evaluable content; according to Marmor, it is a self-referential propositional content. Saying so in the law makes it so. I would say that prescriptions certainly have truth-evaluable content; but they do not assert anything. The truth-evaluable content of "Slow down!" is the relevant propositional content, namely that addressees slow down, but the prescription does not assert that they do. Another thing is the proposition "describing" the prescription: there is a prescription requiring its addressees to slow down.

[38] It is reported in P. Dufour, *Historia de la prostitución*, [Eng. *History of Prostitution*], Vol. 2, Barcelona 1870, p. 214. The same applied to barbers and drapers.

of an inferable norm constitutes a *relative epistemic novelty*. Thus, an individual norm inferred from a general one is only novel in the relative sense.[39]

However, should not further distinctions be made according to the kind of inference? Is it not the case that norms being known are absolutely novel in case of ampliative inferences and relatively novel in case of non-ampliative inferences?

The problem of criterion *C* is that it rules out the difference between ampliative and non-ampliative inferences. If any inferred norm is a relative epistemic novelty, both ampliative and non-ampliative inferences draw relative novelties. And this is a serious drawback of criterion *C*.

Taking deductions as non-ampliative inferences, we should consider non-deductive inferences as ampliative. Abduction and induction are both ampliative inferences. They differ in their inferential function: the first can be conceived of as hypothesis suggestion; the second as generalization or, in some accounts, as hypothesis evaluation.[40]

Since *abduction* is an ampliative inference, it is the inference of an absolute epistemic novelty: from an individual, derived norm, the general norm from which it is supposed to derive can be inferred by abduction. Take our subject S. Suppose they come to know that Anastasia must be treated as a minor. Subject S can infer by abduction (i.e. by hypothesis) that a general norm is the case; but S can hardly see *a priori* the details of it (threshold, criteria, possible exceptions).

Similarly for *induction*. The induction of norms can provide absolute novelties: generalizing from individual or particular norms, a general norm or normative principle can be inferred. Take again subject S. Suppose they come to know that Anastasia must be treated as a minor, that Anastasia's little sister must be treated as a minor, that Anastasia's cousin must be treated as a minor, and so on. With a sufficiently large sample of the population, S can approach the actual content of Article 95.[41]

So, while the epistemic novelty of *non-inferable* norms is always *absolute*, the epistemic novelty of *inferable* norms is *absolute* in case of abduction and induction and *relative* in case of deduction.

5. Legal systems as dynamic and evolutionary

What if, contrary to normative expectations, a shipment to Morocco is treated as one to Algeria? What if the legal system does not treat Anastasia as a minor, or François is permitted to marry a public woman? Positive law is not only a matter of normative requirements but also of social facts and authoritative decisions.[42]

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[39] Cf. M.R. Cohen, *A Preface to Logic*, London 1946, p. 11ff on deduction and the need to differentiate psychological and logical aspects. "Psychologically it is obviously not true that the conclusion is always contained in the premises" (M.R. Cohen, *A Preface*…, p. 12).

[40] On the ampliative character of abduction and induction, cf. *Abduction and Induction*, P.A. Flach, A.C. Kakas (eds.), Dordrecht 2000. The distinction between the two inferences is an open issue. Some take abduction as hypothesis generation, and induction as hypothesis evaluation (rather than generalization); see: P.A. Flach, A.C. Kakas, *On the Relation Between Abduction and Inductive Learning*, in: D.M. Gabbay, R. Kruse (eds.), *Abductive Reasoning and Learning*, Dordrecht 2000, pp. 1–33. For a functional characterization of inference, see: I. Levi, *Inference and Logic According to Peirce*, in: J. Brunning, P. Forster (eds.), *The Rule of Reason. The Philosophy of Charles Sanders Peirce*, Toronto 1997, pp. 34–56.

[41] More precisely, to see the interplay of abduction and induction, one can say that induction is not blind generalization but *hypothesis generalization*: before generalizing from cases, subject S must form a hypothesis on the relevant class and criteria. A related point I cannot address here is the inferential role of *prediction*.

[42] This resonates with Alexy's picture of the "dual nature of law", normative and factual, or ideal and real. See e.g.: R. Alexy, *On the Concept and the Nature of Law*, "Ratio Juris" 2008/21, pp. 281–299.

What we have been discussing can be seen as a distinction between different normative systems.[43] Hans Kelsen famously distinguished between *static* and *dynamic* normative systems. The distinction was explicitly stated in his work of 1945, *General Theory of Law and State*,[44] and in the second edition of his *Pure Theory of Law* (*Reine Rechtslehre*),[45] originally published in German in 1960; but the point was already made in the first edition of this book,[46] published in German in 1934. Systems of norms, Kelsen claims, can be distinguished into two different types according to their basic norm, that is, according to the nature of their highest principle of validity. To the different types of normative systems, different types of norms correspond. The norms of the first type – of a *static* system – depend on the basic norm of the system by virtue of their content.

> Norms of the first type are "valid" by virtue of their substance; that is, the human behaviour specified be these norms is to be regarded as obligatory because the content of the norms has a directly evident quality that confers validity on it. And the content of these norms is qualified in this way because the norms can be traced back to a basic norm under whose content the content of the norms forming the system is subsumed, as the particular under the general. Norms of this type are the norms of morality.[47]

The norms of the second type – of a *dynamic* system – do not depend on the basic norm of the system by virtue of their content.

> Norms of the second type of system, norms of the law, are not valid by virtue of their content. Any content whatever can be law; there is no human behaviour that would be excluded simply by virtue of its substance from becoming the content of a legal norm. (…) A norm is valid *qua* legal norm only because it was arrived at in a certain way – created according to a certain rule, issued or set according to a specific.[48]

Kelsen adds that the norms of natural law and of morality are of the first type, since they can be *deduced* from the basic norm of their system:

> the norms of natural law, like those of morality, are deduced from a basic norm that by virtue of his content – as emanation of divine will, of nature, or of pure reason – is held to be directly evident. The basic norm of a positive legal system, however, is simply the basic rule according to which the norms of the legal system are created (…). Particular norms of the legal system cannot be logically deduced from this basic norm.[49]

So, making abstraction from more complex accounts of normative systems, the derived norms of a static normative system are deductively inferable; the derived norms of a dynamic one are not so. What about the epistemic novelty of the norms so determined?

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43 Cf. H. Kelsen, *Introduction to the Problems of Legal Theory* (1932), Oxford 1992; H. Kelsen, *General Theory of Law and State*, Cambridge 1945; H. Kelsen, *Pure Theory of Law* (1960), Berkeley 1967; C.E. Alchourrón, E. Bulygin, *Normative Systems*, Wien–New York 1971; L. Gianformaggio (ed.), *Sistemi normativi statici e dinamici. Analisi di una tipologia kelseniana* [Eng. *Static and Dynamic Normative Systems. Analysis of a Kelsenian Typology*], Turin 1991; P.E. Navarro, J.L. Rodríguez, *Deontic Logic…* On new norms (by promulgation) and the dynamic character of the law, see also: J. Ferrer Beltrán, J.L. Rodríguez, *Jerarquías normativas y dinámica de los sistemas jurídicos* [Eng. *Normative Hierarchies and Dynamics of Legal Systems*], Madrid 2011.

44 H. Kelsen, *General Theory…*

45 H. Kelsen, *Pure Theory...*

46 H. Kelsen, *Introduction...*

47 H. Kelsen, *Introduction...*, p. 55.

48 H. Kelsen, *Introduction...*, pp. 55–56.

49 H. Kelsen, *Introduction...*, p. 56.

In a static normative system, norms *qua* inferable can be known *a priori*; this means that there are no surprises in the derivation, and it also means that, if we consider the difference between ampliative and non-ampliative inferences, norms can figure as absolute epistemic novelties when they are inferred by abduction or induction, and as relative epistemic novelties when they are inferred by deduction.

In a dynamic normative system, instead, there are no deductive guarantees. Recalling the discussion on norms and propositions about them, Michel Troper put it like this:

> If the normative proposition describes a norm in force then, from the legal proposition, "There exists a general norm according to which all thieves must be punished", one cannot deduce the legal proposition, "There exists an individual norm according to which the thief Smith must be punished".[50]

As Kelsen would have put it, the existence of the individual norm only depends on the authoritative act of the judge deciding Smith's case.[51] Similarly for Anastasia, François, and the other characters of our legal stories. This is a feature of positive law and dynamic normative systems.

The Kelsenian distinction is useful to model normative systems. But actual legal systems are more of a mixture of static and dynamic aspects. Especially constitutional systems set strong content constraints on the decisions of legislatures, judges and other authorities. Some of such constraints can be captured by the Hartian "minimum content of natural law". In other words, the dynamic aspects of legal systems are the contingent periphery, what cannot be known *a priori*; the static aspects are the necessary core, knowable *a priori*. But the fact that so large a part of actual legal systems cannot be known *a priori* supports the view that law is largely contingent.

In a less technical sense of "dynamic", legal systems are certainly so. Remember the earlier remarks on evolutionary processes and emergence. Some systems are adaptive and evolutionary as they change to face new problems and needs; legal systems contribute to the taming of the world's complexity.[52] Absolute novelty appears in a world that varies unpredictably. If the world were purely static, or constantly reproducing the same things, no novelty would appear. Instead, absolute and relative novelties (biological, mental, social, technological) occur continually. Unpredictable situations pose a particular challenge to complex systems. On the one hand, complex systems have more resources than simple ones to face unpredictable situations (think again of the 2020 pandemic). On the other, their complexity made of multiple agents, decision layers, organizational structures and so on can generate hurdles to an effective and efficient resolution of pressing problems.

The dynamic aspects of legal systems can generate both satisfaction and disappointment. This can happen if a general norm is considered bad for some reason and individual norms depart from it, or vice versa if individual norms depart from a general norm that is taken to be good. So, in particular, we must guard against wishful thinking.

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[50] M. Troper, *Voluntarist Theories of Law: Ontology and the Theory of Legal Science*, in: P. Amselek, N. MacCormick (eds.), *Controversies about Law's Ontology*, Edinburgh 1991, p. 38.

[51] This counts against a logic of norms *via* a logic of normative propositions. The logic of norms and of norm-propositions are isomorphic only under the assumption of completeness and consistency. P.E. Navarro, J.L. Rodríguez, *Deontic Logic…*, p. 84.

[52] R. Allen, *Taming Complexity: Rationality, the Law of Evidence and the Nature of the Legal System*, "Law, Probability and Risk" 2013/12, pp. 99–113; R. Allen, *Complexity, the Generation of Legal Knowledge, and the Future of Litigation*, "UCLA Law Review" 2013/60, pp. 1384–1411.

We must not take our normative desires as realities. From the idea that there should be a certain norm, one cannot infer by deduction that that norm is part of a dynamic legal system.

To put it differently, we must beware Hume's fallacy in both directions: not only is it wrong to deduce an ought from an is, but also an is from an ought. In a dynamic system you cannot be sure about individual norms even if a general norm is settled. However, abduction and induction work as heuristic inferences that justify hypotheses and generalizations about the norms of a system. For instance, given a set of assumptions about the relevant agents and their set of preferences, one can expect a certain norm to be there, since that norm should be there given the assumptions. Still, if the system is dynamic, it will only be known in retrospect whether that is the case. To restate the point, legal knowledge is largely *a posteriori*.

6. Conclusion

To sum up, this work focused on three sub-topics: legal knowledge, legal norms, and evolutionary systems. The three are interconnected. A reflection on the nature of legal knowledge throws light on the nature of legal norms. Legal knowledge is largely *a posteriori* and it is so because norms are largely contingent. Being a realm of continual change, law has novelty as a fundamental feature. The process of legal change is not driven by chance but by the attempt to face ever new problems and changing circumstances. This supports a view of legal systems as adaptive and evolutionary, as classical pragmatism suggested, with the proviso that some adaptation is intentional and some is not.

Two considerations limit the scope of the novelty claim, however: there are norms that are inferable from others, and norms that are more or less constant across systems.

One the first consideration in particular, notice that when an individual norm is inferred from a general one it is just a form of relative epistemic novelty; when a general one is inferred from individual norms, it is a form of absolute epistemic novelty. Inferability guarantees some content relationship. This has interesting consequences in terms of *responsibility*, as a suggestion for further reflection and research. Take the scenario of a judicial decision: the fact that an individual norm is inferable from a general one implies a definite responsibility for the judge. If the norm is inferable, the judge is just supposed – as we say – to apply the law. If it is not, the judge has to make a different decision and create new law. For analytic purposes different types and degrees of responsibility should be specified. But the general point is simply this: the differences in the novelty of norms determine the differences in the responsibility of the normative authorities. Contrary to what a voluntarist conception of norms may claim, the responsibility of a normative authority depends on the novelty of norms and not vice versa.

Norms and Novelty: Reflections on Legal Knowledge, Norms and Evolutionary Systems

Abstract: The paper has three sub-topics: legal knowledge, legal norms, and evolutionary systems. The three are interconnected. A reflection on the nature of legal knowledge throws light on the nature of legal norms. Legal knowledge is largely *a posteriori* and it is so because norms are largely contingent. Being a realm of continual change, law has novelty as a fundamental feature. The process of legal change is not driven by chance but by the attempt

to face ever new problems and changing circumstances. This supports a view of legal systems as adaptive and evolutionary, as classical pragmatism suggested. However, inference can give some *a priori* legal knowledge.

Keywords: inference, legal knowledge, legal norms, novelty, pragmatism

BIBLIOGRAFIA / REFERENCES:

Alchourrón, C.E., Bulygin, E. (1971). *Normative Systems*. Wien, New York: Springer.

Alchourrón, C.E., Bulygin, E. (1981). The Expressive Conception of Norms. In R. Hilpinen (ed.), *New Studies in Deontic Logic* (pp. 95-124). Dordrecht: Reidel.

Alchourrón, C.E., Martino, A.A. (1990). Logic Without Truth. *Ratio Juris 3*, 46-67.

Alexy, R. (2008). On the Concept and the Nature of Law. *Ratio Juris 21*, 281-299.

Allen, R. (2013). Complexity, the Generation of Legal Knowledge, and the Future of Litigation. *UCLA Law Review 60*, 1384-1411.

Allen, R. (2013). Taming Complexity: Rationality, the Law of Evidence and the Nature of the Legal System. *Law, Probability and Risk 12*, 99-113.

Amselek, P. (1990). Le locutoire et l'illocutoire dans les énonciations relatives aux normes juridiques. *Revue de Métaphysique et de Morale 95*, 385-413.

Anderson, A.R. (1958). A Reduction of Deontic Logic to Alethic Modal Logic. *Mind 67*, 100-103.

Bella, M. (2019). Novelty and Causality in William James's Pluralistic Universe. *European Journal of Pragmatism and American Philosophy 11*, 1-24.

Boydston, J.A. (ed.). (1971). *The Early Works of J. Dewey* (vol. 4). Carbondale: Southern Illinois University.

Bulygin, E. (1985). Norms and Logic: Kelsen and Weinberger on the Ontology of Norms. *Law and Philosophy 4*, 145-163.

Bulygin, E. (2015). *Essays in Legal Philosophy.* Oxford: Oxford University Press.

Carbonnier, J. (1983). *Flexible droit* (5th ed.). Paris: L.G.D.J.

Cardozo, B.N. (1921). *The Nature of Judicial Process*. New Haven and London: Yale University Press.

Cohen, M.R. (1946). *A Preface to Logic.* London: Routledge.

Conte, A.G. (2001). *Filosofia del linguaggio normativo*. Torino: Giappichelli.

Di Lucia, P. (2003). *Normatività. Diritto linguaggio azione*. Torino: Giappichelli.

Dufour, P. (1870). *Historia de la prostitución (vol. 2). Versión castellana de C. Navarro*. Barcelona: Juan Pons.

Ferrer Beltrán, J., Rodríguez, J.L. (2011). *Jerarquías normativas y dinámica de los sistemas jurídicos*. Madrid: Marcial Pons.

Flach, P.A., Kakas, A.C. (eds.). (2000). *Abduction and Induction*. Dordrecht: Kluwer Academic Publishers.

Flach, P.A., Kakas, A.C. (2000). On the Relation Between Abduction and Inductive Learning. In D.M. Gabbay and R. Kruse (eds.), *Abductive Reasoning and Learning*. Dordrecht: Kluwer Academic Publishers.

Gärdenfors, P. (1988). *Knowledge in Flux: Modeling the Dynamics of Epistemic States*. Cambridge: The MIT Press.

Gatteschi, D. (1865). *Manuale di diritto pubblico e privato ottomano*. Alessandria di Egitto: Tipografia della Posta Europea di V. Minasi e C.

Geach, P. (1965). Assertion. *The Philosophical Review 74*, 449-465.

Gianformaggio, L. (ed.). (1991). *Sistemi normativi statici e dinamici. Analisi di una tipologia kelseniana*. Torino: Giappichelli.

Guastini, R. (1986). Produzione di norme a mezzo di norme. Un contributo all'analisi del ragionamento giuridico. In L. Gianformaggio, E. Lecaldano (eds.), *Etica e diritto* (pp. 173-201). Roma-Bari: Laterza.

Guastini, R. (2011). *Interpretare e argomentare*. Milano: Giuffrè.

Hart, H.L.A. (1961). *The Concept of Law*. Oxford: Oxford University Press.

Hartshorne, C., Weiss, P., Burks, A. (eds.). (1965). *Collected Papers of C.S. Peirce*. Cambridge, MA: Harvard University Press.

Hernández Marín, R. (2013). Sobre la necesidad y la posibilidad de la lógica de normas. *Analisi e diritto 2013*, 143-154.

James, W. (1977). *A Pluralistic Universe*. F. Bowers and I.K. Skrupskelis (ed.). Cambridge: Harvard University Press. (Original work published 1909)

James, W. (1979). *Some Problems of Philosophy*. F. Burkhardt, F. Bowers, I.K. Skrupskelis (ed.). Cambridge: Harvard University Press. (Original work published 1911).

Jørgensen, J. (1937). Imperatives and Logic. *Erkenntnis 7,* 288-296.

Kalinowski, G. (1967). *Le problème de la vérité en morale et en droit*. Lyon: Emmanuel Vitte.

Kelsen, H. (1945). *General Theory of Law and State*. Cambridge: Harvard University Press.

Kelsen, H. (1967). *Pure Theory of Law* (M. Knight trans.). Berkeley: University of California Press. (Original work published 1960).

Kelsen, H. (1992). *Introduction to the Problems of Legal Theory* (B. Litschewski Paulson and S.L. Paulson trans.. Oxford: Clarendon Press. (Original work publshed 1934).

Levi, I. (1997). Inference and Logic According to Peirce. In J. Brunning and P. Forster (eds.), *The Rule of Reason. The Philosophy of Charles Sanders Peirce* (pp. 34-54). Toronto: University of Toronto Press.

Marmor, A. (2014). *The Language of Law*. Oxford: Oxford University Press.

Mead, G.E. (1967). Mind, Self, & Society. From the Standpoint of A Social Behaviorist. C.W. Morris (ed.). Chicago and London: The University of Chicago Press. (Original work published 1934)

Mendonca, D. (2013). Hacia una lógica con y sin valores de verdad. Una respuesta al dilema de Jørgensen. *Analisi e diritto 2013*, 135-142.

Navarro, P.E., Rodríguez, J.L. (2014). *Deontic Logic and Legal Systems*. Cambridge: Cambridge University Press.

Nozick, R. (1981). *Philosophical Explanations*. Cambridge: Harvard University Press.

Passerini Glazel, L. (2003). Fitting types. In P. Di Lucia (ed.), *Ontologia sociale* (p. 351-371). Macerata: Quodlibet, Macerata.

Peirce, C.S. (1992). *The Essential Peirce* (vol. 1). N. Houser, C. Kloesel (ed.). Bloomington and Indianapolis: Indiana University Press.

Peirce, C.S. (1998). *The Essential Peirce* (vol. 2). Peirce Edition Project (ed.). Bloomington and Indianapolis: Indiana University Press.

Ratti, G.B. (2013). Lógica de tres valores y dilema de Jørgensen. Algunas dificultades básicas. *Analisi e diritto 2013*, 155-162.

Rescher, N. (1966). *The Logic of Commands*. London: Routledge & Kegan Paul.

Ross, A. (1941). Imperatives and Logic. *Theoria 7*, 53-71.

Stace, W.T. (1939). Novelty, Indeterminism, and Emergence. *The Philosophical Review* 48, 296-310.

Tiercelin, C. (1997). Peirce on Norms, Evolution and Knowledge. *Transactions of the Charles S. Peirce Society* 33, 35–58.

Tiercelin, C. (2011). *Le ciment des choses. Petit traité de métaphysique scientifique réaliste*. Paris: Ithaque.

Troper, M. (1991). Voluntarist Theories of Law: Ontology and the Theory of Legal Science. In P. Amselek, N. MacCormick (eds.), *Controversies about Law's Ontology* (pp. 32-42). Edinburgh: Edinburgh University Press.

Tuzet, G. (2002). Norme e novità. *Annali dell'Università di Ferrara 16*, 243–252.

Tuzet, G. (2003). *Norme e novità, II. Annali dell'Università di Ferrara 17*, 167–183.

Tuzet, G. (2010). *Dover decidere. Diritto, incertezza e ragionamento*. Rome: Carocci.

Tuzet, G. (2017). The Epistemic Novelty of Norms. *Phenomenology and Mind 13*, 158–165.

Tuzet, G. (2018). Two Concepts of Experience: Singular and General. *Pragmatism Today 9*(2), 132-144.

Valéry, P. (1957). *Œuvres* (vol. I). J. Hytier (ed.). Paris: Gallimard.

Volpe, G. (1999). A Minimalist Solution to Jørgensen's Dilemma. *Ratio Juris 12*, 59-79.

von Wright, G.H. (1951). Deontic Logic. *Mind 60*, 1-15.

von Wright, G.H. (1963). *Norm and Action*. London: Routledge and Kegan Paul.

von Wright, G.H. (1991). Is there a Logic of Norms? *Ratio Juris 4*, 1-15.