Legal Abductions

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Abstract. This paper deals with the role of abductive inference in legal reasoning. Both in the determination of the relevant facts and in the determination of their legal consequences abductive inference plays a crucial role, being the first step of such reasoning tasks. Two kinds of legal abduction are distinguished: an *explanatory* one aiming at the reconstruction of the relevant facts and a *classificatory* one aiming at a legal conceptualization of those facts. We concentrate on the first kind, stressing the similarities it has with scientific abduction, notably on the concern of truth. We claim that legal abduction is truth-directed, justice being in the first place *epistemic justice*.

1 Charles S. Peirce and Abduction

Charles Sanders Peirce (1839-1914) calls *abduction* the inference suggesting an explanation. In his early writings instead of *abduction* he speaks of *hypothesis* – see e.g. W1: 180, 266 ff. (1865); W1: 362, 430 ff. (1866); W3: 323-338 (1878). At that time his main purpose is to distinguish, in a kantian way, ampliative from non-ampliative inferences. *Hypothesis* and *induction* are ampliative inferences while *deduction* is non-ampliative, being merely explicatory. The point being the difference between ampliative and non-ampliative inferences, in his early writings Peirce does not always draw a clear distinction between *hypothesis* and *induction*. Yet he says that induction determines a general character while hypothesis permits the knowledge of causes (W1: 428; cf. e.g. CP 5.272-276, 2.624). Nonetheless, he more often uses *hypothesis* to denote a classificatory reasoning, depending on a syllogistic scheme, than a causal, explanatory reasoning. But in his later writings he makes a clear threefold distinction between *abduction*, *deduction* and *induction* – see e.g. CP 7.162-255 (1901); CP 5.14-212 (1903). This threefold distinction follows the methodological principles of scientific inquiry according to him. Every scientific inquiry is constituted by three inferential steps: first, by abduction we suggest an hypothesis explaining a fact; second, by deduction we determine the conceivable consequences of the hypothesis; third, by induction we test the conceivable consequences of the hypothesis verifying whether they correspond or not to real consequences[1].

To sum up for our purposes, *hypothesis* denotes in Peirce's early writings a kind of *classificatory reasoning*, while in his later writings *abduction* denotes an *explanatory reasoning*.

2 Legal Abduction

Legal adjudication presents at least two kinds of abduction. If we take abduction in the proper *explanatory* sense, as being (i) the inference which goes from effect to cause, the 'fact-finding question' in adjudication is a kind of abductive reasoning: from the known facts to the unknown, making hypotheses on what happened. If we take abduction in the *classificatory* sense

[1] Cf. especially [7]. On the logical and semiotic models involved in Peirce's theory of inference see [30].

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of hypothesis, as being (ii) the inference which classifies some actual facts under a type of fact, also the 'rule-finding question' in adjudication is a kind of abductive reasoning: it goes from the characters of the facts accounted for by abduction (i), to the type of fact those characters belong to. This means, in other terms, that abduction (ii) finds the *rule* or the principle that articulates that type of fact and its normative consequences (if fact-P has occurred, then consequence-Q is due). *Legal abduction* in a broad sense is the combination of abduction (i) and (ii).

Following such an abductive phase, the inference that determines the legal consequences of the relevant facts, is, in the main, a *deduction*. In a strict sense, it is the normative phase of legal reasoning: legal deduction determines the consequences that *ought* to follow from the facts ascertained according to some rule or principle. (A deductivist account of legal reasoning, as for example Neil MacCormick's, captures the inference of legal consequences but not the inference of the relevant facts, which is, in the main, abductive[2]).

A warning must be taken. According to Peirce's inferential methodology, no inference by itself is a sufficient condition of knowledge: abductive conclusions in particular need to be tested by further inferential steps (a deductive determination of their conceivable factual consequences, an inductive procedure of testing those consequences). So, in particular, the 'fact-finding question' is in the main an abduction but not an abduction only. This being understood, let us say something more on the two kinds of abduction we sketched.

3 Legal Abduction (i): The Fact-finding

Legal reasoning about the facts has the nature of abduction: it should set out an hypothesis providing, or at least suggesting, a causal explanation of the known effects. It is not false to claim that abduction is the core of the legal process – as Benjamin Cardozo ([5]: 129) said: "the controversy relates most often not to the law, but to the facts"[3].

That the legal process has at his first step an abductive nature, it is a suggestion we take from the writings of Patrick Nerhot, whose very thesis is the likeness of legal and historical inquiry. He has widely shown ([25, 26]) that legal and historical methodology are quite proximate[4]. Both legal and historical inquiry aim at stating the truth of what happened, inferring its causes from its effects – that is, in our opinion, starting from an abductive inference. The problem is that on trial there is usually no possibility to reproduce the facts experimentally, so as to test them by an induction using quantitative methods (cf. CP 2.758-759). They are, as Christopher Hookway ([17]: 50 ff.) calls them, *lost facts*. In general such an hypothesis as the hypothesis concerning the legally relevant facts cannot be proved directly, neither statistically nor experimentally. But it does not follow from that that abduction has no relevance for legal reasoning. A legal-historical hypothesis may be supported by other evidence related to it and capable of proving it indirectly. In the first place, the general aspects of a disputed event can be explained according to some rules connecting general causes to general effects. In the second place, the particular aspects of the event can be reconstructed starting from general assumptions and adding to them any evidence and evaluation concerning the case at hand. Even if a legal-historical hypothesis cannot be directly tested, it can yield a justified belief if it is based on indirect, and adequate, evidence[5].

[2]Cf. [23], chap. 2 (*Deductive Justification*) and chap. 3 (*Deductive Justification – Presuppositions and Limits*).

[3]On legal fact-finding cf. recently [28, 1, 32]).

[4]On historical methodology cf. CP 2.511, footnote 1. It is true that the first Peirce conceives of historical abduction in the somewhat strict terms of archeological method, but the late Peirce develops a richer account of documentary evidence (cf. CP 2.625, CP 7.162-255).

[5]Cf. [33]: 1562-1563 and [28]: 1648) on the notion of *ancillary evidence*. For a general survey of the problem

4 Legal Abduction (ii): The Rule-finding

It is sometimes said it is more difficult to admit the relevance of abduction for the 'rule-finding question'. The rule-finding cannot be naturalized, according to some legal scholars[6]. Yet we believe that the processes leading to the determination of the rule to be applied should be analyzed. Which are the logical and psychological processes involved in the 'rule-finding'?

The expression 'rule-finding' may be misleading: that which is found is not a certain rule immediately, but a rule starting from the characters of the case in hand. Such a case is classified according to some legal concept. Legal rules usually consist in the relation between a legal concept and its normative legal consequences. (To put it differently, between a type of fact and a normative consequence following from it). So a fundamental step to the determination of the legal rule to be applied is the finding of the legal concept instantiated by the case. This finding has an abductive character, starting from the legally relevant factual characters connoting the case. Be the case S presenting the characters P1, P2, P3. If a legal concept M corresponding to such characters exist, the case will be classified as an instance of that concept. This classification is not deductive, but abductive. To be more precise, it is an *hypothesis* in the logical sense given by Peirce to the term 'hypothesis', that is a *classificatory* inference substituting a more general predicate to other predicates less general: if the case S has the characters P1, P2, P3, and the legal concept M has such characters, the case S has the legal character M (cf. CP 2.461-516, 2.704 ff.). At that stage, according to the rules in which such a concept is contemplated, the normative consequences following from that concept should be deduced. Obviously, a problem could be the want of a concept adequate to the particular characters of the case, and the want of a corresponding rule. In such an eventuality, the abduction will have the form of an analogical abduction (cf. CP 6.40, 1.65, 1.69), or it will be a highly creative abduction, producing a new legal concept and a new corresponding rule.

Concerning in particular the *common law* systems, some similar considerations could be developed bearing on the process of determination of a principle of judgment relative to a range of precedents: from the analysis of precedent decisions a rule is abduced, then its consequences are deduced, finally these consequences are tested by induction relatively to other cases[7].

5 Fact-finding in Science and Law

We will concentrate on the first kind of abduction: the one which covers the 'fact-finding question'. We can compare abduction in science and abduction in law, sketching out three similarities. They concern respectively the *explanatory*, *truth-seeking*, and *public* nature of abduction.

(I) Legal abduction is the inference which goes from an effect, legally relevant, to its cause, providing for the *best explanation* of the known effect (as science does). The expression 'inference to the best explanation' denotes indeed a more complex process than the process of finding an hypothesis[8]. It comprehends the evaluation of the hypothesis, so as to choose between rival hypotheses. Legal abduction at the first stage is merely the inference

see [16], especially chapters 9 and 12.

[6] "Peirce's abduction is a powerful instrument to build empirical hypotheses, and it is extremely doubtful that the very concept of an empirical hypothesis could work with a legal (or moral) rule" ([12]: 264, footnote 51). – Notice that the expression 'rule-finding' is narrower but not inferentially different from the larger 'law-finding' – cf. [27].

[7] See [6]. Cf. [14].

[8] Cf. [15, 22, 19].

suggesting an explanation. But in its *ripe* sense it is the inference providing the best explanation of what happened.

(II) It could be said that legal adjudication must only evaluate the *evidence* produced by the parties, and must not push the inquiry beyond that limit. It could be argued in this way that legal abduction does not aim at finding the truth (as science would do). It could be claimed that legal abduction should rather account for the evidence, and not for truth.

So, to scientific abduction another model of inquiry could be opposed, the one whose end is not to find the truth, but only to evaluate the evidence. According to some legal scholars, this model of inquiry is more akin to legal inquiry. This opinion is largely based on the distinction between *adversary model* and *inquisitorial model* of legal process. The fact that the adversary model has today a larger diffusion supports the opinion that truth is not the end of legal process, its goal being otherwise the sole evaluation, by an impartial judge, of the evidence produced by the parties. The distinction between the two models cannot be disregarded, but we believe it to consist in putting different constraints on the patterns of inquiry. What changes is the *breadth* of the inquiry, so to speak, and not its principal *goal*, that is the *statement of truth*, even if in the adversary model some moral, political and legal principles restrain the patterns of investigation. Still the judicial decision should be based on the facts ascertained.

That from an institutional point of view. From a conceptual point of view, we believe the opposition between truth and evidence, or truth and proof, to be a false one. If *evidence* is required, it is required so as to *state the truth*. The same applies to proof[9]. A *proof*, is a proof of the *true*. How can we plead such a conceptual claim? We can draw some paradoxical consequences from the opposition between truth and proof. For example, to be a true one, the opposition between truth and proof should imply that certain proofs hold good while being false. It should likewise imply that certain proofs hold good while allowing the inference of some false consequence, or while being inferred from a false premise. Essentially, we can reformulate the Moore's paradox. Such a paradox has been made famous by a passage from Ludwig Wittgenstein's *Philosophical Investigations* (second part, X). It concerns the relation between reality and belief, the paradox being, in our reading, that a conceptual difference such as the difference between reality and belief implies nevertheless a certain connection between the two, so as to make some statements contradictory as the following:

1. *It rains but I believe it does not rain.*

We can reformulate the Moore's paradox regarding the relation between truth and proof:

2. *We have the proof of* p *but* p *is not true.*

Or:

3. *We have no proof of* p *but* p *is true.*

These paradoxical statements, as (2) and (3), are such in virtue of the conceptual relation between truth and proof. They confirm our intuition that a proof is ultimately a proof if and only if it does account for truth.

Three objections could be raised indeed to this argument[10]. The first is a *legal* one: civil proof and criminal proof have different standards. In a criminal case, the relevant fact should

[9] Which is the difference between proof and evidence? Technically, proof may be considered as the effect of evidence – see for instance [4]:1215-1216 according to which 'the effect of evidence' means 'the establishment of a fact by evidence'.

[10] Thanks to Martin P. Golding and François Lepage for drawing our attention on the first and second objection, respectively. Furthermore, we take the opportunity for thanking the two anonymous referees of a previous version of this paper.

be proved 'beyond reasonable doubt'; while in civil cases the standard is less high. This is true, but it does concern the pragmatics of legal inquiry, so to speak, and not the conceptual relation between truth and proof: independently of the standard, a proof is always taken as a proof of the true. No one, both in civil and criminal cases, would ever claim to have a false proof of the fact he is trying to prove. The second objection is a *logical* one: on a certain logical conception of proof, (2) and (3) are not paradoxical. They could be stated as follows: (2') If we have the proof of p but p is not true, then the system is not sound; (3') If we have no proof of p but p is true, then the system is not complete. This is true for a syntactic conception of proof, we suspect, being false or pointless for a semantic conception of proof, as the legal conception is: what matters in a legal context of proof are the facts accounted for, not the strictly logical properties of the proofs or the properties of the system they belong to. The third objection is a *metaphysical* one: (2) and (3) would be not paradoxical if truth be intended as metaphysical truth. It could be the case, given the distinction between epistemology and metaphysics, that we have no proof of $p$but $p$is true. This cannot be denied by our realist intuitions. In fact, our argument does not claim the reduction of truth to proof: on the contrary, it claims that a proof is a proof if and only if it does account for truth. So, on the conceptual priority of truth over proof, there is room for a realist conception of truth consistent with the principle that unproved or unknown truths could not determine a legal judgment.

To sum up, these objections do not undermine our intuition that a proof is a proof of the true, at least in the legal context. Moreover, any constraint on the patterns of legal inquiry does not alter the meaning and goal of the latter. *Truth is the main goal of legal inquiry and abduction*.

Apart from that argument on truth and proof, a current objection to legal abduction is the following: if for example a footprint and some traces of blood and hair are found, and if they correspond to footprints, blood and hair of, say, Theodore, then we could argue by abduction that Theodore was there; but it could be well exist another man with those physical characteristics[11]. Thus, is abduction an invalid reasoning? No, or at least not for this reason. Because in the example just made the problem concerns the evidence and not the reasoning. The conclusion is not secure because the evidence is not adequate.

Anyway, abduction never yields certainty. It is a probable inference, that is an inference determining conclusions whose truth does not necessarily follow from the truth of the premises (cf. W2: 22). But this is not a check: it is indeed a principle of responsibility. The knowledge of the uncertainty of abductive conclusions, means the responsibility for their inference. The knowledge of the lack of certainty of a certain piece of reasoning, means the impossibility of concealing an arbitrary decision under the shield of logic. The shared knowledge of the hypothetical nature of a certain conclusion, means the impossibility of claiming it as necessary.

(III) Legal abduction (at least in the adversary model) is public as scientific abduction is: according to a fallibilist approach in epistemology, centering on the public debate of arguments, we should say that the adversary model offers many more truth-warranties than a 'private' inquiry does according to the inquisitorial model[12].

In fact, the adversary model, which seems in other respects to separate legal and scientific abduction, has *publicity* as its main character: the evidence is produced on trial, in the public

[11] Cf. e.g. [18]: 406-407.

[12] He who has rightly denounced the misunderstanding of the opposition between adversary model and truth-seeking, is among others [8]: 362 ff. in particular), its main claim being that truth is to be determined less in investigation than in debate. On the opposition between truth-seeking and adversary system, see for example [11], chap. VI (*The "Fight" Theory versus the "Truth" Theory*); cf. [13].

debate of the parties. This is a fundamental difference from the inquisitorial model, where the legal inquiry can be carried on secretly by the authority, being admitted as relevant for the final decision the evidence collected *privatim* by the authority, regardless of its being discussed on trial. This public dimension is a strong similarity between legal and scientific abduction: the method of science defended by Peirce requires our beliefs to be discussed by the community of the inquirers (see e.g. CP 5.378, 5.407).

So we are able to comprehend which is the limit of the comparison between abduction and police investigation. Many peircean scholars insisted on such a theme[13]. But abduction as reconstruction of what happened is less a private investigation, the hunch of a particularly skillful detective, than a public confrontation of hypotheses. It can certainly happen that the more ingenious and brilliant hypothesis is the one resolving a case, but any hypothesis should be publicly evaluated according to some shared criteria and principles. The trial is the means of a public reconstruction of the disputed events. It is not decided by the genial hunch of a detective, nor by the absolutely private investigation of an authority.

It could be objected indeed that we are speaking of what follows abduction, that is of the process of verifying or falsifying the hypothesis, instead of speaking of abduction as hypothesis suggestion; this is not false, but such an objection would stay again on the quite romantic idea of a private hunch, regardless of any principle of method (cf. CP 2.634-635, 7.220, on the *criteria* of hypothesis formulation and selection). In fact, at point (I) we spoke of legal abduction as hypothesis evaluation and not only as hypothesis suggestion.

What has often been claimed about the logical structure of legal decision, is the practice of inverting the decision and its reasons. It is not only a practice of certain legal systems which admit the reasons of a decision to be made public after the decision is made public; it is also, according to some scholars, a practice of reasoning. That is, the practice of finding the premises after the conclusion is selected. This inversion was noticed by John Dewey in his celebrated article of 1924, *Logical Method and Law* (MW 15: 65-77)[14]. According to him, we generally begin with some vague anticipation of a conclusion (or at least of alternative conclusions), and then we look around for reasons and premises supporting it. It could be replied that a chronological priority is not a logical priority. As Neil MacCormick has rightly noticed, it does not make sense to insist on the inversion between reasons for decision and decision, or in other words between the context of discovery and the context of justification: in law, what makes a conclusion acceptable is its justification, regardless of the way it has been discovered at first[15]. Be it a logical priority, from Peirce's point of view it would be 'sham reasoning'[16].

So, both the reconstruction of the events and the justification of decision are public and publicly made through the debate of the parties. On the other hand, that the parties are more interested in their own success than they are in the discovery of truth, it is obvious. But it is no less true that the *judgment* must not concern the personal or political interests of the parties, but their arguments and the evidence produced, determining the truth-value of such arguments and evidence.

Even if it is utterly meaningless, or at least unrealistic, to hope for a collaborative spirit

[13]Cf. most of all [29]. That legal reasoning is quite different from police investigation is clearly shown by those legal scholars working on legal decision and justification: the legal decision is "perhaps a uniquely public and published form of reasoning" ([23]: 7).

[14]On Dewey's legal thought – compared to coeval 'legal realism' – see [24].

[15][23]: 15-16. Cf. [2]: 38 ff. for an examination of MacCormick's thesis and a comparison between justification of judicial decision and scientific testing.

[16]Reasoning from the conclusions desired is contrary to truth and logical validity – "it is no longer the reasoning which determines what the conclusion shall be, but it is the conclusion which determines what the reasoning shall be. This is sham reasoning" (CP 1.57).

between the parties, in any case *the judgment should be determined in the observance of truth*. Even if the parties do not aim at a shared determination of truth, even if there is no community of inquirers as in science, the goal of the investigation remains the same.

Justice should be in the first place *epistemic justice*. By that, we mean that a judicial decision is a right decision if it is determined on the basis of the facts ascertained. Where legal rules prescribe certain consequences to follow from the instances of a certain type of fact, and where the fact-finding ascertains such instances, there is no *political justice* capable of legally prevailing on the acquired knowledge. Here, justice follows from truth, and not the contrary.

Indeed, the prevailing of epistemic justice on political justice should be almost a triviality, but in recent years the contrary has often been claimed, that is that justice is essentially political justice[17]. If this claim is intended as general, it is completely at variance with the spirit of the legal process. A more subtle objection could be the following: especially in civil cases, the process is a form of politically-oriented and authority-based problem solving. We should reply as follows: the idea of a problem solving regardless of the state of things to be settled is a very difficult one to grasp. Even if a case might be settled without an historical inquiry determining what really happened, it is obviously impossible to settle a case without *knowing* the subject matter of the controversy. What is true of the case is a fundamental cognitive component of a good problem solving, and, at least in this weak sense, justice is necessarily epistemic justice.

But we are not completely satisfied with this weak sense of epistemic justice. Especially for criminal cases, we believe that epistemic justice has a strong sense consisting in the normative goal of a true reconstruction of what happened[18]. We do not accept the idea of political justice prevailing on epistemic justice because the first and more important goal of the process is the statement of truth, independently of its political convenience. As many important scholars recognize, the process has a *cognitive function* and the political interests cannot dispose of it[19].

We have to recognize at most that the determination of truth is not a *sufficient* condition of justice, even if it is a *necessary* condition of it. Essentially, a judicial decision is a right one if (i) factual premises are true and (ii) normative premises are morally acceptable. Now, concerning the first condition, justice follows from a true account of the facts. There cannot be justice without truth. There cannot be a right decision on the basis of a false reconstruction of what happened or matters.

In observance of the truth, those legal consequences should be determined which normatively follow from the facts ascertained. Only in the determination of those consequences some political considerations could be allowed, if and only if the law itself leaves to the judge a faculty of choosing between more or less slightly different normative consequences.

Finally, we can sum up our comparison between legal and scientific abduction in the following points:

(i) legal abduction in its ripe sense provides for the best explanation of what happened;

(ii) concerning the relation of truth and proof, their opposition is a false one, because a proof is a proof of the true, and a limitation of the patterns of investigation does not change its goal;

[17] See e.g. [31, 20, 21]. Less recently, [10].

[18] "Factfinding in a legal context has, as a principal goal, an "epistemic objective": the generation of findings that are *accurate* descriptions of events and that are *warranted* by the legally available evidence" ([33]: 1526).

[19] Cf. for instance [9]: 1-3, 133, 157).

(iii) at least in the adversary model, legal abduction is public as scientific abduction is;

(iv) if it is true that the parties on trial are in conflict, it is no less true that the judgment should regard the truth or falsehood of their arguments, and not their political convenience.

We believe these points to testify in favor of the relevance of abduction for legal inquiry. If we are justified in speaking of *legal abduction*, then, the main point being the determination of truth as necessary condition of judgment, we are finally justified in claiming that, in law and for legal inquiry, *justice follows from truth*.

Abbreviations

CP *Collected Papers* of C.S. Peirce, 8 vols., ed. by C. Hartshorne, P. Weiss (vols. 1-6), and A. Burks (vols. 7-8), Harvard University Press, 1931-1958. For example, CP 5.189: volume 5, paragraph 189.

W *Writings of C.S. Peirce: a Chronological Edition*, 6 vols. published, ed. by M. Fisch et al., Bloomington, Indiana University Press, 1982-. For example, W1: 210: volume 1, page 210.

MW *The Middle Works* of J. Dewey, 1899-1924, ed. by J.A. Boydston, Carbondale and Edwardsville, Southern Illinois University Press, 1976-1983. For example MW 3: 111: volume 3, page 111.

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