Law and Philosophy Library

José Juan Moreso

Legal Indeterminacy and Constitutional Interpretation

Springer-Science+Business Media, B.V.

c) Legal reasons, sources and gaps

Like Dworkin, Raz (1979, 53-77) uses a broad notion of legal gaps. Let us begin with his conclusion (1979, 77):[31]

„The outcome of this discussion is that legal gaps are not only possible but, according to the sources thesis, inescapable. They arise, however, where the law speaks with an uncertain voice (simple indeterminacy) or where it speaks with many voices (unresolved conflicts). Contrary to much popular imagining, there are no gaps when the law is silent. In such cases closure rules, which are analytic truths rather than positive legal rules, come into operation and prevent the occurrence of gaps."

I agree with Raz that there is indeterminacy when we are confronted with problems of vagueness (*gaps of recognition*, as I will try to show in the next section) and also when there are genuine normative contradictions, which Raz calls „unresolved conflicts" (as I tried to show in the previous section). I also agree that in those cases the corresponding legal propositions have no truth-value (Raz 1979, 70 f.). Contrary to Raz, however, I do think that there can be *normative gaps* in the law and that, therefore, the legal propositions corresponding to these also have no truth-value. In what follows, I will try to argue that Raz cannot show at the same time that the law is complete (has no normative gaps) and that there are legal propositions without a truth-value, since these two theses are incompatible.

According to Raz (1979, 66), legal statements are statements about reasons for action:

„Legal sources are reasons for action. If s is a variable ranging over statements of social sources, then $sLRx,\phi$ ('s is a legal reason for x to ϕ') is the general form of statements of legal reasons. Such statements are true if and only if s is true and is a statement of the appropriate social condition according to the doctrine of identity.
Because the existence of the appropriate source is a reason for x to ϕ, its existence is the ground for the truth of statements of the form 'Legally x ought to ϕ' (LRx, ϕ)."

Thus, what Raz calls the *sources thesis* implies that

„Statements of the form $pLRx, \phi$ are true only if statements of social facts specifiable without recourse to moral arguments are substituted for p".

Raz adds that legal statements are about conclusive reasons for action (a conclusive reason for x to do ϕ is „a reason which overrides all conflicting reasons, is not excluded by exclusionary reasons, nor cancelled by any cancelling conditions"; Raz 1979, 64).

Raz links the problems of legal gaps to the application of the law. This leads him to distinguish *jurisdictional gaps* from *legal gaps* (Raz 1979, 70):

„*Jurisdictional Gaps*. A legal system is jurisdictionally complete if its courts have jurisdiction over all legal questions. It has a jurisdictional gap if its courts lack jurisdiction over certain legal questions.

[31] This is also the source of the expressions used in the titles of sects. 5-7 of the present chapter.

Legal Gaps. A legal system is legally complete if there is a complete answer to all the legal questions over which the courts have jurisdiction. It contains a legal gap if some legal questions subject to jurisdiction have no complete answer."

Obviously, what we are interested in here are legal gaps (normative gaps) (modern legal system usually are jurisdictionally complete). According to Raz (1979, 71), there are two possible answers to a legal question:

(A) $LR_c x, \phi$, the law conclusively requires the action; and
(B) $LPer_c x, \neg\phi$, i. e. the law conclusively permits the omission of the action.

Raz goes on to say that there is a legal gap if the law does not require any decision. And he adds:

„It follows that there are two possible kinds of legal gaps:
(1) '$LR_c x, \phi$' is neither true nor false and '$LPer_c x, \neg\phi$' (i. e. '$L\neg R_c x, \phi$') is neither true nor false.
(2) '$(\neg LR_c x, \phi) \wedge (\neg LPer_c x, \neg\phi)$' is true."

Now, Raz only accepts the existence of gaps in case (1). These are cases of legal indeterminacy due to semantic indeterminacy (i. e., because of the vagueness of the concepts used in the law) or unresolved conflicts (i. e., because of incompatible reasons). Since in none of these cases there is a genuine normative gap (Raz's notion of 'gap' includes all the cases of legal indeterminacy), we can ignore them for the time being.

In contrast, according to Raz, normative gaps would arise if (2) could be maintained. Now, (2) is equivalent to

(3) $(\neg LR_c x, \phi) \wedge (\neg L\neg R_c x, \phi)$.[32]

But, according to Raz (1979, 76), it is a logical truth that

(4) $\neg(LR_c x, \phi) \leftrightarrow (L\neg R_c x, \phi)$

From (3) and (4), it follows that

(5) $(L\neg R_c x, \phi) \wedge (\neg L\neg R_c x, \phi)$.

The proof of (5) is easy:

[a] $\neg LR_c x, \phi$	Elimination of $\wedge$ in (3).
[b] $L\neg R_c x, \phi$	Modus ponens in (4) and [a].
[c] $\neg L\neg R_c x, \phi$	Elimination of $\wedge$ in (3).
[d] $(L\neg R_c x, \phi) \wedge (\neg L\neg R_c x, \phi)$	Introduction of $\wedge$ in [b],[c].

[32] Because of the equivalence of '$(\neg LPer_c x, \neg\phi)$' and '$(\neg L\neg R_c x, \phi)$'.

(5) is a contradiction. Thus, the logical truth of (4) implies the rejection of (2), i. e. the truth of (4) implies the rejection of the thesis of normative gaps.

If Raz's reasoning were sound, there would be no room for normative gaps in legal systems, since it would be impossible that the law at the same time neither prohibits an action nor permits its omission. Now, we must look at how Raz tries to prove the logical truth of (4).

He holds that the proof of (4) is easy. First, he tries to prove the biconditional from right to left, that is:

(6) $L\neg R_c x,\ \phi \rightarrow \neg LR_c x,\ \phi.$

The proof starts with the following assertion (1979, 76): „It cannot be true that legally there is a conclusive reason to perform an act and at the same time that legally there is no such conclusive reason." This means that

(7) $LR_c x,\ \phi \rightarrow \neg L\neg R_c x,\ \phi$

and, by counterposition, (6) is proved. Now, let us look at the derivation of the biconditional from left to right:

(8) $(\neg LR_c x,\ \phi) \rightarrow (L\neg R_c x,\ \phi)$

Raz argues as follows (1979, 76):

„Assume that the antecedent is true, i. e. that $LR_c x,\ \phi$ is false. Can it also be that $L\neg R_c x,\ \phi$ is false? If $\neg LR_c x,\ \phi$, then it is not the case that there is a fact which is a conclusive legal reason to ϕ. But if there is no conclusive reason to ϕ, can it fail to be the law that there is no conclusive reason to ϕ? This would have been a real possibility had there been a need for a special kind of fact to make true negative statements of reasons of the form $\neg Rx,\ \phi$ ... But it has already been established that such propositions are verified by the absence of reasons only and it is precisely that absence which is entailed by $\neg LR_c x,\ \phi$. Hence $\neg LR_c x,\ \phi \rightarrow L\neg R_c x,\ \phi$, Q. E. D."

Raz then asserts that (8) is equivalent to

(9) $(\neg LR_c x,\ \phi) \rightarrow (L\neg Per_c x,\ \neg\phi)$

And he adds: „That is rendering of the familiar closure rule that whatever is not legally prohibited is legally permitted."

I think the reason why Raz regards (4) to be an analytic truth is his peculiar conception of permissive legal statements. Raz (1979, 64) distinguishes two basic kinds of permissions: *explicit* permissions and *conclusive* permissions:

(10) x has an explicit permission to ϕ $(Per_e x,\ \phi) =_{\text{def.}}$ There is a fact with some force to cancel reasons for no-ϕ-ing ($\neg\phi$-ing).

And

(11) x has a conclusive permission to ϕ $(Per_c x,\ \phi) =_{def.}$ It is false that there is a conclusive reason for x to $\neg\phi$ (i. e. $\neg R_c\, x,\ \neg\phi$).

This means that „A conclusive permission to act is the contradictory of a conclusive reason for refraining from the act“. The following expression is a logical truth:

(12) $(R_c\, x,\ \phi) \leftrightarrow \neg(Per_c x,\ \neg\phi)$

It is the peculiar conception of conclusive permissions which leads Raz to assume the analytic truth of (4). Since an action is permitted conclusively when there is no conclusive reason prohibiting the performance of the action, one can show that all actions are *conclusively* determined by a normative system: They are either prohibited (by a conclusive reason), or not prohibited (i. e., permitted by a conclusive reason). It is the logic of *conclusive reasons* which allows Raz to hold that all generic actions are normatively determined.

What happens, however, is that the logic of conclusive reasons can support only the weak version of the Principle of Prohibition, because, according to Raz, that a behaviour is conclusively permitted means that its omission is not conclusively required. Thus, it is easy to see that his definition (2) of a gap leads to a contradiction. On the one hand, the analytic truth that all behaviour is either conclusively prohibited or not is asserted. On the other, a normative gap is defined as 'it is true that some conduct c is neither conclusively prohibited nor conclusively not prohibited'. Hence, there are no normative gaps. Actually, the definition of a gap is already contradictory (given the meaning of 'conclusively prohibited').

But the thesis of normative gaps presupposes that there is a gap whenever a conduct is neither prohibited nor permitted (in the strong sense) by a normative system. In view of this, Raz's definition (2) of a gap is inadequate. According to Raz, there are no gaps because if a conduct is not regulated, then there is a conclusive reason permitting its performance, since there is no conclusive reason prohibiting it.

Using the logic of normative propositions, part of which is presented in the appendix to this chapter, and given that for Raz the external and the internal negation of his legal statements of reasons are equivalent, the logical truth of (4) — $\neg(LR_c x,\ \phi) \leftrightarrow (L\neg R_c x,\ \phi)$ — can be represented as follows (where 'Op' is equivalent to ϕ being required for x):

(4a) $\neg$'Op' $\in L \leftrightarrow$ 'Op' $\notin L$.

Obviously, (4a) is an analytic statement. Also, it does not come as a surprise that (3) — $\neg(LR_c x,\ \phi) \wedge (\neg L\neg R_c x,\ \phi)$, which is equivalent to the definition (2) of a gap — contains a contradiction. (3) is equivalent to

(3a) $\neg$'Op' $\in L \wedge \neg$'Op' $\notin L$.

Since „$\neg$'*Op*' $\notin$ *L*" is equivalent to „'*Op*' $\in$ *L*", (3a) is plainly a contradiction. But the adequate definition of a gap actually corresponds to

(3b) $\neg$'Op' $\in L \wedge \neg$'$\neg Op$' $\in L$.

In order to show that (3b) is contradictory, one must prove the analytic truth of

(4b) $\neg$'Op' $\in L \leftrightarrow$ '$\neg Op$' $\in L$.

Neither the logic of conclusive reasons nor any other logic can guarantee the analytic truth of (4b), because the absence of a norm making *p* obligatory is perfectly compatible with the absence of a norm permitting the omission of *p*.

Let us now see whether the acceptance of the analytic truth of (4) is compatible with definition (1) of a gap, as Raz holds. Raz accepts the possibility that legal statements of reasons, like '$LR_c x, \phi$', have no truth-value. That possibility cannot be expressed with his logical symbolism. For Raz, 'It is not true that legally there is a reason ...' is equivalent to 'It is false that legally there is a reason ...'. That is what is expressed in his logical truth in (4). His symbolism thus presupposes the bivalence he denies with his words. If, as in von Wright's truth-logic, Raz would distinguish between 'It is not true that ...' and 'It is false that ...', his conclusions would have to be different. Raz holds that

(1) '$LR_c x, \phi$' is neither true nor false and
'$LPer_c x, \neg\phi$' (i. e. '$L\neg R_c x, \phi$') is neither true nor false

can be true. Using the truth-logic *TL*, we can refute that assertion. Let us denote 'It is not true that ...' by $\neg T$, and 'It is not false that ...' by $\neg T \neg$. We can then represent (1) through expressions (13) and (14):

(13) $\neg T(LR_c x, \phi) \wedge \neg T\neg\, (LR_c x, \phi)$
(14) $\neg T(L\neg R_c x, \phi) \wedge \neg T\neg\, (L\neg R_c x, \phi)$

It can be shown that the acceptance of the logical law (4) — which I will call 'Raz's law' — is incompatible with (13) and (14) in *TL*.

First, the proof for (13):

1) $\neg T(LR_c x, \phi) \wedge \neg T\neg\, (LR_c x, \phi)$	Definition of gap
2) $\neg(LR_c x, \phi) \leftrightarrow (L\neg R_c x, \phi)$	Raz's law
3) $\neg(LR_c x, \phi) \rightarrow (L\neg R_c x, \phi)$	Elimination of $\leftrightarrow$ in 2)
4) $(LR_c x, \phi) \vee (L\neg R_c x, \phi)$	Definition of $\rightarrow$ through $\vee$ in 3)

5) $T(LR_cx, \phi) \vee T(L\neg R_cx, \phi)$ Axiom A0 of *TL*[33] in 4)
6) $T(LR_cx, \phi) \vee T\neg(LR_cx, \phi)$ Substitution in 5)[34]
7) $\neg(T(LR_cx, \phi) \vee T\neg(LR_cx, \phi))$ Morgan's Law in 1)
8) $T(LR_cx, \phi) \vee T\neg(LR_cx, \phi) \wedge \neg(T(LR_cx, \phi) \vee T\neg(LR_cx, \phi))$

Since 8) is a contradiction (resulting from the conjunction of 6) and 7)), we have shown that (13) is incompatible with Raz's law.

Now the proof for (14):

1) $\neg T(L\neg R_cx, \phi) \wedge \neg T\neg (L\neg R_cx, \phi)$ Definition of gap
2) $\neg(L\neg R_cx, \phi) \leftrightarrow (LR_cx, \phi)$ Raz's law[35]
3) $\neg(L\neg R_cx, \phi) \rightarrow (LR_cx, \phi)$ Elimination of $\leftrightarrow$ in 2)
4) $(L\neg R_cx, \phi) \vee (LR_cx, \phi)$ Definition of $\rightarrow$ through $\vee$ in 3)
5) $T(L\neg R_cx, \phi) \vee T(LR_cx, \phi)$ Axiom A0 of *TL* in 4)
6) $T(L\neg R_cx, \phi) \vee T\neg(L\neg R_cx, \phi)$ Substitution in 5)[36]
7) $\neg(T(L\neg R_cx, \phi) \vee T\neg(L\neg R_cx, \phi))$ Morgan's Law in 1)
8) $T(L\neg R_cx, \phi) \vee T\neg(L\neg R_cx, \phi) \wedge \neg(T(L\neg R_cx, \phi) \vee T\neg(L\neg R_cx, \phi))$

Since 8) is a contradiction — resulting from the conjunction of 6) and 7) —, we have shown that (14) too is incompatible with Raz's law.

That means that Raz cannot maintain the truth of (1) and the analytic truth of the logical law contained in (4). Raz's law implies that there can be no legal propositions without a truth-value. Since Raz holds that legal propositions referring to borderline cases and to unresolved conflicts have no truth-value, he should abandon the claim that (4) is an analytic truth. And he should distinguish the external negation from the internal negation of legal propositions of reasons, just like truth-logic distinguishes 'It is not true that ...' from 'It is false that ...'. 'It is not true that ...' corresponds to his external negation

(15) $\neg(LR_cx, \phi)$

and 'It is false that ...' to his internal negation

(16) $(L\neg R_cx, \phi)$.

[33] This is the axiom according to which all tautologies remain tautologies when their variables are prefixed with *T*.

[34] Substitution of the second member of the disjunction, given the equivalence of 2).

[35] 2) is derived from Raz's law by contraposition.

[36] Substitution of the second member of the disjunction, given the equivalence of 2).

Thus, to say that '$LR_c x, \phi$' has no truth-value would mean that it is neither true nor false, that is:

$$(17)\ \neg(LR_c x,\ \phi) \wedge \neg(L\neg R_c x,\ \phi).$$

But (17) is equivalent to (3). That means that gaps are possible, and it is the logical truth contained in (4) that should be abandoned, because it is a logical truth only in a logical system that presupposes bivalence. In Raz's case, he thus smuggles back in the bivalence he had denied before.

Raz's thesis that there are no normative gaps in legal systems (and that (4) is analytically true) relies on two assumptions that should be made explicit:

(I) The logic of conclusive permissions according to which that an action is conclusively permitted means that there is no conclusive reason prohibiting it.
(II) The bivalent foundation of Raz's symbolism which renders any formulation of a proposition without a truth-value inconsistent.

Raz thus confronts a dilemma: Either he accepts the logic of conclusive reasons, and rejects the possibility of legal propositions without a truth-value; or he rejects the logic of conclusive reasons and, therefore, also the logical truth of (4).

The first horn of the dilemma leads to the rejection of legal constructivism and, therefore, of legal positivism. Only a position that asserts the existence of a normative reality independently of social facts can make such a position plausible. What is needed in order to opt for the first horn of the dilemma is an ontological, not a logical thesis.

Now let's turn to the second horn: Once it is guaranteed that the weak version of the Principle of Prohibition (which is a version of Raz's law) is analytic, but irrelevant and, above all, that it does not help to maintain the existence of gaps, one can say that the thesis best fitting to legal positivism is the one asserting that completeness (and, therefore, also the existence of gaps) is a contingent matter.

In summary, like Kelsen and Dworkin, Raz too has not shown that it is a 'logical truth' that legal systems have no normative gaps; the existence of a closure rule like the one expressed in the strong version of the Principle of Prohibition is a contingent question. Thus, contrary to Raz's belief, there can be gaps when the law is silent.

7. Legal Statements and Vagueness: The Law Speaks With an Uncertain Voice

Even more than with normative antinomies or gaps, the indeterminacy of the law is connected with the problem of the vagueness of linguistic expressions, and especially the vagueness of the generic terms (or, more precisely, of the concepts expressed by the generic terms) used in the formulation of general rules.[37] Thus, we can say that

[37] As is commonly known, an important part of the controversy in legal philosophy provoked by the work of Hart is precisely about this question. Cf. for example Fuller 1958, Dworkin 1985, Lyons 1982. The discussion of Hart's thesis of the indeterminacy of the law because of the open texture of language has recently

A linguistic expression *E* expresses a *vague* concept if and only if in some cases it poses the problem whether or not a particular object belongs to the referent of *E*.

Generic terms like 'woods', 'bald', or 'heap'[38] pose a problem when it comes to determining their referent in many doubtful cases. In the law, there are terms like 'at night' (what about dusk?) or 'habitually' (how many times must a behaviour have been repeated in order to be a habit?) which suffer from vagueness in that sense. In fact, the problem is even more severe since, as has repeatedly been shown (Russell 1923, Williams 1946, 181 ff.; Waismann 1951; Wittgenstein 1953, sects. 76 and 80; Carnap 1955; Ross 1958, 114 f.; Hart 1961, 121 ff.; Carrió 1965, 31 ff.; Scheffler 1979, 50-65), all generic terms are *potentially* vague. This is what is known as the *open texture* of language: one can always imagine an object for which we have no clear criteria for knowing whether or not it belongs to the referent of the respective expression.[39] The same is true for artificial languages. Generally, we have no great difficulties in applying the term 'cat' (when referring to a certain mammal); but would we keep using the word 'cat' for referring to an animal with the shape of a cat, but which walks upright, wears a grey suit, and says 'Nice to meet you'? Similarly, since the law uses rules which contain general terms that may be applied to a wide variety of cases, there are many cases that are doubtful or difficult because of the vagueness of the terms used in the formulation of the rules. Thus, in order to know whether an aggravating circumstance applies in a criminal case, one can ask: Is an individual carrying a hypodermic syringe *armed*? Or, in order to know whether an unwed mother who kills her baby to hide her disgrace has committed infanticide: How long is a child *newborn*? Or how *valuable* must a hidden and unknown object be in order to be considered a 'treasure' to the effects of civil law?

Thus, in the famous words of H. L. A. Hart:

„All rules involve recognizing or classifying particular cases as instances of general terms, and in the case of everything which we are prepared to call a rule it is possible to distinguish clear central cases, where it certainly applies and others where there are reasons for both asserting and denying that it applies. Nothing can eliminate this duality of a core of certainty and a penumbra of doubt when we are engaged in bringing particular situations under general rules." (Hart 1961, 119)

What happens, then, with the truth-conditions of legal propositions when norm formulations are expressed using vague concepts? If a norm requires that all *F* do ϕ, and *x* is a

---

returned to the center of legal-philosophical attention: cf. Schauer 1991, 34-37; Marmor 1992, 132-134; Bix 1993, 7-35; Waldron 1994, 509-540.

[38] The latter two examples were already mentioned by the Stoics; thus, Eubulides said: „Would you say that a man was bald if he had only one hair? Yes. Would you say that a man was bald if he had only two hairs? Yes. Would you ..., etc. Then where do you draw the line?" (quoted from Kneale/Kneale 1962, 114).

[39] Potential vagueness is also known as *intensional* vagueness (the terminology is due to Carnap 1955); we have intensional vagueness when it is possible that there are objects which give rise to doubts about whether or not they belong to the referent of the respective predicate. If such objects do, in fact, exist, the vagueness is also *extensional*. If a predicate is *extensionally* vague, it also is *intensionally* vague, but the converse does not necessarily hold.

borderline case of *F*, what are the truth-conditions of the proposition expressed by 'Legally, *x* ought to do ϕ'?

Actually, the question is even more pressing if we take into account that vague predicates give rise to the kind of paradoxical arguments known since the times of antiquity by the term of *sorites* ('soros' in Greek meaning 'heap'). Recent philosophical discussion on vagueness takes the problem posed by the paradoxes arising from arguments of this kind very seriously.[40]

Let us look at some examples:

Imagine a heap of sand. Now, if we take one grain from that heap, it will still be a heap of sand: taking one grain from it does not convert a heap into something else. Thus, if two sets of grains of sand differ only by one grain, either both are heaps, or none is. These apparently obvious assertions lead to the conclusion that all sets of grains of sand, even those consisting only of a single grain, are heaps.

Of someone who has ten million dollars, we would say that he is rich. If someone is rich, he will still be rich if we take one dollar from him. Therefore, we are all rich (even if we have only one dollar, or no dollar at all).

Suppose there is a red spot. If a coloured spot cannot be distinguished from a red spot, it is red. Now, between two spots of whatever colour that can just barely be distinguished, there is always a third possible spot whose colour is indistinguishable from that of the others. Between a red spot and an orange spot (or a yellow, or green, or blue one, ...), there is a sequence of barely distinguishable spots. Therefore, all coloured spots are red.

0 is a small number. If *n* is small, then *n+1* is also small. Therefore, all numbers are small. This version of the paradox is known as 'Wang's paradox' (Dummett 1978, 250).

If someone is put into solitary confinement for a thousand days, we would call that humiliating treatment. If a certain period of solitary confinement is humiliating, then solitary confinement of one hour less is also humiliating. It follows that all solitary confinement (for instance, one of only a few minutes) is humiliating.[41]

What these arguments have in common is the presence of vague concepts expressed through terms like 'heap', 'rich', 'red', 'small', 'humiliating treatment', etc. *Sorites* arguments depend on the fact that these expressions are *tolerant*, i. e., small changes do not affect the applicability of the concept. The paradox arises because big changes, which do affect the applicability of the concept, can be constructed — because of the tolerance of those concepts — as a succession of very small changes.

More formally, the argument can be presented as follows:

---

[40] I here follow Sainsbury's illuminating discussion of the problem (1995, 22-51).

[41] Note that what is paradoxical here is the step from the premises to the conclusion (this is valid even if one thinks that some solitary confinement is not humiliating). See the example in Endicott 1997. The Spanish Constitution, in its art. 15, prohibits inhuman or humiliating punishment and treatment; and the Prison Regulations (Royal Decree 1201 of May 8, 1981, modified by Royal Decree 787 of March 28, 1984) in their art. 111 permit the sanction of solitary confinement, though only for a maximum of 14 days.

(1) A person who has 10 million dollars is rich.
(2) If someone with *n* dollars is rich, then someone with *n-1* dollars is rich too.

Therefore, a person who has 1 dollar is rich.

Premise (1) of the argument can be called the *categorical premise*; premise (2) actually stands for a whole number of *conditional premises* which permit the application of the corresponding number of applications of *modus ponens*, until we reach a paradoxical conclusion. To such an argument, one can react in one of three possible ways:

(a) Accept the conclusion.
(b) Reject the argument as unsound.
(c) Reject one or more premises of the argument.

I will now consider each one of these possible reactions, and their significance for the truth-conditions of legal propositions containing vague concepts.

a) Accepting the conclusion of sorites

To accept the conclusion of *sorites* seems contrary to common sense. But it has been used as a challenge to our ordinary conception of the world.

Unger (1979a, 1979b) has presented the following *sorites* argument:

(1) You cannot make a table out of just one gramme of wood.
(2) If you cannot make a table out of *n* grammes of wood, then you cannot make a table out of *n+1* grammes.

Hence you cannot make a table (i. e, there are no tables).

This argument poses a challenge to our conception of the world. Our vague concepts are deeply deficient, to the extent that they undermine our firmest intuitions and lead us to assert absurdities (that a grain of sand is a heap of sand, or that someone with only one dollar is rich). In Unger's words,

„we may begin by supposing that there are heaps, and that a million beans typically arranged gives us an instance of that concept. But, then, removing a single peripheral bean gently from such a typical heap, it seems, will not leave us with no heap before us. Hence, we must conclude that even when we have but one bean left, or none at all, we still have a heap of beans. But this is absurd. Hence, we have reduced the original supposition of existence to an absurdity, and we may generalize accordingly. This, we may say, is an *indirect argument*, that there are no heaps" (Unger 1979b, 118).

This nihilist and skeptical conclusion challenges our ordinary conception of the world, suggesting a scientific conception for which there are no heaps, no table, no rocks, and not even human beings (in 1979b, Unger reaches the conclusion that he does not exist).

Dummett (1978, 248-268) and Wright (1975; 1976; 1993, 107-174) too have taken the challenge posed by this paradox seriously, and have come to conclusions leading to some form of nihilism. For these authors, the problem does not arise from the conflict between our ordinary conception of the world and the scientific conception, but from the incoherence of our language or, more precisely, the incoherence of the rules governing our use of language. According to Wright, the incoherence arises out of two incompatible theses about the presence of *observational* predicates in our languages: *(i)* It seems to be incompatible with their meanings to draw precise limits for their application; and *(ii)* if we do not draw precise limits for their application, predicates are *tolerant* and can be applied indiscriminately. Wright suggests that the point of view according to which our language is rule-governed should be abandoned.[42]

In fact, Unger's conception as well as those of Dummett and Wright restore Frege's skepticism about the possibility of *vague* languages. As Frege (1970, 159) said: „A concept that is not sharply defined is wrongly termed a concept.“[43] He gave two reasons for his rejection of quasi-conceptual constructions: *(i)* they lack meaning *(Bedeutung)*, and *(ii)* the laws of logic fail when applied to them. For both reasons, and because they lead to incoherence, Frege regarded languages that use vague concepts as *deficient*.

The consequences of accepting that *nihilist* conception of ordinary language are devastating for legal theory. Since legal norms often use observational predicates, the introduction of *sorites* makes our legal language incoherent. Take the following example: According to some Criminal Codes, to commit a crime *at night* is an aggravating circumstance. With this example, we can produce a *sorites* paradox:

(1') On some territory, say, in Spain, it is night at two in the morning.
(2') If at *h* o'clock it is night, then it is also night at *h* o'clock minus one second.

Therefore, at two o'clock in the afternoon it is night.

Thus, legal propositions expressed by applicative legal statements (containing observational predicates) seem to be incoherent, and the legal propositions referring to them lead to inconsistent propositions.

---

42 Burns (1991, 128 f.) proposes to substitute Wright's *strict* rules of tolerance by other, *broader* ones, in order to avoid the incoherence those rules lead to when applied to observational predicates. A strict rule of tolerance could have the following form: „If one thing is a heap and a second differs from it in containing only one less grain, then the second is a heap also.“ Now, Burns proposes the following formulation for rules of tolerance: „If one thing is a heap and a second differs from it in containing only one less grain and in any other ways dependent on this minor difference, but the two do not differ detectably in any other respects relevant to the application of the predicate 'heap', then the second is a heap also.“ The possibility that this *ceteris paribus* clause in rules of tolerance helps avoid *sorites* paradoxes will not be analyzed here. A somewhat different critique of Wright's ideas can be found in Platts 1979, 217-249.

43 And he added (ibid.): „A definition of a concept (of a possible predicate) must be complete; it must unambiguously determine, as regards any object, whether or not it falls under the concept (whether or not the predicate is truly assertible of it) ... We may express this metaphorically as follows: the concept must have a sharp boundary.“

With *sorites*, we seem to reach conclusions like those advocated by the authors of *Critical Legal Studies*, with their insistence on the radical indeterminacy of the law and the incoherence of legal reasoning. In one of the papers most frequently quoted in critical scholarship, Singer (1984) attempts to give a foundation to *nihilism* in legal theory, a nihilism with two components: an epistemological and a moral one. Here, I am interested in underscoring the epistemological component which Singer elaborates as follows:

„As a theory of knowledge, nihilism claims that it is impossible to say anything true about the world. No one can properly claim to describe the world accurately ... If one takes nihilism seriously, it is impossible, or in any event fruitless, to describe the world ..." (Singer 1984, 4)

The acceptance of *sorites* arguments gives plausibility to this radically skeptical thesis.

However, that position clashes with two *obvious truths* about ordinary language: *(i)* We do use vague predicates in our ordinary (and in our legal) language. And *(ii)* our ordinary (and our legal) language permit sufficient *understanding* in human communication.

Of course, we could be under a total illusion; but before we accept such a disappointing conclusion we should analyze other ways of escaping the *sorites* paradox. Since accepting that conclusion is counterintuitive, we should accept it only if there is no other way of detaining the subversive force of the paradox.[44] So let us now look at such alternative solutions.

b) Rejecting the argument: degrees of truth

Although we may hardly be inclined to question the rule of *modus ponens*, some theorists have made it responsible for the problem of *sorites* and the paradoxes it produces.

It may seem natural to say that the proposition according to which someone with a certain amount of money is rich is true to some extent, that there is *a certain amount* of truth in it. This has led some authors to construct a logic of vagueness, so-called *fuzzy logic*.[45] The semantic notions of truth and falsity are replaced by the notion of *degrees of truth*. If the predicate 'rich' definitely applies to some person, then the proposition attributing richness to that person would be said to have the highest possible truth-value (i. e., 1). If the predicate definitely does not apply to some other person, then the proposition attributing richness to that person would be given the smallest possible truth-value (i. e., 0). Between 0 and 1, there is a *continuum* on which the different ob-

---

[44] Unger's position could also be challenged as absurd in the following way: From the premise 'With 100 kg of wood one can make a table' we can conclude, by way of a *sorites* argument, that with 1 gramme of wood one can make a table; now, from the premise 'With 1 gramme of wood, one cannot make a table' we conclude, also by way of a *sorites* argument, that with 100 kg of wood one cannot make a table. Unger could argue in favour of the falsity of the categorical premises of any *sorites* argument; but that would mean to reject the premises (at least sometimes), rather than accept the conclusion of such arguments; and the rejection of the truth of the premises would have to be argued for independently of the argument.

[45] Cf. Zadeh 1965. For a recent systematic presentation of *fuzzy logic(s)*, see Trillas/Alsina/Terricabras 1995.

jects (in our case, persons) being borderline cases of the predicate are located. This gives us an idea of how degrees of truth are assigned to atomic propositions. But we also need a method for assigning degrees of truth to molecular propositions. Disjunction and conjunction can be composed in a fashion similar to that of classical bivalent logic. With a metaphor owed to Quine (1972, 30), we can say that while truth is *dominant* (and falsity recessive) in disjunction, truth is *recessive* (and falsity dominant) in conjunction. Thus, we have:

(a) $\text{Val}\,[p \vee q] = \text{Max}\,\{\text{Val}\,[p], \text{Val}\,[q]\}$
(b) $\text{Val}\,[p \wedge q] = \text{Min}\,\{\text{Val}\,[p], \text{Val}\,[q]\}$

Negation also behaves as in classical logic, i. e., the value of the negation of a proposition p is the complement of the degree of truth (in the set $\{0, 1\}$) of p:

(c) $\text{Val}\,[\neg p] = 1 - \text{Val}\,[p]$.

As in classical logic, conjunction and disjunction are interdefinable with the help of *(a)*, *(b)* and *(c)*. The conditional, however, behaves differently. The idea is that if the antecedent of a conditional is more true than its consequent, then the conditional cannot be completely true, and if the antecedent is only marginally more true than the consequent, then the conditional must be *almost* totally true. The formula for the degree of truth of a conditional can be the following:

(d) $\text{Val}\,[p \rightarrow q] = 1 - (\text{Val}\,[p] - \text{Val}\,[q])$, if $\text{Val}\,[p] > \text{Val}\,[q]$;
$= 1$ in all other cases

This approach enables us to avoid the paradox by postulating that the validity of *modus ponens* presupposes that the propositions it is applied to have the extreme degrees of truth, 1 or 0. That means that one cannot reach conclusions of a degree of less than 1 from premises of degree 1. In the intermediate degrees, however, the application of *modus ponens* can bring with it the *filtration* of truth. The filtration can be very small for each application, but it will be big if the number of applications is big, as in the case of *sorites*; and that is enough to render *modus ponens* invalid (Sainsbury 1995, 41 f.; Engel 1991, 208 f.).

Here, I will not analyze in detail the advantages and disadvantages the degrees-of-truth approach may have for the analysis of propositions that contain vague concepts, since that approach would lead to severe problems for my general analysis of legal propositions.[46] If I were to analyze legal propositions containing vague predicates using the conception of degrees of truth, I would have to say that there are true legal propositions, false legal propositions, legal propositions without a truth-value, but also legal propositions that are absolutely true, true to a high degree, more or less true, almost

[46] An analysis of legal propositions and of legal reasoning in general with the help of fuzzy logic can be found in Mazzarese 1996, 1997.

true, almost untrue, absolutely untrue, etc. The truth-logic *TL* would be an insufficient instrument for analyzing those last propositions. But in the case of normative gaps, for instance, the problem is not that legal propositions are more or less true, but that they have no truth-value at all.

Besides, the logic of degrees of truth is itself insufficient for accounting for propositions without a truth-value, since those propositions fall outside the range of truth-values between 1 and 0. Therefore, I will try to show how the truth-logic *TL* can account for propositions containing vague concepts.[47]

c) Rejecting the premises

Before analyzing how *TL* can handle vague predicates, I must present — if only very briefly — the so-called *epistemic* theory of vagueness. It holds that vagueness consists in our ignorance of the precise boundaries of our concepts and that, therefore, it does not call for a revision of classical logic. Although this theory is accepted only by a small minority of philosophers, it has lately received a great amount of attention.[48]

The epistemic theory regards the paradoxes created by *sorites* as arguments that prove its own conception. Since the conclusion of a *sorites* argument is false, the epistemic theory argues, at least one of the premises must be false — a kind of *reductio ad absurdum*. Thus, it is argued that a sharp boundary divides heaps from not-heaps and the rich from the not-rich, and also that there is at least one number *n* for which it is not true that *n* grains are a heap, or that a person with *n* dollars is rich. Hence, for some values of *n* it is false that

If *n* grains of sand are a heap, *n*-1 grains also are a heap.

That means that vagueness arises out of our ignorance about borderline cases. But why are we so inevitably ignorant about such cases? The epistemic theory's answer is as follows (Williamson 1994, 185-243): Our cognitive mechanisms, i. e. our senses, necessarily come with a margin of error. Suppose we are looking at a spectrum of coloured spots starting with red and gradually turning into orange, yellow, and so on. Suppose also that we believe a certain spot *s* to be the last red spot of the spectrum. According to the epistemic theory, that belief cannot count as knowledge, because the truth of our belief to a certain degree is a matter of luck, since we cannot really distinguish that spot

---

[47] I do wish to point out at least one problem with the logics of degrees of truth. Take the following legal statement: 'Legally, *x* ought to convict *y* of murder at night'. Let us assume that the degree of truth of '*x* committed murder' is 0.7 (we are not absolutely sure whether it was an act of intentional killing) and that of '*x* acted at night' is 0.2 (though it was beginning to get dark, there was still a lot of light). The degree of truth of the statement '*x* committed murder, and he did it at night' is then 0.2, since the conjunction, so to speak, follows the worse of the two parts. Now, the degree of truth of '*x* did not commit murder, and he did it at night' also is 0.2 (since 0.2 is lower than the 0.3 degree of truth of '*x* dit not commit murder'). But that both statements should have the same degree of truth is highly counterintuitive and would lead to a rather extravagant analysis of the degrees of truth of legal propositions.

[48] The most complete defence of that theory formulated in recent years is that of Williamson 1994.

from its neighbours in the spectrum. But knowledge is justified true belief and thus requires that truth is not encountered *accidentally*. Therefore, the fact that there is a margin of error in our perceptive apparatus means that we will never *know* which one is the last red spot in the spectrum.

What the epistemic theory does not tell us is *what* we would need to know in order to have a justified true belief in borderline cases. It presupposes, rather than proves that our concepts have sharp boundaries.

Advocates of the epistemic theory often argue with some kind of *petitio principii*. Thus, for instance, Horwich's argument (Horwich 1990, 80-87; cf. also Williamson 1994, 187-190) for rejecting *sorites*, based on the epistemic theory, depends on his unquestioned acceptance of bivalence. The argument runs as follows (Horwich 1990, 80):

„How can truth-value gaps be admitted? They can't be. Given any logic that licenses the principle of contraposition:

(9) (a is F → a is G) → (a is not G → a is not F),

we can go from the minimal theory of falsity
(10) <p> is false ↔ <p> is not true
to
(11) <p> is not false ↔ <p> is not not true.

Therefore
(12) <p> is not true and not false → <p> is not true ∧ <p> is not not true."

Horwich concludes: „Thus we cannot claim of a proposition that it has no truth-value, for that would imply a contradiction." Now, let us take a closer look at this argument. (10) and (11) are formulations of bivalence, according to which a proposition is either true or false. That means that there are no propositions without a truth-value. However, the antecedent of (12) implies that such propositions do exist, and thus, by way of (10) and (11), a contradiction is produced. But that contradiction does not arise because of an intrinsic inconsistence of the rejection of bivalence, but because the acceptance of bivalence is inconsistent with the existence of propositions without a truth-value. We could also accept the antecedent of (12) and reject the bivalence presupposed by (10) and (11). And that is precisely what *TL* does. In the notation of *TL*, (10) would be equivalent to

$$(10') \; T\neg p \leftrightarrow \neg Tp$$

and (11) to

$$(11') \; \neg T\neg p \leftrightarrow \neg\neg Tp.$$

(10') is not *universally* true in *TL*, since it may be the case that it is not true that p and it is not false that p. That is, the biconditional of (10') is valid from left to right, but is not universally valid from right to left: '$\neg Tp$' is compatible with '$\neg T\neg p$'. Inversely, (11') is valid from right to left, but not from left to right.[49]

Hence, Horwich's argument does not prove that the rejection of bivalence is inadequate because it produces a contradiction; he only proves that the acceptance of bivalence in (10) and (11) is inconsistent with its rejection, i. e., the antecedent of (12).

Now, for the epistemic theory of vagueness it is not enough to show that if one assumes bivalence, then it is inconsistent to hold that propositions about borderline cases containing vague concepts have no truth-value; it must also — independently — show that the rejection of bivalence is inconsistent, or at least inadequate.

The epistemic theory of vagueness presupposes a *realist* conception of propositions with vague concepts: realist, that is, from the *metaphysical* point of view — since it accepts that, independently of our knowledge, there is something in the world that can make our propositions about borderline cases true or false; from the *semantic* point of view — since it accepts that the meaning of propositions about borderline cases is determined by their truth-conditions, independently of whether or not we are able to find out what they are (in fact, it maintains that we are not); and from the *logical* point of view — propositions containing vague concepts behave according to bivalence: they are all either true or false.

It should be noted that the epistemic theory is compatible with my analysis of the truth-conditions of legal propositions. One can hold that there are pure legal propositions without a truth-value — in the case of an antinomy or a legal gap —, whereas all propositions of fact, which are an element of all applicative legal propositions, are bivalent, i. e., are always true or false.

However, I will hold that the source of vagueness is not *epistemic*, but *semantic*.[50] In von Wright's words (1984c, 39):

> „A great many concepts used in discourse about contingent matters of experience are not sharply bounded but have a 'fringe of vagueness' ... which accounts for the existence of 'borderline cases' of which it is hard to tell whether they fall under the concept or not. 'Hard to tell' does not here point to limitations of our epistemic faculties of ascertaining and observing things. The phrase refers to the absence of *criteria* for applying the concepts to the case at hand."

In such instances of a proposition containing vague concepts and referring to cases that fall into the *zone of penumbra* of such a concept, I will say that the proposition has no truth-value.

We may even want to say that in the zone of penumbra of some concept F, in a certain sense x is F, and in some other sense x is not F. Von Wright (1984c, 38) distin-

---

[49] The acceptance of propositions without a truth-value ('$\neg Tp \wedge \neg T\neg p$', in terms of *TL*) is inconsistent — as I have shown in 6.b — with the law of bivalence ('$Tp \vee T\neg p$')and, therefore, that law is not valid in *TL*.

[50] It has also been suggested (Lewis 1983, 228 f., together with Lewis 1969, ch. 5) that the source of vagueness is not *semantic*, but *pragmatic*. The idea is this: All languages are *precise* (in Frege's sense), i. e., they contain no vague concepts; but people use several languages, rather than a single one. The linguistic conventions of a population do not select one particular point, but a fuzzy region in the space of precise languages. Our language is only a „hybrid resonance" (Lewis 1969, 201) of the possible languages that shape it.

guishes two senses of truth: truth in the broad sense *(T')*, and truth in the strict sense (*T*, which behaves just as in *TL*). It is true in the broad sense that *x* is *F* if it is not false that *x* is *F*. Thus, in the broad sense it may be the case that it is true that *x* is *F* and that it is false that *x* is *F*, since 'true in the broad sense' is equivalent to 'not false in the strict sense', i. e.,

$$T'p = \neg T \neg p,$$

and 'false in the broad sense' is equivalent to 'not true in the strict sense':

$$T' \neg p = \neg Tp.$$

Thus, to say that it is true in the broad sense that *p* and that it is false in the broad sense that *p* is the same as saying that in the strict sense it is not true that *p* and it is not false that *p*, i. e., that *p* has no truth-value.

Some of the intermediate conditional premises of *sorites* arguments, thus, have no truth-value and cannot filtrate truth to the conclusions, which are clearly paradoxical. But to say, for example, that there are values of *n* for which

If *n* grains of sand are a heap, *n*-1 grains also are a heap

has no truth-value seems to presuppose that we can precisely divide groups of grains of sand into *heaps*, *not-heaps*, and an intermediate *zone of penumbra* in which the attribution of the predicate 'heap' to a particular object generates a proposition without a truth-value. In fact, we may then not only have doubts about whether *h* is a heap, but also about whether *h* is a borderline case of the borderline cases of application of the predicate 'heap'. It may be that not only 'heap', but also 'definitely a heap' is vague. This is known as *higher-order vagueness* — since just as one can generate second-order vagueness ('definitely a heap'), one can also generate third-order vagueness ('definitely definitely a heap'), and so on.[51]

In a critique of Dworkin (1977b),[52] Raz (1979, 73) insists that a conception of vagueness that does not take higher-order vagueness into account is inadequate:

„This suggestion rests, however, on a fallacious view of vagueness. It assumes that whereas a term which is not vague divides all cases into those to which it applies and those to which it does not, a vague term divides all cases into three sets: those to which it applies 'by its indisputable core of meaning', those to which it clearly does not apply, and those in between. It is as if a term is vague because it draws two sharp dividing lines instead of one. The truth is that all, and not only some, nouns, verbs, adverbs, and adjectives of a natural language are vague. And though a vague term clearly applies to some cases, clearly fails to apply to some and doubtfully applies to others, yet it is often impossible to draw general boundary lines between the

---

[51] For a discussion of higher-order vagueness, cf. the recent works of Sainsbury 1991, Engel 1992, Wright 1992a, Heck 1993, Edgington 1993, Hyde 1994, and Tye 1994. I will not pursue this discussion here.

[52] This is a first version of his 1985, 119-145. See Dworkin's reply in the later version, 1985, 130 f. and 405, n. 3.

three categories. It is a test of adequacy of any account of vagueness that it recognizes as a central type of it the cases where vagueness is 'continuous'."

Although it does not yet solve the problem of higher-order vagueness, one way of drawing up such a tripartite division about vague concepts — a positive extension, a negative extension, and a zone of penumbra — can be found in the so-called *theory of superevaluations*.[53]

That theory assumes that our perplexity about vague predicates originates not in „the realm of how things are with the object; rather ... in the realm of how we choose to speak of the objects" (Sainsbury 1995, 34). When we are uncertain whether seventy grains of sand are a heap, then we also tend to admit the principle of tolerance (the conditional *sorites* premise); but we do not have to do this, once we realize that in the penumbra of 'heap' we can count those seventy grains under the heaps or the not-heaps *ad libitum*. Any choice is a *precision* of the concept of a heap and is admissible as long as it draws the line in the penumbra of the concept. Thus, *many precisions* are admissible. In an application of this general idea, we can say that

A proposition p — containing a vague concept — is true if and only if it is true for all its precisions; it is false if and only if it is false for all its precisions; and it has no truth-value in all other cases.

A *precision* is a way of converting a vague concept into a precise one. So now we must distinguish two senses of 'true': 'true' according to a particular precision, and 'true' according to all precisions, or *supertrue*. If a number x of grains of sand is in the penumbra of the concept of a heap, then it will be true for some precisions and false for others that x is a heap and, therefore, it will neither be supertrue nor superfalse.

The paradox has thus been solved: the principle of tolerance is false, since it is not true that

For all n, if n grains of sand are a heap, n-1 grains are also a heap.[54]

Since that proposition is false in *all* precisions, it is, we can say, *superfalse*. Thus, the second *sorites* premise is false, and a *sorites* argument is unable to filtrate truth to the conclusion.

---

53 The theory was first formulated by Mehlberg (1958) and van Fraassen (1966) in the context of philosophy of science. The application of the theory to the problem of vagueness is due to Fine (1975), Kamp (1975), Dummett (1978, 340-342), Lewis (1983). Cf. also Williamson 1994, ch. 5.

54 Putnam (1983, 285 f.) has argued, in a slightly different way, that with an *intuitionist* logic one can accept the truth of

It is not the case that for all n, if n grains of sand are a heap, then n-1 are a heap too

without being committed to accept that

There is an n such that if n grains of sand are a heap, then n-1 are a heap too.

Here, the law, valid in classical logic, that enables one to go from '$\neg\forall x\ (Fx)$' to '$\exists x\ (\neg Fx)$' is rejected.

Similarly, in a superevaluationist conception the law of excluded middle is retained: '*h* is a heap or it is not a heap' is supertrue, because it is true for all *precisions*, although '*h* is a heap' may have no truth-value.

The theory of superevaluations retains a great part of classical logic. Thus, for instance, all tautologies of classical logic are supertrue in a superevaluationist theory. However, it does not retain the classical assignation of truth to molecular propositions. A conjunction or disjunction of propositions without a truth-value can be supertrue, or superfalse, or lack truth-value. Thus, if *h* is a collection of grains in the penumbra of 'heap', then even though '*h* is a heap' and '*h* is not a heap' have no truth-value, '*h* is a heap and *h* is not a heap' is superfalse (false in all admissible precisions) and '*h* is a heap or *h* is not a heap' is supertrue (true in all admissible precisions); but '*h* is a heap or *h* is a heap' has no truth-value (being equivalent to '*h* is a heap', which is neither supertrue nor superfalse).

This characteristic of superevaluations unfortunately makes them incompatible with our truth-logic *TL*, since *T* ('it is true that') has characteristics that are incompatible with *supertrue*. Thus, for the theory of superevaluations, the law of excluded middle is supertrue. In *TL*, that would be equivalent to accepting

(1) $T(p \vee \neg p)$,

which (by axiom *A3* of *TL*) implies

(2) $Tp \vee T\neg p$,

and (2) is incompatible in *TL* with accepting propositions without a truth-value:

(3) $\neg Tp \wedge \neg T\neg p$.[55]

Perhaps one could try to construct a superevaluationist approach for all legal propositions (not only for those containing vague concepts). The idea is the following: One could regard as precisions of legal propositions all those possible worlds that could make effective the norms of the legal system the legal propositions refer to. In this way, a pure legal proposition is true if the norm it refers to is effective in all admissible possible worlds; it is false if the norm is ineffective in all admissible possible worlds, and it has no truth-value in all other cases.[56]

---

[55] Superevaluationist conceptions, however, do not share this characteristic of *TL*; for them, the law of excluded middle does not imply bivalence; cf. on this Day 1992.

[56] In the case of applicative legal propositions, the definition would become more complicated because one would have to look at the supertruth of propositions of fact with the superevaluationist theory of vague propositions. A proposition of fact is supertrue if, and only if, it is true in all admissible precisions of all admissible possible worlds, superfalse if, and only if, it is false in all admissible precisions of all admissible possible worlds, and neither supertrue nor superfalse in all other cases.

In the case of normative gaps, there are several ways of completing the normative system. Suppose there is a case *C* that has no normative solution in a system of norms *S*. We can then complete *S* by assigning to case *C*, e. g., the solution *Php* or the solution *Pp*. Now, in the admissible possible worlds in which *S* is effective with one completion, it is ineffective with the other. Therefore, legal propositions referring to *C* are neither true nor false.

In the case of antinomies or normative inconsistencies, one could regard as admissible possible worlds all those that manage to eliminate at least one of the inconsistent norms.[57] Since there is a plurality of possible worlds satisfying this requirement, legal propositions referring to inconsistent systems also have no truth-value.

However, to accept a superevaluationist approach to legal propositions would mean to give up *TL*, which expresses my own approach to the problem. Therefore, the possibility is only mentioned here.

Now, the theory of superevaluations as well as *TL* have problems with higher-order vagueness. In the case of superevaluations, this is because it is not accepted that the notion of *admissible precision* can be regarded as vague too (Williamson 1994, 156-161; Sainsbury 1995, 38 f.). In the case of *TL*, the reason is that, although *p* (which contains vague concepts) may lack a truth-value, *Tp* always has one. The predicate 'it is true that' of *TL* is not vague. And, again, *sorites* can threaten the language in which our semantic is expressed. There seem to be only three options:

(i) to accept *sorites* and to hold either that our language is inconsistent or that the world of our *ordinary life* does not exist;

(ii) to accept the *epistemic* theory, which — in fact — is hard to refute, although it seems to be on the wrong track; or

(iii) to accept the *semantic* theory, in the hope that some reconstruction of superevaluationism or *TL* will be able to meet the challenge of higher-order vagueness.

The semantic theory can confront the challenge either by showing its irrelevance or by constructing a semantic that can be expressed in a vague language which, nevertheless, does not allow the paradox to arise; for some propositions, such a semantic would neither imply that they are true, nor that they are false, nor that they are neither true nor false (Tye 1994; Sainsbury 1995, 46).

One way of trying to show the irrelevance of higher-order vagueness could be grounded on the fact that if that vagueness depends on the possibility that one is uncertain about the classifications one has performed, then it may not be enough to stop at vagueness of level 1. We may, for instance, have classified the expression '*x* is a heap' as definitely true ('*Tp*', in terms of *TL*). We then begin doubting whether, definitely, it is definitely true that *x* is a heap. Thus, perhaps we should revise our assignation and regard *x* as a borderline case of a heap, which would mean that in *TL* we now have '$\neg Tp$'. But the possibility of revising our assignations does not force us to accept higher-order

---

[57] One could consider it a criterion of *adequacy* to eliminate the least possible number of norms in order to keep the system consistent.

vagueness. We only need to accept three things: definitely true ('Tp', in *TL*); definitely false ('$T\neg p$', in *TL*); and neither definitely true nor definitely false ('$\neg Tp \wedge \neg T\neg p$', in *TL*). Our doubts about whether or not certain objects have a certain property thus do not lead us to ever more precise precisions, but only to a revision of our precisions (cf. Burns 1991, 79 f.).[58]

I prefer *(iii)*, but, as I already said, my analysis of legal propositions is compatible with *(ii)* as well. Only *(i)* is excluded, because it entails the idea that our legal propositions are inconsistent, or that they are all false.

8. *Excursus on Gaps of Cognition*

In section 6, I have distinguished between gaps of cognition (or 'gaps of knowledge', in the terminology of Alchourrón and Bulygn) — when we lack information about whether or not a particular individual case is an instance of some generic case — and gaps of recognition — when we lack a clear semantic criterion that would enable us to determine whether or not a particular individual case is an instance of some generic case because it is a borderline case of the generic case —, and I suggested that only in the second case the propositions describing the case may lack a truth-value. The intuition underlying this distinction presupposes a *realist* conception of the world of fact. In legal decisions, propositions referring to facts are a necessary element for the foundation of the conclusion reached by an organ of application. Moreover, they are propositions referring to facts of the *past*, and therefore presuppose a realist conception of the past.

Dummett (1978, 358-374), however, has challenged that realist conception of the past. He argues that antirealist arguments apply even to assertions referring to the past (Dummett 1978, 363):

> „The anti-realist's case consisted of an application to statements about the past of the general form of anti-realist argument. We learn the use of the past tense by learning to recognise certain situations as justifying the assertion of certain statements expressed by means of tense ... The only notion of truth for past-tense statements which we could have acquired from our training in their use is that which coincides with the justifiability of assertions of such statements, i. e., with the existence of situations which we are capable of recognising as obtaining and which justify such assertions."

The proposition expressed in the example of section 6 — 'On September 25, 1995, there was an uneven number of blades of grass on the Bellaterra Campus of Barcelona's Autonomous University' — would, thus, have no truth-value, since we have no way of justifying it, and certainly never will.

If we would adopt a position like that of Dummett, propositions about the past could also have no truth-value and would have to be treated like propositions referring

---

58 Though controversial, this is probably the approach most closely in accordance with *TL*. In fact, it is the reply Dworkin (1985, 130 f. and 405, n. 3) puts in the mouth of V — a legal positivist arguing in favour of vagueness and likely to share *TL* — in order to refute the attacks of R — a discussant pointing out to V that he cannot account for higher-order vagueness. Dworkin himself, however, shares neither V's nor R's arguments.

to borderline cases. They would constitute a new ground of indeterminacy for legal propositions. But then, if we have a legal statement like 'Legally, x ought to be punished with 10 to 15 years, for committing manslaughter' and there is no way of justifying the assertion that x committed manslaughter, that legal statement would express a proposition without a truth-value. That means that propositions referring to so-called *perfect crimes* would have no truth-value.

Legal constructivism does not force us to accept such an antirealist position with respect to the past. In fact, I very much doubt that it is necessary to adopt such a broad antirealist conception. But it can perhaps give plausibility to certain conceptions usually found in legal theory. Thus, for example, Kelsen holds the thesis of what he calls the *constitutive* nature of judicial sentences (Kelsen 1960, 242-246). In his view, judicial sentences do not have a merely declarative nature; rather, they first of all constitute the applicable norms, and — what is more important for the present purpose — the verification of the facts also has a constitutive function. In Kelsen's words (1960, 245):

> „The facts of a case are not understood to hold only from the moment of their determination, but from the time determined by the law-applying organ, that is, from the time at which the natural facts of the case — according to the determination of the law-applying organ — held. Thus, the determination of the conditioning facts of the case by the court is constitutive in every sense."[59]

Kelsen's position becomes more plausible if one accepts that propositions about events of the past are true or false according to the capacity to justify the statements expressing them when they are asserted. But even then, the constitutive nature of these propositions is controversial, since it may well be that without having an adequate foundation the organ of application asserts that certain events have — or have not — taken place (cf. Alchourrón and Bulygin 1991a, 309-313). But even with respect to propositions referring to facts, there may be indeterminacy.

As I already said, I do not wish to defend a global form of antirealism including that antirealist conception of the class of propositions referring to facts of the past (cf. the discussion in Wright 1993, 176-203). The constructivism adopted here for legal propositions is compatible with a realist conception of propositions about the past. But should someone wish to incorporate that antirealist conception, *TL* would offer the adequate logical instruments. For example, it would be possible to say that

(1) x did ϕ in t

has no truth-value in t_1, which is posterior to t. And that, therefore,

(2) It is true in t_1 that x did ϕ in t

---

[59] „Der Tatbestand gilt nicht erst als mit dem Zeitpunkt der Feststellung gesetzt, sondern als mit dem von dem rechtsanwendenden Organ festgestellten Zeitpunkt, das heisst mit dem Zeitpunkt gesetzt, mit dem der natürliche Tatbestand — der Feststellung durch das rechtsanwendende Organ zufolge — gesetzt wurde. Die Feststellung des bedingenden Tatbestandes durch das Gericht ist also in jedem Sinne konstitutiv."

is false. Or that it is true that

(3) It is not true in t_1 that x did ϕ in t and it is not true in t_1 that x did not do ϕ in t.

Perhaps if, in spite of the truth of (3), an organ of application maintains that (2) one can understand Kelsen's thesis that such an organ constitutes the truth of the proposition expressed in (1). The thesis is incompatible with a realist conception of propositions about the past, but it could be made compatible with an antirealist conception of such propositions — a possibility I will not analyze here.

9. Conclusions

In this chapter, I have defended a constructivist or antirealist conception of legal propositions that can show how a legal system can leave the *deontic status* of certain states of affairs indetermined. We can give the following definition of *normative determinacy* (Alchourrón 1969, Bulygin 1993):

„A state of affairs p ist *normatively determined* in a normative system α if and only if p is either positively permitted or prohibited in α, i. e., when the expression '$\mathbf{P}\alpha p \vee \mathbf{O}\alpha\neg p$' is true."

When that expression is false, the normative system is indeterminate. The expression is false when the legal propositions referring to state of affairs p have no truth-value, that is, when the propositions expressed in statements like 'Legally, p ought to be done' have no truth-value and, therefore, the propositions expressed in 'Legally, it is not true that p ought to be done' and 'Legally, it is not false that p ought to be done' are true.

This happens mainly when system α has a *normative gap* with respect to p. Thus, incomplete legal systems give rise to *indeterminacies*, and this is shown in that some legal propositions referring to incomplete systems have no truth-value.

But because of our requirement that a state of affairs p is correlated with some normative situation in α if, and only if, among the consequences of α there is a *relevant* norm correlating p with some solution, and because if α is an inconsistent system, it has no relevant consequences, in an inconsistent system any state of affairs is *normatively indeterminate* in a relevant way, although any state of affairs is normatively determined by an infinite number of irrelevant consequences.

Thus, legal propositions about an inconsistent system also have no truth-value and, therefore, such systems too give rise to *indeterminacies*. In other words, that a legal proposition is true not only presupposes that certain normative consequences belong to a certain normative system, but also that certain *relevant* consequences belong to that system, i. e., it presupposes, among other things, that the system is consistent.

In conclusion, we can say that

A generic case C_i in a legal system *LS* is *legally indeterminate* if and only if either *LS* is inconsistent or there is a gap in case C_i.

Only consistent and complete systems can be described by a class of legal propositions for which bivalence is valid, and since both properties are contingent in legal systems, there is always a possibility of *indeterminacy.*

We now need a notion of indeterminacy for individual cases. Despite the observations in section 8, I will adopt a realist position with respect to the world of fact. The only basis of indeterminacy regarding individual cases is then semantic indeterminacy, i. e., the vagueness of our concepts. We can, thus, formulate the following definition:

An individual case c_i, which is an instance of a generic case C, is *legally indeterminate* if and only if either C is legally indeterminate or c_i is a borderline case of C.

Thus, the legal proposition expressed in 'Legally, x ought to do ϕ' can lack a truth-value if, although there is a relevant consequence obligating all F to do ϕ, we are not sure whether predicate F applies to x, i. e., if x is a borderline case of the application of predicate F.

Before concluding the chapter, I wish to add two considerations *ex abundante cautela*:

(i) Controversies about *legal indeterminacy* usually concern doubts about whether certain meanings should be given to certain *norm-formulations.* Although this is an important question, to which I will return later, the purpose of this chapter has been more modest: Even in a set of norm-formulations that have already been *interpreted* — with unequivocally assigned meanings —, there is room for indeterminacy. This is one of the most important conclusions of this chapter.

This may also explain why the question of *ambiguity* has not been treated in this chapter. We can say that a linguistic expression is ambiguous if, and only if, it has more than one meaning. Thus, a *term* is ambiguous if it expresses more than one *concept*; a *statement* is ambiguous if and only if it expresses more than one *proposition*; a *norm-formulation* is ambiguous if, and only if, it expresses more than one *norm.* When we are dealing with an already interpreted set of norm-formulations, we presuppose that we have unequivocally assigned one single norm — or, if the system is consistent, more than one, but mutually compatible norms — to each norm-formulation.

We can say that while ambiguity is a property of terms, statements, and norm-formulations, vagueness is a property of concepts, propositions, and norms (cf. von Wright 1963b, 13).

(ii) The logical analysis of legal propositions performed in this chapter is based on legal constructivism. But, as can be seen in the appendix to this chapter, one does not need to adopt that position in order to accept the chapter's conclusions about *legal indeterminacy.* All that has been said about legal propositions without a truth-value can be upheld, without giving up bivalence, by distinguishing the internal from the external negation of such propositions. And with respect to semantic indeterminacy, one can accept an epistemic conception of vagueness — vagueness as a phenomenon of ignorance — in order to retain bivalence. In that case, it should be clear that vagueness no longer is a foundation of indeterminacy in a strong sense: the truth-value of the propositions at-

tributing some property to borderline cases is no longer indeterminate, only our knowledge is.

Even those who, like Quine (1970, 1-3), doubt that there exist such entities as propositions can accept the conclusions of this chapter about indeterminacy. Nothing of what has been said presupposes that the theses advanced here could not be reformulated in a nominalist language that only accepts particulars in its ontology and speaks of sentences or *token sentences* rather than of propositions.

As will be seen later, only two philosophical positions on the analysis of legal propositions are excluded: *(a)* some especially *robust* forms of philosophical realism for which states of affairs are normatively determined by some *normative reality* which is independent of the norms issued by the authorities, and *(b)* some radical forms of *skepticism*[60] for which all our legal propositions lack a truth-value.

I think that the exclusion of both positions is justified since they cannot account for certain *platitudes* underlying our use of legal propositions, especially the platitude that norm-authorities can change the normative status of our actions.

All other philosophical positions can be seen as in a kind of *overlapping consensus*[61] which, despite their deep philosophical disagreements on questions of ontology, logic and semantics, can provide a reconstruction of our use of legal propositions and of the place occupied by indeterminacy in the law.

---

[60] It should be noted that what is commonly known as *legal realism* actually is a form of skepticism totally opposed to philosophical realism.

[61] As is commonly known, the expression is due to Rawls (1987; 1993, 131-172) who applies it to his conception of justice. Here, it is used only in the sense of a consensus between 'comprehensive and reasonable doctrines'.