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Introduction

One of the most controversial issues about arguments involving deontic and ethical matters is whether statements of duty or right can be inferred from statements of fact, and conversely. Most analytical philosophers have inclined to give a negative answer, alleging that duties or rights are not implied by mere facts (or the other way round), and hence that no combination of facts can imply a duty or a right, and no combination of duties or rights implies a fact.**(*)**

Not everybody has agreed, of course. Searle (1969) famously tried to derive duty assertions from factual assertions involving promises, but his interesting attempt has tended to be regarded as a failure owing to an equivocation on the meaning of promise. Geach also defended the connection between facts and duties in certain sense.

Most philosophers in the analytical tradition have regarded deontic utterances either as not conveying any real assertion (noncognitivism) or at most as conveying a very special sort of assertion, whose content would really have nothing to do with the content of factual assertions (separatism). Noncognitivism claims that deontic assertions are not real assertions. They lack cognitive content, and are only expressions of emotions, exhortations, or complex utterances which at least in part convey a non-cognitive message which does not depend at all on what is true or exists. According to separatism factual utterances stand for states of affairs which either exist (in this world) or not, whereas deontic utterances, if true at all, would express a peculiar kind of entity – a duty or a permission – whose existence (or whose obtaining) would be independent of the existence (or obtaining) of facts or states of affairs.

A third point of view is that from Castañeda (1975: 43 and 201 ff.) who views deontic assertions as standing for some special sort of entities, namely practitions, which are related to, but different from, corresponding propositions. Thus, there will be a clear-cut semantic dichotomy in normative statements. On

the one hand, there are indicative clauses that express circumstances or factual conditions (propositions). On the other hand, there are specifically *deontic actions* considered as a deontic foci (practitions). So, the deontic statement that 'John has to give money to Lilian' stands for a practition, namely that John should give money to Lilian, adding a duty operator; that practition is not the same as the state of affairs (or proposition) of 'John's giving money to Lilian', even though there is a special relationship between the proposition and the practition.

As against all those opinions, we hold that there is a valid logical inferential rule which from duties or permissions to facts, and conversely:

1. We reject noncognitivism. But developing our line of argumentation against noncognitivism goes beyond the scope of this work.

2. We reject the view that duties or permissions are independent of facts. As we shall comment later on, many duties and permissions are contingent on facts, i.e. arise only because certain facts exist. Otherwise there would be no such duty or permission (whether moral or legal).

3. We do not need practitions. What is more, the difference between practitions and propositions is obscure and mysterious; moreover such a difference is hard to reconcile with the existence of mixed sentences, such as 'You must not go out, but, if you do, take your umbrella'. 'You go out' and 'you do' seem to stand for the same entity (in virtue of an anaphoric rule on the use of the prosentential verb 'do'), but the dichotomous view of Castañeda forbids such an identification.

Thus, we reject the three alternative grounds for the refutation of inference of facts from duties and conversely.

Deontic notions and possible-world semantics

From a model-theoretic view-point, the rejection of derivability of facts from duties – and conversely – has been explained by means of possible-world semantics for deontic logics: something, *A*, would be obligatory if each ideal world contains *A*; something, *B*, would be permissible or licit if at least an ideal world contains *B*. But no inferential link would exist between the content of ideal worlds and the content of the real (or actual) world or of any bunch of designated worlds. One of the conclusions which follow from such a view is that a duty exists whether or not the facts and conditions are so and so. What is obligatory and what is licit would not change with any change in the facts of the world.

However, this 'idealised' approach to deontic notions has lead to a huge array of severe paradoxes**(i)**: contrary-to-duty paradox, Good Samaritan paradox, gentle murder paradox, second best plan, Ross paradox, etc. The core question involved

in such a paradoxes is the 'ensuant obligations'; i.e. duties that arise as a result of an antecedent factual situation – often one wherein another duty has been breached. Many duties are cases of the *lesser evil*. Thus, for instance, resorting to war is forbidden in accordance with current international law, but, in case such a prohibition is transgressed, new obligations arise as regards how to conduct the war (in accordance with international humane conventions, such as the Red Cross agreements).

The reason is that, as Jackson & Pargetter (1986) have shown, many factual situations give rise to ensuing obligations which would not arise at all unless those factual situations existed in the first place.

This has lead us to define the 'paradox of lesser evil' as the pivot around which all deontic paradoxes hinge: A general principle of morals and law lays down that, if we act wrongly, at least, we have to act so as to implement the lesser evil. However, to the extent that lesser evil is realised, evil is indeed done; but then – by means of the inference rule of logical closure**(ii)** evil – without conditions – must be done.

Thus, the rule of logical closure has to be waived in deontic logic and the usual possible-world semantics has to be seriously reworked, with the result that deontic logic must not been regarded as a particular kind of modal logic (except in a quite stretched sense, dropping almost all the usual laws of standard modal logics**(iii)**). (Nonetheless, as we shall see below, our approach is closer to modal logic in another respect.)

The persistence of the parallelism or isomorphy between modal logic and deontic logic is not arbitrary, though. When speaking about duties people used to be supposed to refer to what is normatively (morally or legally) necessary. Thus, obligatoriness is construed as a kind of necessity.

Nevertheless, obligatoriness has nothing to do with realization in ideal or optimal worlds. Many obligations and rights exist only because the world is in fact thus or so. Many obligations and rights arise only when certain factual circumstances are met; they exist in virtue of the world being as it is and not otherwise. So, duties are not the same in all worlds or situations. This is the main reason why all ideal-world approaches to logic of norms are doomed.

A consequence of this non-modal approach to deontic logic is the rejection – along with rule of closure – of several classical deontic principles, which involve the idealized view of normative contexts. Such is the case with deontic simplification: O(p(q) (Op. If 'O(p(q)' is true then all ideal worlds would contain p(q and hence

would also contain *p* and *q*.

But that does not prove that the duty of p follows from joint obligation of *p* and *q*. It is possible that a part of the conjunction – for instance *p* – should not be realized upon which the initially obligatory situation *p* and *q* would become prohibited (or anyway non-obligatory), since there would be no longer any reason for *q* to be discharged**(iv)**. Thus, if, in virtue of a contract, a certain firm is bound to deliver a new computer and take away an old one, the firm is not bound to take away the old one as an isolated fact; for, suppose they fail to deliver the new computer, but, at the same time, they intend to take away your old one, alleging the contract compels them to perform that task. Of course, the duty to perform the latter action taken on its own was meant to be dependent on the former action being performed too.

Deontic detachment
A workable logic of norms cannot be developed without an adequate rule of deontic detachment. A deontic detachment schema is necessary to show how conditional obligation-sentences play the important role in normative argumentation they seem to play (Åqvist, 1967; Danielsson, 1968). Van Eck called that problem 'the commitment and detachment dilemma':
1. Detachment should be possible. How can we take seriously a conditional obligation if it cannot, by way of detachment, lead to an unconditional obligation.
2. Detachment should not be possible. If we allow detachment, the sets like the above (contrary-to-duty paradox) are inconsistent, but they represent perfectly possible and deontically interesting situations (ensuant obligations). (Van Eck, 1982, 263).
But what is the proper formal representation of conditional obligation? What is then the adequate formalization of deontic detachment? Standard deontic logics have represented conditional obligations in two ways.
On the one hand, some scholars (Alchourrón & Bulygin, 1971; Jones & Pörn, 1985) have proposed the hybrid formulation, which means they have viewed the conditional duty as an implication with a factual antecedent and a deontic consequent. Even though such a hybrid formulation – with a narrow scope of the deontic operator – allows directly deontic detachment, via *modus ponens*, it is unsatisfactory on several counts. For one thing, when uttering that statement, the law-giver would not be uttering a command but a sentence whose consequent is prefixed with a deontic qualification. For another, since 'If *p*, then *q*' is equivalent

to the disjunction of *q* and strong negation of *p*, a way to fulfil the norm is by completely refraining from p (the condition) – which is not accounted for by the narrow-scope rendering of conditional obligations. So, when the law demands that whoever has harmed another person has to give her a compensation, it is in effect commanding us to refrain from harming other people or else make up for the inflicted harm; consequently there are two different ways to fulfil the rule, namely: by refraining from causing harm or by giving adequate compensation.

On the other hand, a conditional obligation can be represented by means of a deontic operator with a wide scope: It is mandatory that, if *p*, then *q*. In this case, the conditional duty is a norm as a whole, *in toto* (Von Wright, 1994-95). The problem here is that in this case standard deontic logic does not give currency to deontic detachment when the condition or factual premise is fulfilled. Take the duty to compensate the victim one has harmed; suppose Sheila has harmed Ann. In standard deontic logics, it is impossible to conclude that Sheila must indemnify Ann.

A new approach to deontic argumentation
Our line of thought leads us to a new approach to deontic arguments which makes it logically correct to draw deontic conclusions from factual premises, and conversely. We maintain that there is an inferential link between facts and duties, and between facts and permissions. Hence we claim that there are quite cogent arguments from factual premises to deontic conclusions and conversely. (The possibility of conversion is a mere application of *modus tollens*).
In order to do that we need a new deontic logic, keeping clear of any possible-world semantics approach, a logic including a principle of conditional obligation: to the extent that, it being the case that *p*, it is obligatory that *q-if-p*, to that extent at least it is obligatory that *q*. Or, to give a rule formulation: from '*it is mandatory that, if p, then q*' and '*p*' to conclude '*q*'.
Any such a rule is incompatible with standard (i.e. conventional) systems of deontic logic. The principle of conditional obligation is a corollary of the 'principle of binding option', which seems to us a fundamental axiom of deontic logic (Ausín & Peña, 2000a,b). It means that, when a situation p completely fails to occur, the obligatoriness of a disjunction between *p* and *q* implies the obligatoriness of *q*. That is to say, when someone is under a disjunctive obligation and, for whatever reason, they are either utterly unable or unwilling to perform one of the disjuncts, they are, to that extent, bound determinedly to fulfil the other disjunct.

Nonetheless, there is an asymmetry between arguing to facts from duties and the other way round. In the first case, the inference is direct, as a mere application of deontic detachment. For example, if David has the conditional duty of paying some taxes if he imports dangerous goods and David has not the obligation of pay those taxes, then (as a matter of fact) David has not imported dangerous goods.

As to how to infer duties from facts, the case is more complicated. In the above example, from the fact that David has imported dangerous goods plus the conditional obligation of paying some taxes if he imports such commodities, we, by deontic detachment, infer the duty for David to pay those taxes. In that case, the inference resorts to two premises, namely: a factual premise and a normative (conditional) one.

Now, even though they contain different prohibitions, all moral and legal systems coincide in laying down a principle of responsibility (or accountability) to the effect that transgressors are liable to pay damages or be punished (somehow or other). Such a principle can be construed in different ways (as a *regula iuris*, a juristic or interpretive maxim, or as a mandatory common-law precept of the form: 'It is obligatory that, if someone breaks the law, he should pay'). The particular sort of penance may vary, and in certain cases may be symbolic or practically ineffectual, but a normative system lacking the principle of responsibility would hardly count as one or have any claim on ruling the behaviour of intelligent beings.

A good (enough) system of deontic logic must validate all rational deductive arguments which can be carried out in all deontic or normative orders. Hence, a good system of deontic logic must contain (whether as a primitive rule or as a derived one) a rule of responsibility or a 'principle of atonement': forbidden actions must entail some sort of atonement or expiation.

Besides, all normative systems lay down a further principle, namely the harmfulness canon: harmful actions are forbidden; or, equivalently, all lawful actions are harmless: *neminem laedit qui suo iure utitur*. Harmful actions are such actions as cause harm and, besides, are committed willingly or negligently. Of course, some juridical orders maintain that you cause harm merely by belonging to a certain race, or by having homosexual relations or whatever. Whom do you harm according to those orders is quite another issue: perhaps society, or good people, or yourself. But even those orders (and of course more reasonable legal systems, too) agree on postulating that all actions are either allowed or else harmful.

So, the harmfulness canon (or assumption) is taken to be an analytical presupposition. Its particular status is open to debate again; perhaps it is an interpretive or jurisprudential constraint; but the simplest way of viewing it is as a general common-law precept, viz. that it is unlawful for any harmful action to be realized: O(Hp((p)' ('(' being strong negation**[v]**, and 'H' being a harmfulness operator, to the effect that a harm is caused by the propositional content it operates upon).

Therefore, from '*p*' and 'Hp', we infer, by deontic detachment, 'O(p'; whence, in virtue of the principle of responsibility, we infer an obligation to compensate. Which means that the harmfulness canon plus the principle of responsibility jointly validate the inference rule of atonement: from p to infer q if p is of the form *X has harmed someone (willingly or negligently)* and *q* is of the form *X must atone*, X being replaced by the same term in both sentences.

Thus, on the ground of those two implicit and basic deontic rules – which can be looked upon as analytical presuppositions, or as universally and necessarily binding precepts, or as principles of deontic logic – a mere fact (namely the fact for somebody to have willingly or negligently caused any harm) entails the duty of atonement; thus we progress from facts to duties.

Our approach can be challenged on several points, especially by rejecting either the harmfulness canon or the principle of responsibility, or anyway their status as principles of deontic logic.

We think they are correct; but, even if we are wrong on that account, our main point remains: factual conclusions can be drawn from deontic premises (and conversely) with the help of only two universally accepted premises (which are either necessarily true, or analytical, or at least espoused by almost all persons engaged in moral or legal argumentation). But then, even if we could not infer purely deontic conclusions from purely factual premises alone, we still could infer purely factual conclusions from deontic premises alone, as we have seen.

Final remark

As for the difference between modal and deontic logic, modalists think factual conclusions follow from modal premises (Lp⊢p) and conversely (p⊢ Mp), but they reject any such inference for deontic operators (any inference of the forms μp⊢q or q⊢μp, where 'μ' is a deontic operator). Nonetheless, we, non-modalists, accept such an inferences from facts to duties and conversely; oddly enough, our approach is, on that point, closer to the modal logic paradigm than standard

deontic logic.

NOTES

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[i] There is a great bibliography about deontic paradoxes. A brief account of deontic paradoxes and their intended solutions can be viewed in Ausín (2000).

[ii] The rule of logical closure means that the logical consequences of obligatory states of affairs are obligatory themselves. That rule has been considered a key element of standard deontic logics because it expresses a basic normative principle: that moral agents are committed to the logical consequences of their moral principles (Schotch & Jennings, 1981, 151).

[iii] There have been several rejections of the rule of logical closure in deontic realms: Hansson (1988), Weinberger (1991) and Ausín & Peña (1993).

[iv] In a similar way, licitness simplification is also rejected. Other classical deontic logic principles rejected are iteration and deontic addition.

[v] We refrain here from explaining the difference between simple negation, '~', and strong negation,'('. Classical logicians may take them to be mere stylistic variants.

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