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Doing Well Enough: Toward a Logic for Common-Sense Morality

Abstract. On the traditional deontic framework, *what is required* (what morality demands) and *what is optimal* (what morality recommends) can't be distinguished and hence they can't both be represented. Although *the morally optional* can be represented, *the supererogatory* (exceeding morality's demands), one of its proper subclasses, cannot be. *The morally indifferent*, another proper subclass of *the optional*–one obviously disjoint from *the supererogatory*–is also not representable. Ditto for *the permissibly suboptimal* and *the morally significant*. Finally, *the minimum that morality allows* finds no place in the traditional scheme. With a focus on the question, "What would constitute a hospitable logical neighborhood for the concept of supererogation?", I present and motivate an enriched logical and semantic framework for representing all these concepts of common sense morality.

Key words: deontic logic, supererogation, ordering semantics, indifference, optimality.

Since Urmson's 1958 classic, "Saints and Heroes", the literature on supererogation consists mostly of polemic between the friends and enemies of supererogation. With few exceptions, the constructive task of devising an alternative conceptual scheme hospitable to supererogation has taken a back seat to this polemic. (One notable exception is Chisholm. See especially [3], and [14].) Also with few exceptions, much of the work on common sense morality has neglected the importance of supererogation and the implications it has always had for such hot issues as permissible sub-optimizing, agent-centered prerogatives and the overdemandingness of utilitarianism. (Slote is a salient exception here. See esp. [18].) As a result there has been an unproductive division of labor.

Here I provide the motivation for a minor variation of a framework that I defended at length in [11] (henceforth, "**DQ**"). I believe that this framework takes a significant step toward articulating the sort of scheme that supererogation calls for, while at the same time–and not coincidentally–making a contribution to the logic of common sense morality. Compared to other topics in deontic logic and ethics, the conceptual neighborhood for supererogation has remained largely unexplored. Thus my main initial concern will be to identify key concepts, convince you that they are indeed pre-theoretically present, to distinguish often conflated concepts, to expose false presuppositions and to informally motivate various intuitive logical relations we should expect an adequate formal scheme to predict and explain.

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This "data collection" will constitute the bulk of the paper. Toward the end, I sketch a simple interpreted semantic framework that explains and predicts all the previous independently motivated data. It is my hope that this paper will be of interest to deontic logicians *and* ethicists alike, and that the latter will be hard-pressed to make the standard charge of irrelevance stick. The formal details are left to Appendix B.

I will usually employ the philosopher's term, "supererogation", in lieu of the lengthier "doing more than morality demands". However, I doubt that these two concepts are exactly coextensive, and suspect that the latter is the more fundamental notion. (Cf. **DQ**: 339-342 and [12].) I will also cast things in a way that provides the greatest continuity with the most familiar approaches to deontic logic. With this in mind, it will be useful to begin at the beginning, with a scheme that has often been thought to rule out the very possibility of supererogation.

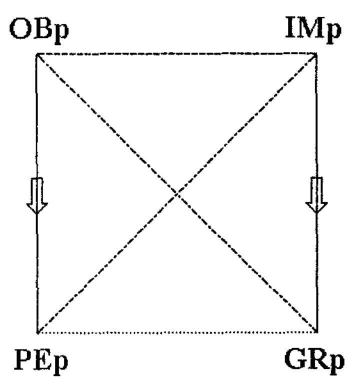
1. The traditional scheme

The five normative statuses of the Traditional Scheme are: *the obligatory*, *the permissible*, *the impermissible*, *the gratuitous (or non-obligatory)*, and *the optional.* Any of the first four statuses can be used to define the rest; for example:

$$\mathbf{PE}p \leftrightarrow {\sim}\mathbf{OB}{\sim}p \qquad\qquad \mathbf{GR}p \leftrightarrow {\sim}\mathbf{OB}p$$
$$\mathbf{IM}p \leftrightarrow \mathbf{OB}{\sim}p \qquad\qquad \mathbf{OP}p \leftrightarrow ({\sim}\mathbf{OB}p \;\&\; {\sim}\mathbf{OB}{\sim}p).$$

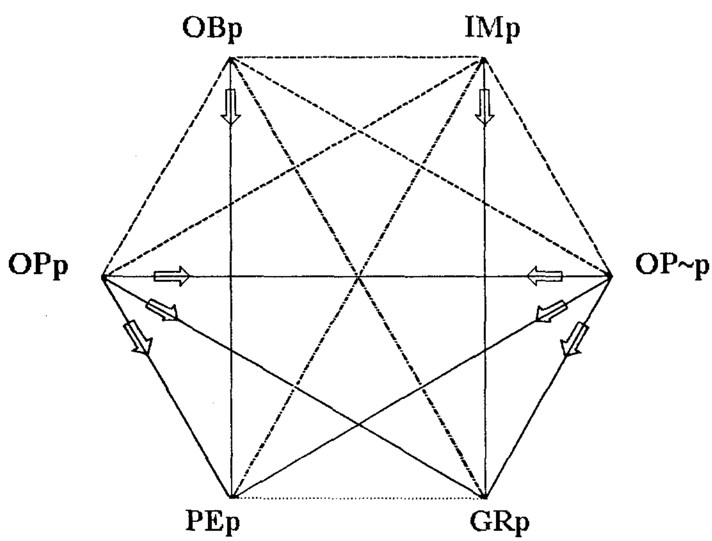
(Such formuli should be taken as items that our later semantics is to validate.) Call this "The Traditional Definitional Scheme (TDS)", but note my use of "optional" for the last operator.

In addition to TDS, it is traditionally assumed that the Aristotelian Square (traditionally conceived–with existential import) has an exact analogue, "The Deontic Square" (DS)":

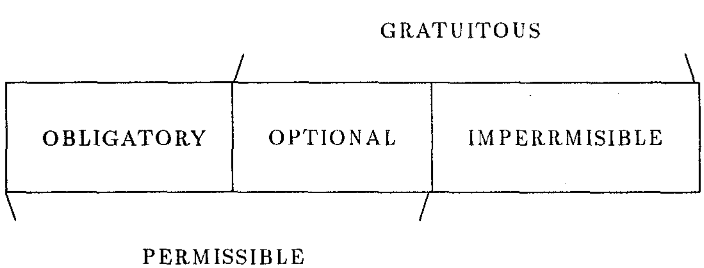


Arrowed lines represent implications, dashed lines connect contraries, dotted lines connect subcontraries, and dotted-dashed lines connect contradictories. Syntactically: $(\mathbf{OB}p \leftrightarrow {\sim}\mathbf{GR}p)$ & $(\mathrm{IM}p \leftrightarrow {\sim}\mathbf{PE}p)$ & ${\sim}(\mathbf{OB}p$ & $\mathbf{IM}p)$ & ${\sim}({\sim}\mathbf{PE}p$ & ${\sim}\mathbf{GR}p)$ & $(\mathbf{OB}p \rightarrow \mathbf{PE}p)$ & $(\mathrm{IM}p \rightarrow \mathbf{GR}p)$.

And if we add nodes for *optionality*, we get a "Deontic Hexagon":



"The Traditional Threefold Classification (TTC)": is also part of the traditional view:



The three cells are intended to be mutually exclusive and jointly exhaustive. Syntactically: $(\mathbf{OB}p \vee \mathbf{OP}p \vee \mathbf{IM}p)$ & $[{\sim}(\mathbf{OB}p$ & $\mathrm{IM}p)$ & ${\sim}(\mathbf{OB}p$ & $\mathbf{OP}p)$ & ${\sim}(\mathbf{OP}p$ & $\mathbf{IM}p)]$.

Now DS and TTC, when reduced via TDS, are tautologically equivalent to the familiar No Conflicts principle:

$$\text{NC}: \ \sim(\mathbf{OB}p \ \& \ \mathbf{OB}\sim p).$$

For DS becomes $(\mathbf{OB}p \leftrightarrow \sim\sim\mathbf{OB}p)$ & $(\mathbf{OB}\sim p \leftrightarrow \sim\sim\mathbf{OB}\sim p)$ & $\sim(\mathbf{OB}p$ & $\mathbf{OB}\sim p)$ & $\sim(\sim\sim\mathbf{OB}\sim p$ & $\sim\sim\mathbf{OB}p)$ & $(\mathbf{OB}p \to \sim\mathbf{OB}\sim p)$ & $(\mathbf{OB}\sim p \to \sim\mathbf{OB}p)$, and the first two conjuncts are tautologies, but the remaining four are each tautologically equivalent to NC. Similarly, TTC becomes $(\mathbf{OB}p \vee (\sim\mathbf{OB}p$ & $\sim\mathbf{OB}\sim p) \vee \mathbf{OB}\sim p)$ & $[\sim(\mathbf{OB}p$ & $\mathbf{OB}\sim p)$ & $\sim(\mathbf{OB}p$ & $(\sim\mathbf{OB}p$ & $\sim\mathbf{OB}\sim p))$ & $\sim((\sim\mathbf{OB}p$ & $\sim\mathbf{OB}\sim p)$ & $\mathbf{OB}\sim p)]$, and the exhaustiveness clause is tautological, as are the last two conjuncts of the exclusiveness clause, but the first conjunct of that clause is just NC again. Likewise for the assumptions that *The Gratuitous* is the union of *The Permissible* and *The Obligatory* and that *The Permissible* is the union of *The Obligatory* and *The Optional*. (See **DQ**, pp. 42-46.)

Of course RE, $\vdash p \leftrightarrow q \Rightarrow \vdash \mathbf{OB}p \leftrightarrow \mathbf{OB}q$, is also often tacitly endorsed by Traditional Schemers. But this is not relevant here. For by the "Traditional Scheme", I am simply referring to a bit of unsystematic deontic folklore (what many of us heard in analytic ethics courses), exhausted by the mention of TDS plus DS and TTC. Formalized, it is the result of enriching a language of classical sentential logic with the five operators above, and adding TDS and NC to a classical sentential logic (SL) for the language. So NC is *the* fundamental deontic presupposition of the Traditional Scheme (aside from TDS itself).

Although the presence or absence of NC represents perhaps the most fundamental division among deontic schemes, it is routinely presupposed in classical discussions of supererogation and for the purposes of this paper, I assume we are dealing with concepts of overriding obligation and such for which no-conflicts principles are sound. (Cf. **DQ**, pp. 29-32. I will take up a conflict-allowing version of this scheme in [17].) I also presuppose two familiar principles that extend the Traditional Scheme to "Standard Deontic Logic (SDL)":

Necessitation (NEC): $\vdash p \Rightarrow \vdash \mathbf{OB}p$;
Principle K: $\vdash \mathbf{OB}(p \to q) \to (\mathbf{OB}p \to \mathbf{OB}q)$.

These are also controversial principles, but including them is convenient and it will facilitate accessibility to build on the most familiar deontic system. (I also believe that casting a logic for supererogation this way will yield a deeper insight into the "paradoxes" that constitute some of the main objections to SDL. See [12].) I assume throughout that we have the power of SL, and the reader is reminded that RE is derivable in SDL. I now turn to identifying the key concepts of our scheme, as well as some of their more salient logical interrelationships.

2. Supererogation, moral indifference and moral optionality

An infant is trapped in a burning building. The fire has reached a very dangerous stage. Even the firefighters have rightly concluded that the situation is too dangerous to obligate a direct rescue attempt. The mailwoman passes by. Seeing the firefighters restraining the frantic parents, she quickly sizes up the situation. Charging into the building and making her way to the top floor, she finds the infant still alive. On the verge of passing out, and severely burned, she drops the child from one of the shattered windows to safety. (Cf. [4].)

Our mailwoman's performance is plainly supererogatory, and a moments reflection will reveal that we must endorse "The Optionality of Supererogation", "The Non-Indifference of Supererogation"–and thus "The Optional Non-Indifference of Supererogation", as well as "The Optionality of Indifference":

OS: $\mathbf{SU}p \rightarrow \mathbf{OP}p$

NIS: $\mathbf{SU}p \rightarrow {\sim}\mathbf{IN}p$

ONIS: $\mathbf{SU}p \rightarrow (\mathbf{OP}p \;\&\; {\sim}\mathbf{IN}p)$

OI: $\mathbf{IN}p \rightarrow \mathbf{OP}p$

But the friend of supererogation *must* resist the converse of OI, for he is committed to "Optionality With a Difference":

OWD: $\mathbf{OP}p \not\rightarrow \mathbf{IN}p$

(Such "crossed-out" conditionals indicate conditionals our semantics is to invalidate.) As we shall see, herein lies what Urmson took to be the broader significance of recognizing supererogation.

So already we must expand TTC:

<table>
<tr><td></td><td colspan="2">/ OPTIONAL \</td><td></td></tr>
<tr><td rowspan="2">OBLIGATORY</td><td>?</td><td rowspan="2">INDIFFERENT</td><td rowspan="2">IMPERRMISIBLE</td></tr>
<tr><td>SUPEREROGATORY</td></tr>
</table>

And let me note in passing that *moral significance* is easily defined via indifference (and vice versa):

$$\mathbf{SI}p \leftrightarrow {\sim}\mathbf{IN}p.$$

Note also that p is morally indifferent (or significant) if and only if ${\sim}p$ is. For to say that it is morally indifferent that p is to say that it is a matter of moral indifference whether p or $\sim p$, and surely the order of the occurrence of "p" and "$\sim p$" in the latter is itself a matter of logical indifference. (The "deeper" logic of indifference concepts will be taken up elsewhere. See **DQ**, pp. 448-449 for a sketch.) Thus we must endorse "The Indifference of Indifference to Negation":

IIN: $\mathbf{IN}p \leftrightarrow \mathbf{IN}{\sim}p$.

(Although this strikes me as a compelling constraint on any indifference concept, [16] endorses a scheme that is inconsistent with it.)

Likewise for "The Indifference of Optionality to Negation":

ION: $\mathbf{OP}p \leftrightarrow \mathbf{OP}{\sim}p$.

And this follows already: by definition, $\mathbf{OP}p$ iff (${\sim}\mathbf{OB}p$ & ${\sim}\mathbf{OB}{\sim}p$); but by SL and RE, (${\sim}\mathbf{OB}p$ & ${\sim}\mathbf{OB}{\sim}p$) iff (${\sim}\mathbf{OB}{\sim}p$ & ${\sim}\mathbf{OB}{\sim\sim}p$), that is, iff $\mathbf{OP}{\sim}p$.

You may have wondered why our last diagram partitioned the nonindifferent optional acts into those that are supererogatory and those that are not. For if not, we could define supererogatory actions as non-indifferent optional actions. So why not endorse "The Sufficiency of Optional Non-Indifference for Supererogation"

SONS: $(\mathbf{OP}p \mathbin{\&} {\sim}\mathbf{IN}p) \rightarrow \mathbf{SU}p$?

We are now in a good position to see why not. Suppose $\mathbf{SU}p$. By ONIS, $\mathbf{OP}p$ & ${\sim}\mathbf{IN}p$. Then by ION and IIN, $\mathbf{OP}{\sim}p$ & ${\sim}\mathbf{IN}{\sim}p$. Thus SONS yields $\mathbf{SU}p \rightarrow \mathbf{SU}{\sim}p$. And that's the rub. For surely it is absurd that if you can supererogate, then it is inevitable that you will. (Note that this argument is independent of the issue of whether or not we should recognize a special category of permissible *offenses*, a topic I take up in [14].)

Indeed, it is plausible to think that there can be "No Supererogatory Conflicts":

NSC: ${\sim}(\mathbf{SU}p \mathbin{\&} \mathbf{SU}{\sim}p)$

For suppose that A is supererogatory. Then performing A while doing only permissible things must guarantee doing more than the minimum. But then presumably there must be permissible ways of not performing A that don't involve doing more than the minimum. So assuming that you do nothing but permissible things, A's nonperformance can't guarantee that you have done anything beyond the minimum, and hence it can't be supererogatory.

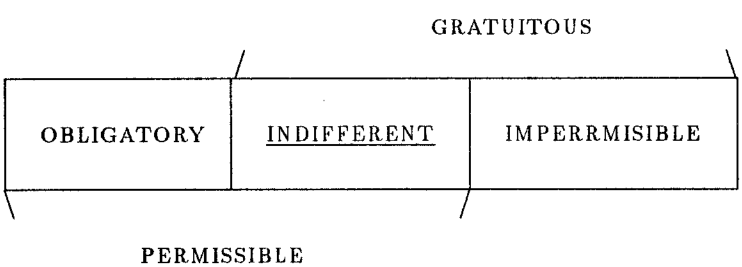
I now turn to a scheme that has been routinely confused with the Traditional Scheme.

3. The strong threefold classification and moral rigor

There is a thesis that closely parallels TTC and is thus easy to confuse with it. Such confusion has been widespread among ethicists and deontic logicians alike, and this partially accounts for why devising a logic for supererogation has been "program resistant". (See **DQ** Ch.2 and [10].) As we'll see, the identification of these two parallel theses is due to an equally widespread conflation of two distinct normative statuses. The crucial component of the thesis is "Strong Exhaustion":

SEXH: $\mathbf{OB}p \vee \underline{\mathbf{IN}p} \vee \mathbf{IM}p.$

SEXH presupposes that morality rules with an "iron fist" on all morally significant actions: that for such acts, morality will either demand that they be done or demand that they not be done. Since it is hard to imagine why anyone who accepted NC would want to reject the exclusiveness of these three categories (including those who would prefer to go without SEXH), I will assume that SEXH gives birth to "The Strong Threefold Classification (STC)":



STC is the result of replacing "optional" with "indifferent" in the relatively innocuous TTC–and the result is hardly innocuous, as it is plainly equivalent to "Moral Rigor":

MR: $\mathbf{OP}p \leftrightarrow \mathbf{IN}p$

With this as background, let's turn to what Urmson took to be the broader significance of supererogation.

4. Urmson's constraint

"The threefold scheme must go!" has often been the battle cry of the friends of supererogation since [20]. In the traditional context, the Strong Classification is equivalent to Moral Rigor, which precludes the possibility of supererogation by ONIS. So ONIS is used to place the onus on those who support STC. But as an argument against the *Traditional* Classification, this is a *non sequitur*. When supererogationists rally behind "the threefold scheme must go", the version of the classification they *should* intended, is the *Strong* Classification. But ethicists and deontic logicians are guilty of conflating the two strikingly similar classifications in virtue of conflating moral indifference with moral optionality–and to the extent that moral indifference was targeted for representation, classical deontic logicians failed to represent one of their target concepts. (See **DQ** Ch.2 and [10]. In deontic logic, this confusion goes right back to the beginning, [21]. Once again, Chisholm's work is an exception.) Ironically, this conflation even occurs in the opening paragraph of Urmson's classic on the subject, but what he intends is clear. Any scheme that entails STC (or MR) is inconsistent with the possibility of supererogation. So we can take Urmson's Constraint on deontic schemes to be:

UC: $\mathbf{IN}p \rightarrow \mathbf{OP}p, \text{but} \mathbf{OP}p \not\rightarrow \mathbf{IN}p.$

I will now suggest various expansions of the scheme developed so far, beginning with a uniformly overlooked notion that is pivotal to a logic for supererogation and common sense morality.

5. Doing the minimum

If a given action is supererogatory for me, what does this tell us? Well, as the story goes, in performing it "I do more than morality demands of me". But just what does this mean? At first, it sounds like supererogation amounts to merely doing more than those things that morality demands. But it is virtually impossible to do what you are obligated to do without also doing those things in particular ways, ways that are not themselves obligatory. (See [3] and [19].) So on this analysis, it would be virtually impossible not to supererogate. Only in Hollywood is it that easy to be a "hero".

Consider a better picture. Suppose that in virtue of promising to contact you, I become obligated to do so. Suppose also that I can fulfill this obligation two ways: by writing you or by stopping by. (Imagine you're an eccentric who hates phones.) Add that I am too busy to permissibly do both. Finally suppose that I do better by paying you a visit than by writing you. Then if *I discharge my obligations minimally*, I will write you. This is the pivotal notion here. The important thing to note is that what I do in discharging my obligations minimally is not to be confused with doing merely what morality demands. For morality demands merely that I contact you and that I don't both write and visit; whereas discharging my obligations minimally includes these *plus* writing you. And it should be plain that, despite its absence in the literature, such a notion is vital to the concept of supererogation. For if it is possible for me to discharge my obligations in a better than minimal way, then it ought to be possible for me to discharge them in a merely minimal way–and vice versa. (I slough over certain subtleties having to do with the contention that there may be, at least in one sense, nothing answering to "*the* minimum that duty demands", because there may be lower and lower ranked alternatives without end. Similarly for the case of "doing *the* optimum". The official semantics will take these unusual possibilities into account.)

Let "$\mathbf{MI}p$" mean that doing the minimum involves acting in such a way that p. Intuitively, doing the minimum "involves" acting in such a way that p just in case the agent is unable to do the minimum unless p occurs. The following are to be expected:

$$\mathbf{MI}p \rightarrow \mathbf{PE}p$$

$$\mathbf{OB}p \rightarrow \mathbf{MI}p$$

$$\mathbf{MI}p \not\rightarrow \mathbf{OB}p)$$

$$\mathbf{MI}p \rightarrow {\sim}\mathbf{IN}p$$

$$\sim(\mathbf{MI}p \ \& \ \mathbf{MI}{\sim}p)$$

First, if all the minimal ways to discharge your obligations yield p, then p is compatible with discharging all your obligations and thus p's permissible. Secondly, whatever is obligatory is involved in doing the minimum since you can't discharge your obligations minimally without discharge them. But the converse fails. As we saw above, doing the minimum may (typically does) involve things that are not obligatory. (But it needn't. The subsequent semantics will allow models where $\{p : \mathbf{MI}p \text{ at } i\} = \{p : \mathbf{OB}p \text{ at } i\}$.) However, nothing the minimum involves can be a matter of indifference. For suppose doing the minimum involves p. Well, p is indifferent only if ${\sim}p$ is–by IIN. And if you can do the minimum only if p, then ${\sim}p$ rules out your doing the minimum. But that you do not do the minimum, whether by doing less or by doing more, is hardly a matter of indifference: if you do less, you do something impermissible; if you do more, you do something supererogatory. So ${\sim}p$, and hence p, is not a matter of indifference. Finally, note that if you can do the minimum only if p, then it is not the case that you can do the minimum only if ${\sim}p$. (Recall that we are assuming NC).

I think that in addition to the no conflicts principle just noted, **MI** also satisfies precisely the remaining two "internal" logical principles of SDL:

$$\mathbf{MI} - NEC : \text{If } p \text{ is a logical truth, so is } \mathbf{MI}p.$$

$$\mathbf{MI} - K : \mathbf{MI}(p \to q) \to (\mathbf{MI}p \to \mathbf{MI}q)$$

Assuming I have obligations (a consequence of NEC), then discharging my obligations in a minimal way must involve acting in such a way that it is either raining or not; and if discharging my obligations minimally involves attending-conditional-on-promising-to-do-so, and it involves promising to attend, then it must also involve attending.

MI's sharing its (in-isolation) logic with **OB** entails our first "symmetry principle". Where "*" and "#" are any deontic operators, let $p[* - \#]$ be the result of systematically swapping all occurrences of * and # in p. For example, $(\mathbf{OB}p \to \tilde{}\mathbf{MA}\tilde{}p)[\mathbf{OB} - \mathbf{MA}] = (\mathbf{MA}p \to \tilde{}\mathbf{OB}\tilde{}p)$. So swapping, unlike ordinary substitution, is symmetrical: $p[* - \#] = p[\# - *]$. Now say p is *-Pure when p's only deontic operator occurrences (if any) are of * alone; then:

> <u>**OB**-**MI** Interchange</u>: If p is **OB**-pure or **MI**-pure, then p is a logical truth iff $p[\mathbf{OB} - \mathbf{MI}]$ is.

The semantic picture to be offered will confirm this and the previous claims. Let me now turn to an obvious mirror image of **MI**.

6. Doing the maximum

If morality allows me to do the minimum, then it is to be expected that morality also allows me to do better. Indeed, presumably morality will recommend that I do the maximum (optimum). Returning to the previous example, morality will allow me to visit you instead of writing, and if I do, then I will have conducted myself optimally. But I needn't, since I can write you instead. So suboptimizing can be permissible. We can expect no less from an adequate conceptual scheme for supererogation.

Let "**MA**p" mean that doing the maximum (what is optimal) involves acting in such a way that p. Since **MI** and **MA** appear to be mirror images of one another, we should expect **MA** to satisfy an analogue of **OB**-**MI** Interchange:

> <u>**OB**-**MA** Interchange</u>: If p is **OB**-pure or **MA**-pure, then p is a logical truth iff $p[\mathbf{OB} - \mathbf{MA}]$ is.

Together, these two principles imply that **MI** and **MA** are likewise interchangeable:

> <u>**MI**-**MA** Interchange</u>: If p is **MI**-pure or **MA**-pure, then p is a logical truth iff $p[\mathbf{MI} - \mathbf{MA}]$ is.

And the latter is just a special case of the following more general symmetry principle entailed by the semantics to be offered:

> General MI-MA Interchange: If p contains any occurrences of **OB**, **PE**, **IM**, **GR**, **OP**, **IN**, **SI**, **MI** and\or **MA** (any of the operators introduced so far except **SU**), then p is a logical truth iff p[**MI** – **MA**] is.

As we shall see, it is significant that **SU** must be excluded.

Before moving on, let me note one fundamental property of moral indifference that we can now express, "Indifference Exclusion" (exclusion with respect to the "strong" operators of our scheme):

IE: $\mathbf{IN}p \rightarrow (\char`~\mathbf{OB}p \;\&\; \char`~\mathbf{MI}p \;\&\; \;\&\; \char`~\mathbf{MA}p \;\&\; \char`~\mathbf{OB}\char`~p \;\&\; \char`~\mathbf{MI}\char`~p \;\&\; \char`~\mathbf{MA}\char`~p)$.

This is also a consequence of the foregoing. Assume $\mathbf{IN}p$. By UC, we get $\mathbf{OP}p$, and hence $\char`~\mathbf{OB}p$. Then by **OB**-**MI** Interchange and **OB**-**MA** Interchange, we also get $\char`~\mathbf{MI}p$ and $\char`~\mathbf{MA}p$. But given IIN, our assumption also yields $\mathbf{IN}\char`~p$, from which the three remaining conjuncts follow analogously.

7. Supererogation revisited

With our minimality concept in hand, I think we can define supererogation. Consider the following characterization of a state of affairs: there is some permissible way you can bring it about and the only such ways are ones where your performance is superior to any performance you might put in while discharging your obligations in a merely minimal way. This sounds like a characterization of supererogation, and it suggests the following:

$$\mathbf{SU}p \leftrightarrow \mathbf{PE}p \;\&\; \mathbf{MI}\char`~p$$

First, as we've already seen, whatever is supererogatory must be permissible, and its nonperformance must be involved in discharging your duties in a minimal way–else you could see to p while doing no more than the minimum. So the proposed definiens appears to be necessary. (Incidently, this is why **SU** had to be excluded from General **MA**-**MI** Interchange. $\mathbf{SU}p \rightarrow \mathbf{MI}\char`~p$, unlike $\mathbf{SU}p \rightarrow \mathbf{MA}\char`~p$, is a logical truth.) Now consider the definition's sufficiency. Suppose p is permissible and that doing the minimum involves $\char`~p$. Then there is a morally acceptable performance you can put in that includes seeing to p and that is precluded by your doing the minimum. But then the only way you can permissibly see to p is if you put in a performance that is *superior* to any performance you put in while doing the minimum. So the definiens appears to be sufficient also. The concept of *exceeding* *the minimum morality demands* seems to itself demand the concept of *a minimum*[1].

"The Contingency of Supererogation" and "RE for **SU**" are intuitively plausible:

CS: If p is non-contingent then $\sim\mathbf{SU}p$ is a logical truth.

SU-RE: If p and q are logically equivalent, so are $\mathbf{SU}p$ and $\mathbf{SU}q$.

And they follow from the foregoing. Suppose p is logically true. We get $\mathbf{OB}p$ from NEC, $\sim\mathbf{OB}\sim p$ from NC, $\sim\mathbf{MI}\sim p$ from **OB-MI** Interchange and then $\sim\mathbf{SU}p$ by definition. Suppose p is logically false. $\mathbf{OB}\sim p$ follows from NEC, then $\sim\mathbf{PE}p$ by definition and then $\sim\mathbf{SU}p$ by definition. Secondly, suppose p is logically equivalent to q. We get $\mathbf{PE}p \leftrightarrow \mathbf{PE}q$ and $\mathbf{OB}\sim p \leftrightarrow \mathbf{OB}\sim q$ by familiar reasoning, then $\mathbf{MI}\sim p \leftrightarrow \mathbf{MI}\sim q$ by **OB-MI** Interchange, then $\mathbf{SU}p \leftrightarrow \mathbf{SU}q$ by definition. However, RM for **SU**, $\vdash p \rightarrow q \Rightarrow\vdash \mathbf{SU}p \rightarrow \mathbf{SU}q$, fails: it may be supererogatory for you to help me, while not being supererogatory for you to help someone, as you must help your spouse. And the non-contingency principle entails RM's failure, since $\vdash p \Rightarrow\vdash q \rightarrow p$, for any q. We also now get:

$$\sim(\mathbf{SU}p \;\&\; \mathbf{SU}\sim p)$$

By definition and SL, $(\mathbf{SU}p \;\&\; \mathbf{SU}\sim p)$ entails $(\mathbf{MI}\sim p \;\&\; \mathbf{MI}\sim\sim p)$ and the latter is ruled out by NC and **OB-MI** Interchange.

There are various peculiarities of the operation of supererogation under disjunction and conjunction that can be motivated independently ([12]) and that follow from the foregoing, as can easily be confirmed:

1. $\mathbf{SU}(p \;\&\; q) \not\rightarrow \mathbf{SU}p$.
2. $\mathbf{SU}(p \;\&\; q) \not\rightarrow \mathbf{SU}(p \vee q)$.
3. $\mathbf{SU}p \;\&\; \mathbf{SU}q \not\rightarrow \mathbf{SU}(p \;\&\; q)$.
4. $\mathbf{SU}p \;\&\; \mathbf{PE}(p \;\&\; q). \rightarrow .\mathbf{SU}(p \;\&\; q)$.
5. If p is a logical truth, so is $\mathbf{SU}q \rightarrow \mathbf{SU}(p \;\&\; q)$.
6. $\mathbf{SU}p \not\rightarrow \mathbf{SU}(p \vee q)$.
7. $(\mathbf{SU}p \vee \mathbf{SU}q) \not\rightarrow \mathbf{SU}(p \vee q)$.

[1]Elsewhere, I address a possible objection to the sufficiency of the definiens: that it makes the supererogation operator susceptible to an analogue to "Ross's Paradox". See Ch. 8, and [12], a much expanded and more philosophical version of this paper.

ONIS, $\mathbf{SU}p \to (\mathbf{OP}p \,\&\, \tilde{}\mathbf{IN}p)$, is also now derivable. First, $\mathbf{SU}p \to \mathbf{OP}p$ holds. By definition, $\mathbf{SU}p \to (\mathbf{PE}p \,\&\, \mathbf{MI}\tilde{}p)$. But $(\mathbf{MI}\tilde{}p \to \mathbf{PE}\tilde{}p)$. So $\mathbf{SU}p \to (\mathbf{PE}p \,\&\, \mathbf{PE}\tilde{}p)$. Secondly, by definition, $\mathbf{SU}p \to \mathbf{MI}\tilde{}p$; by IE, $\mathbf{MI}\tilde{}p \to \tilde{}\mathbf{IN}\tilde{}p$. So $\mathbf{SU}p \to \tilde{}\mathbf{IN}\tilde{}p$. But then $\mathbf{SU}p \to \tilde{}\mathbf{IN}p$, by IIN.

That all the independently motivated principles for **SU** now follow from our proposed analysis of **SU** and the previously motivated principles for **OB**, **MI** and **IN** both reflects the explanatory power of the analysis and tends to confirm it.

8. Supererogation and optimizing

Many philosophers have assumed that supererogation entails optimizing. (**DQ**, 103-108). But it doesn't. (In [10], I argue that this thesis is also implicitly behind the widespread but mistaken assumption that utilitarianism is incompatible with the possibility of any supererogation.) Imagine this time that *two* potential victims are trapped in different parts of the burning building: Tiny Tim and Tiny Tara. As in the first case, assume that rescuing either or both is optional. In particular, imagine doing the minimum involves running down the block, pulling the fire alarm and waiting there to direct the firefighters to the scene, and add that this course of action precludes any rescue attempt on your part. Now suppose you rescue just Tiny Tim. Then you have already supererogated: you have done something better than you could have done while doing the minimum. Nonetheless, you have not put in an optimal performance. To do that, you would have to go back in and rescue Tiny Tara.

We should expect that we can sometimes discharge our duties in a variety of acceptable, yet better and better ways. There is nothing intuitive in the supposition that we can do it in only one of two ways: the minimal and maximal ways. So although one can't supererogate without exceeding the minimum, one can supererogate while still falling short of an optimal performance. On the other hand, since you can't discharge your obligations optimally unless you discharge them, the fact that something is involved in doing the maximum doesn't rule out the possibility that it is obligatory and hence not supererogatory. So:

$$\mathrm{SU}p \not\to \mathrm{MA}p$$
$$\mathrm{MA}p \not\to \mathrm{SU}p.$$

However, there is a positive connection. If discharging your obligations in an optimal way involves p and discharging them in a minimal way involves $\tilde{}p$, then p must be supererogatory:

$$\mathbf{MA}p \;\&\; \mathbf{MI}\neg p \rightarrow \mathbf{SU}p.$$

(And this follows from $\mathbf{MA}p \rightarrow \mathbf{PE}p$, and the definition of **SU**.)

Permissible suboptimizing, a notion whose presence is perhaps as conspicuous in much of the literature of common sense morality as is the absence of the notion of supererogation, is easily defined:

$$\mathbf{PS}p \leftrightarrow (\mathbf{PE}p \;\&\; \mathbf{MA}\neg p).$$

That this simply falls out of our scheme for supererogation should really come as no surprise, for *the permissibly suboptimal* is essentially the mirror image of *the supererogatory* (the permissibly "super-minimal"). And as the prior example indicates:

$$\mathbf{SU}p \not\rightarrow \neg\mathbf{PS}p$$

We can now state a fundamental symmetry principle for common sense morality. Where $p[\mathbf{SU}-\mathbf{PS}, \mathbf{MI}-\mathbf{MA}]$ is the result of *jointly* swapping all occurrences of **SU** with **PS** *and* **MI** with **MA**):

> SU+MI-PS+MA Interchange: If p contains any occurrences of any of our deontic operators (without exception), then p is a logical truth iff $p[\mathbf{SU}-\mathbf{PS}, \mathbf{MI}-\mathbf{MA}]$ is.

Note that this implies General **MI-MA** Interchange as a special case.

Before moving on, let me bring your attention to two geometric diagrams in Appendix A: "The Deontic Octodecagon" (Parts I & II), and "The Twelve-Fold Partition"[2]. These are the respective analogues of the Traditional Deontic Square (more accurately, the Deontic Hexagon) and the Traditional Threefold Classification. These diagrams make the increased richness and complexity of the proposed scheme graphic.

9. Sketch of the semantic underpinning

I would like to sketch a simple semantic framework for this conceptual scheme. The framework is a minor modification of the one endorsed in **DQ**, one that will enhance comparisons with the two most well-known semantic paradigms for SDL (e.g. see [2]). In one paradigm, the **O** of SDL is interpreted in terms of an accessibility relation, thus subsuming the semantics of SDL to the standard semantics for normal modal logics; in the other

[2]The Octodecagon is similar to simpler diagrams independently arrived at in [5]. Thanks go to Roderick Chisholm for pointing this out to me. See **DQ**, Appendix D.

paradigm, an ordering relation is employed and **O** is given "top-of-the-heap" truth-conditions. Now to get the desired results, we need only blend these familiar approaches in an unfamiliar way. First, we employ a set of worlds and a standard accessibility relation, here called "acceptability", with the intended interpretation in mind. As in the most familiar frameworks for SDL, seriality holds: each world has at least one acceptable alternative. (This sanctions NC.) Secondly, from the standpoint of any world, we impose a connected weak ordering on that world's acceptable alternatives. (These conditions are weakened in [8].) So from a given world, i, some i-acceptable worlds may be ranked higher than others and some may be tied:

Ordered i-Acceptables:

```
                                 /\
                                 || \
at least 1 i-acceptable →        *|    weakly ordered
                                 ||  / i-acceptables
a level of i-acceptables →       ++ /
                                 \/
```

The vertical bar represents the connected weakly ordered i-acceptable worlds. A horizontal line through a bar indicates a "level" of i-acceptables (an equivalence class with respect to equi-rank). An asterisk indicates there is always an i-acceptable world.

Formally ("DWE" for "Doing Well Enough"), $F = \langle W, A, \leq \rangle$ is a DWE-Frame:

1) W is non-empty;

2) $A \subseteq W^2$ and A is serial;

3) $\leq \subseteq W^3$ where:

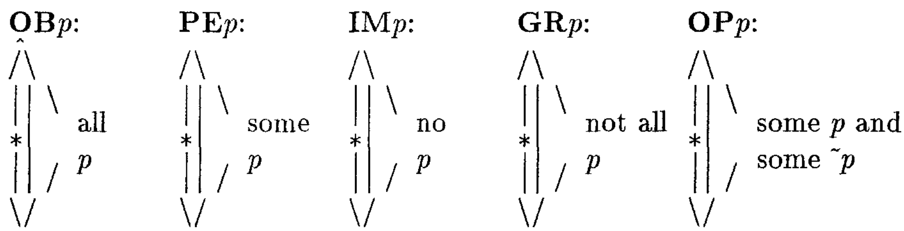
   a) ($k \leq_i j$ or $j \leq_i k$) iff (Aij & Aik), for any i, j, k in W;

   b) if $j \leq_i k$ and $k \leq_i l$ then $j \leq_i l$, for any i, j, k, l in W.

Note that in addition to confining the i-relative ordering to the i-acceptable worlds (which is convenient), (3a) also entails that the i-acceptables are $\leq_i$-reflexive, and that the i-acceptable worlds are $\leq_i$-connected. That's it for the underlying structures[3].

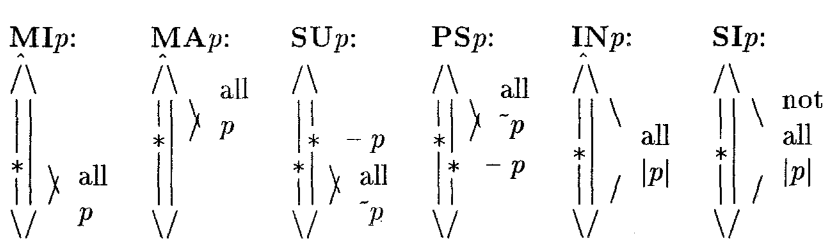
[3]For closely related structures employed for different purposes, see [6] and [7]. In personal correspondence, Lennart Aqvist pointed out that he had used similar structures

For the five fundamental statuses, the ranked set of i's acceptable alternatives might just as well be homogeneous. Something is *obligatory* at i if it holds in all of i's acceptable alternatives, *permissible* if it holds in some, *impermissible* if it holds in none, *gratuitous* if it fails to hold in some and *optional* if it holds in some, but not all:



A "^" under an operator indicates that it is primitive (see Appendix B).

We now turn to the less familiar operators. Here the ordering concept is crucial. Something is *involved in doing the minimum* at i if there is some point on *down* among i's acceptable alternatives where that thing invariably occurs. Similarly for *doing the maximum*, but *up*–they're mirror images. Something is *supererogatory* if it holds in one of i's acceptable alternatives and there is a point among these alternatives where from there on *down*, it uniformly fails to hold. Similarly for the *permissibly suboptimal*, but *up*–they're mirror images too. Since we are allowing ties among i's ranked acceptable alternatives, we can speak reasonably of the various "levels" of i's acceptable alternatives: the equivalence classes with respect to $=_i$ (defined in the obvious way). Something will then be *morally indifferent* if at every such level it, and it's negation, occur somewhere therein. Derivatively, something will be *morally significant* if there is some i-level that uniformly includes it or uniformly excludes it. Diagrammatically:



(in a paper initially written in 1989) to make a rich set of distinctions in the domain of legal evidence. He also pointed out in correspondence that his evidential framework might be adapted to make deontic distinctions similar to mine. In DQ, and in [13], I argue that the sort of semantic framework I employ here can accommodate various evidential distinctions, but not in the detail nor with the legal focus of [1].

An "all $|p|$" indicates that both p-worlds and $\tilde{}p$-worlds occur at each associated *level.* (See **DQ**, ch.7 for other definable operators.)

It easy to confirm that all of the implications and nonimplications cited previously are predicted by this framework. (With the exception of the symmetry principles, whose validity proofs are a bit more involved. For example, in the case of **MI-MA** *Interchange*, the proof hinges on showing that for any model, inverting $\leq_i$ will yield a new model that "exchanges" all the truth values of the MI-pure and MA-pure formuli.) But instead of confirming previously cited principles, let me demonstrate the validity of a new subtle principle linking indifference and obligation, "Mares Principle",

MPR: $\quad \mathbf{OB}(p \to q)\ \&\ \mathbf{OB}(q \to r)\ \&\ \mathbf{IN}p\ \&\ \mathbf{IN}r. \to .\mathbf{IN}q,$

after Ed Mares who pointed it out to me. In English, if it is obligatory to see to it that if p then q and to see to it that if q then r, while both p and r are matters of indifference, then q must also be a matter of indifference. Mares Principle (A6 in Appendix B) is not deducible from the conjectured base logic offered in **DQ**, and it is not deducible from the simple and obvious principles governing the operators herein. So it is an important principle. Although this principle can motivated intuitively ([12]), it is very easy to see that it is validated by our independently motivated semantics. For suppose that the antecedent of MPR holds in a model. Then every i-acceptable world is both a $(\tilde{}p \vee q)$-world and a $(\tilde{}q \vee r)$-world, and every level of i-acceptable worlds contains a p-world, a $\tilde{}p$-world, an r-world and a $\tilde{}r$-world. Consider any such i-level, L. Since there is a p-world in L and every i-acceptable world is a $(\tilde{}p \vee q)$-world, this world must be a q-world. So L contains a q-world. Similarly, since there is also a $\tilde{}r$-world in L and all the i-acceptable worlds are $(\tilde{}q \vee r)$-worlds, L must also contain a $\tilde{}q$-world. Hence every such i-level contains both a q-world and a $\tilde{}q$-world, and thus the consequent of MPR holds.

Let me note that there are a number of variations of the simple structures employed here. Some are developed in [8], where we generalize on the models and logics specified herein and prove three completeness theorems, including one for DWE, the logic cited in Appendix B. One interesting result in that paper is that the same logic is determined even if we weaken clause 3) above in the definition of a DWE frame by dropping $\leq_i$-connectivity in favor of weaker lower and upper bound principles:

3') $\leq \subseteq W^3$ where:

a) $k \leq_i j$ only if $(Aij\ \&\ Aik)$;

b) if Aij then $j \leq_i j$;

c) If $j \leq_i k$ & $k \leq_i l$ then $j \leq_i l$;

d) If Aij & Aik then $El(l \leq_i j \,\&\, l \leq_i k)$ and $Em(j \leq_i m \,\&\, k \leq_i m)$.

It is easy to confirm that the former frames are a proper subset of the latter frames. Another alternative would be to first provide a world-relative weak ordering on a superset of the base world's acceptables (the eligible worlds) and then let the ordering of the acceptable worlds be a sub-ordering thereof. Then, for example, we could add what is needed to get the result that the best i-acceptable worlds are the best worlds per se from i (**DQ**, Ch.4.). Other alternatives are discussed in [12].

10. Conclusion

I believe that any adequate framework for common sense morality will have the expressive resources to distinguish the normative statuses identified in this paper and the semantic resources to generate model structures involving ranked acceptable alternatives, and thus will be a variation on the framework sketched here.

In addition, I have argued elsewhere (**DQ** and [13]) that the same normative scheme and semantic framework can be *independently* motivated by reflecting on certain modal auxiliaries and quasi-auxiliaries–some of which have been completely overlooked or conflated with one another in the literature. Such reflections boost the overall evidence beyond the mere sum generated by either path alone, as well as illustrating a wider range of application for the framework given a deontic interpretation in this paper. Here I can only be suggestive. I have argued that, roughly, such reflection will lead to the following identifications: "what I *must* do" is whatever is morally obligatory, while "what I *ought* to do", is not–contrary to a virtually universally endorsed bipartisan presupposition. Rather, what I *ought* to do is whatever is involved in doing the optimum. So I reject the standard definitional equivalences linking "ought" and the "can" of permissibility. "Must", not "ought" belongs there. "The *least* I can do", an idiom pregnant with moral import, patently relevant to supererogation and permissible suboptimizing, yet completely overlooked by deontic logicians and ethicists (including the friends of supererogation), is to be identified with doing the minimum. (And consequently, what is *involved* in doing the minimum is to be identified with what is *involved* in doing the least you can do.) Finally, "doing *more than I had to* do" is to be identified with exceeding the minimum.

Notice that if I am right about "must" and "ought", then the vast majority of ethicists–including the friends of supererogation and other antiutilitarians, as well as most deontic logicians, have not been focusing on deontic necessity at all. For surely if "must" and "ought" are semantically distinct, it is the latter, not the former that expresses deontic *necessity.* This was easy for the latter group to overlook since the logics of these operators in isolation appear to be the same, and they took their lead from the ethicists who have routinely conflated "ought" with deontic necessity[4].

I would argue that the pervasive use of these modal idioms, along with those for expressing optionality, indifference and permissibility, confirm that the scheme sketched within, or some variant thereof, is very deeply rooted in common sense morality. Whatever the substantive prospects for common sense morality, be it eventual vindication or a consensus that it is ultimately without suitable substantive rationale, I think that we can learn much about it, and thus about us, by reflecting on the scheme sketched herein[5]. As stated at the outset, supererogation is pivotal to the logic of common sense morality–and as the name "Doing Well Enough" is intended to suggest, so too is the notion of an acceptable minimum.

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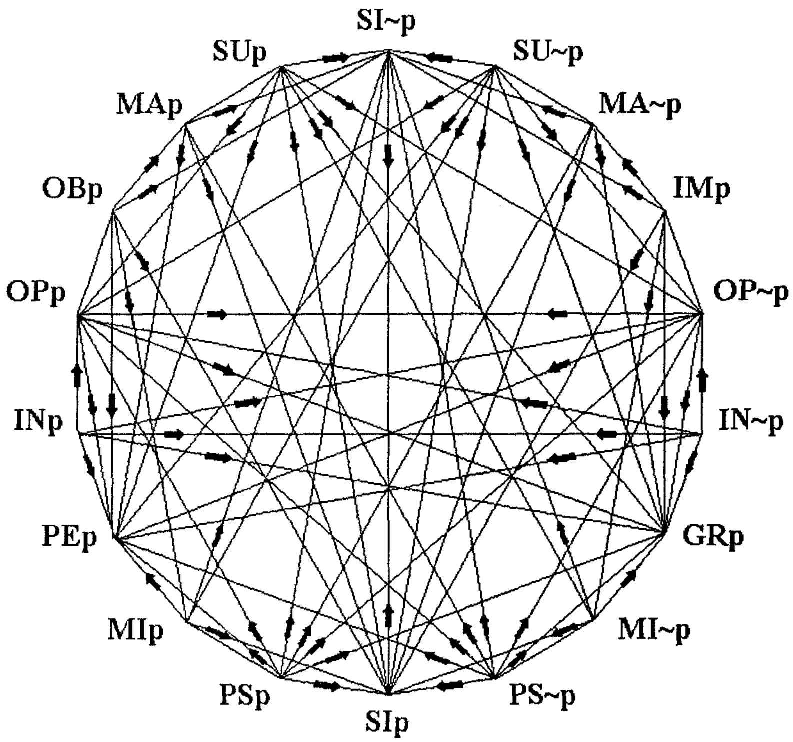
[4] [7] are the only deontic logicians that I know that have tried to accommodate the difference between "must" and "ought". (A difficulty in the details is that "must" is there identified with what is both conditionally and unconditionally obligatory. But this is implausible for surely it can be the case that I must not kill my mother, while it is also the case that if I am going to kill her then I must do so painlessly. See DQ, Ch.8.)

[5] See [12] on the substantive prospects.

Appendix A

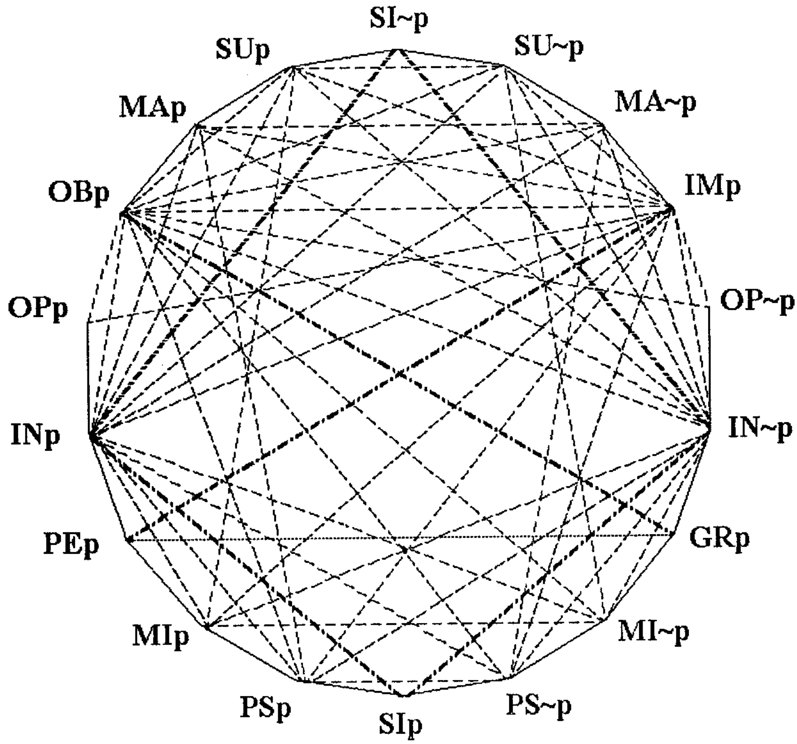
THE DEONTIC OCTODECAGON - PART I



Arrowed Lines: connect implicata

Operator Key: **OB**p: it is obligatory that p.
PEp: it is permissible that p.
IMp: it is impermissible that p.
GRp: it is gratuitous that p.
OPp: it is optional that p.
MAp: doing the maximum involves p.
MIp: doing the minimum involves p.
SUp: it is supererogatory that p.
PSp: it is permissibly suboptimal that p.
INp: it is indifferent that p.
SIp: it is significant that p.

THE DEONTIC OCTODECAGON–PART II



Dashed Lines: connect contraries.

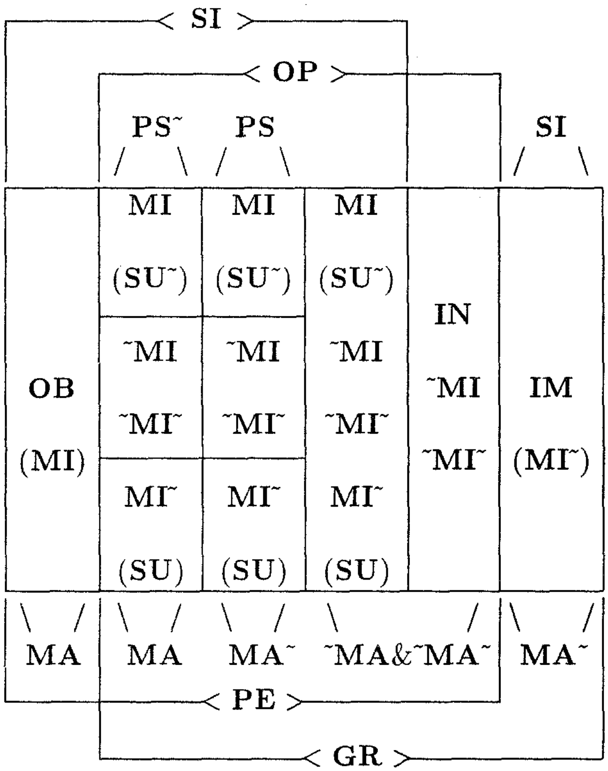
Dotted Lines: connect sub-contraries.

Dotted-Dashed Lines: connect contradictories.

Plain Lines: purely aesthetic.

(The Deontic Octodecagon is the result of the superimposition of Part I on Part II.)

THE TWELVEFOLD PARTITION:



The partition is the large central rectangle. Collectively, the twelve cells provide the finest categorical individuation the language is capable of. Cells in externally tagged vertical stacks inherit the tag. Parenthetical operators and those tagged to single lines outside the partition highlight the location of various non-finest classes. Below, the twelve classes are defined in primitive notation with redundancies eliminated.

The Twelve Finest Classes:

OB	(MI & MA & ~OB)
IN	(MI & MA~)
OB~	(MI & ~MA & ~MA~)
(MI~ & MA)	(~MI & ~MI~ & MA)
(MI~ & MA~ & ~OB~*p*)	(~MI & ~MI~ & MA~)
(MI~ & ~MA & ~MA~)	(~MI & ~MI~ & ~MA & ~MA~ & ~IN).

Appendix B

(The following framework is generalized in Mares and McNamara 1996, where the metatheorem below is proven as a special case.)

Syntax

DWE-Wffs: The usual ingredients of a propositional language plus these unary operators: **OB**, **MA**, **MI**, **IN**.

D1. $\mathbf{PE} =_{\text{df}}$ ˜**OB**˜.
D2. $\mathbf{IM} =_{\text{df}}$ **OB**˜.
D3. $\mathbf{GR} =_{\text{df}}$ ˜**OB**.
D4. $\mathbf{OP} =_{\text{df}}$ ˜**OB** & ˜**OB**˜.
D5. $\mathbf{SI} =_{\text{df}}$ ˜**IN**.
D6. $\mathbf{SU} =_{\text{df}}$ **PE** & **MI**˜.
D7. $\mathbf{PS} =_{\text{df}}$ **PE** & **MA**˜.

Semantics

$F = \langle W, A, \leq \rangle$ is a DWE-Frame:

(1) W is non-empty;

(2) $A \subseteq W^2$ and A is serial;

(3) $\leq \subseteq W^3$:

(a) ($k \leq_i j$ or $j \leq_i k$) iff (Aij & Aik), for any i, j, k in W;
(b) if $j \leq_i k$ and $k \leq_i l$ then $j \leq_i l$, for any i, j, k, l in W.

P is an Assignment on F: $F = \langle W, A, \leq \rangle$ is a DWE-Frame and P is a function, $P : PV \rightarrow \text{Power}(W)$, defined on PV (Propositional Variables).

$M = \langle F, P \rangle$ *is a DWE-Model*: $F = \langle W, A, \leq \rangle$ is a DWE-frame and P is an assignment on F.

Truth at an Index in a Model: Let $M = \langle F, P \rangle$ be a DWE-model, where $F = \langle W, A, \leq \rangle$ and $j =_i k =_{\text{df}} j \leq_i k$ & $k \leq_i j$. Then for any i in W:

0) (Conditions for variables and truth-functional connectives)

1) $M \models_i \mathbf{OB}p : (j)($ if Aij then $M \models_j p)$.

2) $M \models_i \mathbf{MA}p : Ej(Aij$ & $(k)($ if $j \leq_i k$ then $M \models_k p))$.

3) $M \models_i \mathbf{MI}p : Ej(Aij \ \& \ (k)(\text{ if } k \leq_i j \text{ then } M \models_k p))$.

4) $M \models_i \mathbf{IN}p : (j)[\text{ if } Aij \text{ then } Ek(k =_i j \ \& \ M \models_k p) \ \&$
$Ek(k =_i j \ \& \ M \models_k \tilde{}p)]$.

Derivative Truth Conditions:

5) $M \models_i \mathbf{PE}p : Ej(Aij \ \& \ M \models_j p)$.

6) $M \models_i \mathbf{IM}p : (j)(\text{ if } Aij \text{ then } M \models_j \tilde{}p)$.

7) $M \models_i \mathbf{GR}p : Ej(Aij \ \& \ M \models_j \tilde{}p)$.

8) $M \models_i \mathbf{OP}p : Ej(Aij \ \& \ M \models_j p) \text{ and } Ej(Aij \ \& \ M \models_j \tilde{}p)$.

9) $M \models_i \mathbf{SI}p : Ej[Aij \ \& \text{ either } (k)(\text{ if } k =_i j \text{ then } M \models_k p) \text{ or}$
$(k)(\text{ if } k =_i j \text{ then } M \models_k \tilde{}p)]$.

10) $M \models_i \mathbf{SU}p : Ej(Aij \ \& \ M \models_j p) \ \& \ Ej[Aij \ \& \ (k)(\text{if } k \leq_i j \text{ then}$
$M \models_k \tilde{}p)]$.

11) $M \models_i \mathbf{PS}p : Ej(Aij \ \& \ M \models_j p) \ \& \ Ej[Aij \ \& \ (k)(\text{if } j \leq_i k \text{ then}$
$M \models_k \tilde{}p)]$.

Truth in a DWE-Model: $M \models p$ iff $M \models_i p$, for every i in W of M.

Validity for a Set of DWE-Models: $C \models p$ iff $M \models p$, for all M in C.

The DWE Logic

Where "*" ranges over **OB**, **MA**, **MI**:

A0. All tautologous DWE-wffs;
A1. $*(p \to q) \to (*p \to *q)$
A2. $\mathbf{OB}p \to (\mathbf{MI}p \ \& \ \mathbf{MA}p)$
A3. $(\mathbf{MI}p \vee \mathbf{MA}p) \to \mathbf{PE}p$
A4. $\mathbf{IN}p \to \mathbf{IN}\tilde{}p$
A5. $\mathbf{IN}p \to (\tilde{}\mathbf{MI}p \ \& \ \tilde{}\mathbf{MA}p)$
A6. $\mathbf{OB}(p \to q) \ \& \ \mathbf{OB}(q \to r) \ \& \ \mathbf{IN}p \ \& \ \mathbf{IN}r. \to .\mathbf{IN}q$

R1: $\vdash p$ and $\vdash p \to q \Rightarrow \vdash q$
R2: $\vdash p \Rightarrow \vdash \mathbf{OB}p$.

Metatheorem: The DWE-logic is determined by the class of DWE-models.

Anknowledgements

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