In Defence of Δ-TIL[1]

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In 2015-2016, my two papers on deontic modalities analysed in terms of Transparent Intensional Logic (TIL) were published in *Organon F*. The first of them, Glavaničová (2015), is based on the results of my bachelor thesis. This paper stands at the beginning of my (ongoing) research into deontic logic. The second one, Glavaničová (2016), suggests a small amendment to the analysis provided in the first paper.

In short, I have argued (in the first paper) that deontic logic should be hyperintensional, since deontic propositions lead to the failure of the extensionality principle (we cannot always inter-substitute necessary equivalents into deontic formulas). The framework I used was Tichý's Transparent Intensional Logic (hyperintensional partial lambda calculus with types). The suggested analysis consists mostly in providing type-theoretical analysis along with truth-conditions for deontic propositions and some axioms and inferential rules.

Moreover, the semantic distinction between implicit and explicit deontic modalities was introduced. Informally, consider some normative text (e.g., Decalogue) and a normative sentence that is explicitly contained in that text (e.g., "Thou shalt not steal"). Suppose, for the sake of argument, that this normative sentence can be translated into deontic sentence

(1)   It is obligatory that people do not steal.

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There is an *explicit* deontic construction that can be assigned to this sentence as an analysis. Now there are many deontic sentences that are not "translations" of any of the sentences explicitly contained in the Decalogue, for instance

(2)   It is obligatory that people do not dream

is such sentence, but also

(3)   It is obligatory that people do not steal or dream
(4)   It is obligatory that people do not steal and that 2+2=4
(5)   It is obligatory that people do not steal and that bachelor is an unmarried man.

Now the sentence (2) denotes the proposition that is not entailed by the proposition denoted by (1), so (2) is not even implied by the Decalogue. However, the propositions denoted by (3), (4) and (5) are implied by the Decalogue, because they are implied by the proposition denoted by (1). These implied consequences of something explicitly stated are what I call *implicit* deontic propositions.

I attempted to show that this distinction can be useful in resolving some of the paradoxes of deontic logic. This approach to resolving the deontic paradoxes was inspired by a similar approach in epistemic logic (cf. Levesque's 1984 'Logic of Implicit and Explicit Beliefs').

The ideas that deontic modals fail to be extensional and that hyperintensional deontic logic can be useful in resolving deontic paradoxes occurred to me during the summer of 2013, and today, more than three years later, I still hold these beliefs, and I am ready to defend them.[2] Of course, I don't think that I provided a comprehensive, satisfactory account: it is still a work in progress.

Recently, Vladimír Svoboda (2016) responded to my papers with a sharp criticism. I agree with many of his points. Indeed, I was aware of most of them even before reading the criticism. This is so because I have been intensively discussing my approach to deontic logic with various relevant researchers (including Svoboda himself) since writing the bachelor

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[2]   Recently, Faroldi (2016) defended these claims, though his approach is different from mine.

thesis. Despite this, his criticism contains many points I cannot agree with, and these will be central to this defence. Yet, one should keep in mind (while reading the papers or this defence) that both of the papers are to be understood as first steps in my long-term project of developing a hyperintensional deontic logic, and neither of them as the final proposal.

To begin with, Svoboda explains my approach. It is not surprising that he is not sympathetic to my limitation of deontic logic to (descriptive) logic of deontic propositions, since he himself advocates prescriptive deontic logic. He writes that "when Glavaničová speaks about deontic logic what she has in mind is *narrowly* conceived deontic logic" (Svoboda 2016, 540; italics mine); and that it is "not clear what is meant by the phrase 'implicit command described by the sentence'" (Svoboda 2016, 544). Yet this narrowly conceived deontic logic seems to be prevalent in the current literature, so I do not feel guilty of making this common simplification. Moreover, the phrase he quotes occurred within an informal explanation, not as a part of some definition. So I do not, and need not, presuppose the existence of any logic of commands, contrary to what Svoboda suggests in his criticism (though, I think that there can be one). All that is needed is some informal understanding of the term *command* (similarly for the other undefined terms, such as *sentence*).

Second, Svoboda (2016, 541) claims that the sentence "It is obligatory that Pavel is silent" would be analysed in Δ-TIL either as

$$[^0O_{wt} [\lambda w \lambda t [^0Silent_{wt} {}^0Pavel]]]$$

or as

$$[^0O^*_{wt} {}^0[\lambda w \lambda t [^0Silent_{wt} {}^0Pavel]]].$$

I almost agree, but there is a missing element "$\lambda w \lambda t$" at the beginning of the both constructions.

Subsequently, Svoboda discusses my definitions:

$^0T : [^0O_{wt} C]$ iff $C \in O_{wt}$
$^0F : [^0O_{wt} C]$ otherwise.
$^0T : [^0O^*_{wt} {}^0C]$ iff $^0C \in O^*_{wt}$
$^0F : [^0O^*_{wt} {}^0C]$ otherwise.

(The crucial types are $O/(oo_{\tau\omega})_{\tau\omega}$ and $O*/(o*n)_{\tau\omega}$.)

He writes: "The definitions, in fact, seem somewhat suspicious to me. I, for example don't see how a *construction* of a proposition could be a member of the set of (in this case obligatory) propositions" (Svoboda 2016, 541, footnote 3). The construction in question is not mentioned, but *used* (written *without* trivialization). This means that the semantic content is the proposition constructed, not the construction itself (and this proposition is a member of the set of obligatory propositions). Yet, I agree that I could made it more clearly.

Next, Svoboda claims that "these definitions would be entirely uninteresting if they were not supplemented by some logical principles" (Svoboda 2016, 542). Though I provided some logical principles, this declaration seems to be too strong. A definition (or explication, analysis) can be theoretically interesting even without adding any logical principles. Claiming otherwise is according to me a "narrowly conceived logic": For instance, some definition or some explication can enlighten the relationship between some important concepts. To give an argument for this claim, it is needed to explain the notion of theoretical explication first. My understanding of theoretical explication derives from Tichý (1988, 194-195):

> To explicate a system of intuitive, pre-theoretical, notions is to assign to them, as surrogates, members of the functional hierarchy over a definite objectual base. Relations between the intuitive notions are then represented by the mathematically rigorous relationships between the functional surrogates.

With this understanding of explication in mind, let me now demonstrate that, for instance, my definition

$^0T : [^0O_{wt}\ C]$ iff $C \in O*_{wt}$
$^0F : [^0O_{wt}\ C]$ otherwise

connected with the type-theoretical analysis of the operator O, i.e. type-theoretical analysis of the "coarse-grained oughts" has some explanatory value. Recall that the type of O is $(oo_{\tau\omega})_{\tau\omega}$, that is $(((o((o\tau)\omega))\tau)\omega)$ unabbreviated. The last "ω", for example, captures the *modal variability* of oughts: What is obligatory differs with respect to possible worlds. In other

words, what is in fact obligatory is usually not obligatory as a matter of logical necessity. If talking about normative systems, one can say that a normative system can change. Next to the last type is "τ", which captures the *temporal variability* of oughts: What is obligatory differs with respect to time. In other words, what is currently obligatory is usually not eternally obligatory. If talking about normative systems, one can say that a normative system in fact changes as time goes by. The type $(o((o\tau)\omega))$ stands for the set of "coarse-grained propositions", so coarse-grained oughts are analysed in terms of coarse-grained propositions and this is captured by the resulting type $(oo_{\tau\omega})_{\tau\omega}$. Similarly for the second part of the definition, or, in general, for the explanatory value of the type-theoretical analysis.

After a concise exposition of my approach, Svoboda starts to assess it. Obviously, he is not satisfied with my way of *testing* the framework: "Somewhat surprisingly, the whole testing consists in a discussion of how the inferential scheme called the *Ross paradox* fares with respect to her distinction between implicit and explicit obligation" (Svoboda 2016, 542-543). Yet, more testing is suggested in footnote 12 of my paper (see Glavaničová 2015, 224), and some generalization is provided by its conclusion (see Glavaničová 2015, 226-227). However, I agree with Svoboda that my presentation of the Ross paradox was *quite misleading*, because the *intuitively invalid* entailment is, of course, the entailment from *It is obligatory that Pavel is silent* to *It is obligatory that Pavel is silent or kills Richard*. Moreover, Svoboda seems to be suspicious of the relevance of The Ross Paradox to descriptive deontic logic:

> The original version of Ross' paradox was presented in the form of the inference *Mail this letter!,* hence *Mail this letter or burn it!*, which was valid according to the prevailing accounts of the logic of imperatives (cf. Ross 1941). It was thus not straightforwardly relevant for *statements* about obligations. (Svoboda 2016, 543)

Contrary to Svoboda, I think that the paradox is relevant to descriptive deontic logic as well as to prescriptive deontic logic (indeed, it is often discussed within the current descriptive deontic logic). It matters little that it was originally formulated within the latter.

Next, I do not see any reason why the distinction between implicit and explicit should be problematic in the moral discourse, and Svoboda does

not provide us with any argument against it (it just "seems quite strange" to him, see Svoboda 2016, 544). It does not seem strange to me: We can talk about moral codes, or about the Decalogue, or about some codes of conduct of some organization, and so on. These usually exist in a written form, so it makes sense to talk about their explicit content, and surely, it also makes sense to talk about their implicit consequences.

One of the important issues under discussion is my use of the implicit-explicit distinction in resolving deontic paradox(es). Svoboda finds it problematic. The main idea is that if we distinguish between deontic propositions that are just propositional contents of some explicitly given commands/permissions prefixed with appropriate deontic operator, and their logical consequences, we wouldn't be misled by these logical consequences (in the sense of reading into them more that is in fact provided by these consequences). For instance, suppose we have a command "Set the prisoner free!"; the relevant explicit deontic proposition would then be "It is obligatory that the prisoner is set free". Now we can derive a logical consequence "It is obligatory that the prisoner is set free or executed". However, if we keep in mind the distinction between explicit and implicit deontic modals/deontic propositions, it is clear that (i) explicit obligations are of utmost importance and are to be preferred over their implicit (implied) consequences; (ii) the implicit deontic proposition "It is obligatory that the prisoner is set free or executed" was derived from the explicit deontic proposition "It is obligatory that the prisoner is set free" only because "or" in the latter is a just the non-exclusive disjunction, so we cannot read it as anything else (not in the least as the free choice disjunction); (iii) explicit deontic propositions correspond to explicitly given commands/permissions; and (iv) if there is an explicitly given command/permission, one should not follow some implicit consequence that would made it impossible to obey the given command.

The remark that Δ-TIL is a weak logic is not very surprising, since virtually every system of hyperintensional logic faces this problem: The more *fine-grained* the meanings are, the weaker the logic is. Creating satisfactory hyperintensional logic is a balancing act; cf. e.g. Mark Jago's *problem of bounded rationality*: real agents are rational but at the same time cognitively bounded (see Jago 2014a, 163-192). Put differently "[i]t seems that (i) rational agents seemingly know the trivial consequences of what they know, but (ii) they do not know all logical consequences of what they

know. The problem of rational knowledge is that (i) and (ii) are incompatible" (Jago 2014b, 1152). To account for this problem, one has to devise a hyperintensional logic that can master the abovementioned balancing act. Glavaničová (2015) uses a weak logic for explicit deontic modals and strong logic for implicit ones. Semi-implicit and semi-explicit deontic modals were introduced exactly to proceed to this balancing act. However, it is still a work in progress. In fact, the aim of the paper was simply to propose an analysis (or explication) of deontic modals and to motivate it. Recall that I understand explication, in accordance with Tichý, as providing us with a type-theoretical analysis. Of course, that does not mean that I don't have intentions to create full-blooded (hyperintensional) deontic logic. Hopefully, I will develop such a(n) (more satisfactory) account in the upcoming years.

Svoboda's criticism contains also a short discussion of my second paper, Glavaničová (2016). I don't agree with Svoboda's suspicion that my "argumentation in favour of deontic relativism (a significant part of the second article consists of this argumentation) appears to be close to trivial and the adherents of objectivism that she mentions appear to be mere straw men" (Svoboda 2016, 547). It is true that I just took the position from MacFarlane's discussion in his (2014) book on relativism, merely presupposing that it may be interesting to argue against the position. Despite this, it seems to me that the position is quite common in the metaethical literature. It was not clear to me whether Svoboda thinks that it is not worthwhile to argue for deontic relativism at all, or just does not find my arguments compelling. Be it as it may, deontic relativism seems natural and obvious to me, mostly because the truth-conditions of deontic propositions vary with respect to normative systems. Despite the appropriateness of deontic relativism, there are many researchers who ignore relativistic nature of deontic propositions, or explicitly argue for other positions than relativism.

Next, Svoboda thinks that using relativism to avoid Chisholm's paradox is a bizarre solution, though the inconsistency is avoided (as it should be). Surely, to be philosophically plausible, one needs to say more about this solution. My idea was that some sort of deontic relativism can mimic the distinction between "categorical oughts" and some "corrective oughts" that presuppose the violation of some categorical oughts. For instance, it is categorically forbidden to murder people; the ideal state is that there are no murders, no murderers. Yet, such categorical oughts are often violated and

in such cases, corrective oughts come into the play. For instance, if the categorical forbiddance of murder was violated, there is a corrective ought that the murderer should be sent to the jail. If the solution is understood in this way, it is not that far from many standard solutions (see "Multiple operators" and "Prima facie and all-things-considered oughts" in Goble 2013, 251-296).

In footnote 19, Svoboda claims:

> The terms 'explicit attitudes' and 'implicit attitudes' were introduced as technical terms in TIL (probably in Duží 2004), and this terminology is probably not ideal. It would be, perhaps, more suitable (though less concise) to distinguish between 'attitudes to the construction of an object' and 'attitudes to the constructed object' or 'coarse-grained attitudes' and 'fine-grained grained attitudes'. (Svoboda 2016, 549)

I do not think that the *explicit – implicit* terminology used in current TIL is "not ideal" (Svoboda 2016, 549). I think that these terms are really apt, because the terminology is used in epistemic logic at least since the official introduction by Levesque (1984). This distinction appears in contemporary deontic logic (informally; see, e.g., Hansen 2013, 159-160, 164 or Hansson 2013, 201-204). Furthermore, the terms explicit and implicit have their intuitive meanings that are useful for an informal explanation of the distinction. Finally, the distinction was used in TIL already in Duží & Materna (2001), so it was not introduced in Duží (2004).

Acknowledgments

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