

# $\Delta$ -TIL and Normative Systems<sup>1</sup>

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**ABSTRACT:** According to a widespread view, deontic modalities are relative to normative systems. Four arguments in favour of this suggestion will be presented in this paper. Nevertheless, I have proposed and defended an analysis of deontic modalities in terms of Transparent Intensional Logic (TIL) that is non-relativistic (with respect to normative systems) and accommodates minimal semantics of TIL. This leads to a question whether one can do justice to arguments for deontic relativism and put forward a *relativistic* analysis of deontic modalities in TIL. The main aim of this paper is to amend the former analysis of deontic modalities in terms of TIL to incorporate both the standard (relativistic) view and the minimal semantics of TIL.

**KEYWORDS:** Circumstances of evaluation – conflicts of obligations – deontic relativism – minimal semantics – normative systems – Transparent Intensional Logic.

## 0. Introduction

Deontic operators such as “it is obligatory”, “it is forbidden” and “it is permitted” are of a particular interest to descriptive deontic logic. These operators are sentential operators, i.e. as Dretske (1970, 1007) puts it, “when affixed to

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a sentence or statement, they operate on it to generate another sentence or statement.” The pre-theoretical meanings of these operators are called *deontic modalities*. I have proposed and defended an analysis of deontic modalities in terms of Transparent Intensional Logic (TIL);<sup>2</sup> see Glavaničová (2015a; 2015b). I will use the term “ $\Delta$ -TIL” to refer to it. In sum,  $\Delta$ -TIL makes a (semantically based) distinction between *implicit* and *explicit* deontic modalities. The former are analysed as properties of propositions and the latter as properties of propositional constructions. The distinction proves to be useful in resolving deontic paradoxes, but also in analysing strong and weak permissions.<sup>3</sup> These are the main motivations for employing  $\Delta$ -TIL. The analysis is non-relativistic<sup>4</sup> and is in perfect line with the spirit of minimal semantics of TIL. On the other hand, there are substantial arguments in favour of deontic relativism. Deontic relativists argue that deontic expressions (and their meanings) are relative to various authorities (I will refer to them as “normative systems”). The main aim of this paper is to show that  $\Delta$ -TIL can accommodate deontic relativism without violating its minimal semantics.

Section 1 presents four arguments in favour of deontic relativism. Section 2 contains a brief summary of  $\Delta$ -TIL. Section 3 introduces the problem of implementing deontic relativism to  $\Delta$ -TIL and section 4 suggests two possible solutions of this problem. Section 5 concludes the results and the final section examines some possible objections to the proposed analysis.

## 1. A case for deontic relativism

We can state deontic relativism as follows:

**(DR)** Normative systems enter into the truth-conditions of some descriptive deontic sentences.

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<sup>2</sup> TIL was comprehensively introduced in Tichý (1988). See also recent works on TIL, most notably Raclavský (2009), Duží, Jespersen & Materna (2010) and Duží & Materna (2012). I will briefly explain some basic notions of TIL in Section 2 of this paper.

<sup>3</sup> Hansson (2013) argues for the usefulness of the distinction between implicit and explicit permissions in a similar vein.

<sup>4</sup> Whenever I refer to relativism in the present paper, I have in mind deontic relativism, i.e. relativism with respect to normative systems.

Without loss of generality, we may confine our attention to deontic sentences of the form  $O\varphi$  (i.e.  $\varphi$  is *obligatory*), since parallel arguments can be made for descriptive deontic sentences of the form  $F\varphi$  and  $P\varphi$ . Consequently, we may replace (DR) with:

**(DRO)** Normative systems enter into the truth-conditions of some  $O\varphi$ -sentences.

The first argument in favour of deontic relativism then goes as follows: Let us consider a situation, where we talk about  $O\varphi$ -sentences without mentioning any normative system. A person  $A$  asks a person  $B$ , whether some  $O\varphi$ -sentence is true or not. It may happen that (i)  $B$  assigns a truth-value to a given  $O\varphi$ -sentence with respect to *relevant* normative system or (ii)  $B$  *hesitates to answer* the question and asks for further information.

Let  $P$  represent the sentence “Some men have more than one wife at a time” and let us look at examples of cases (i) and (ii):

**The case (i):** Imagine that Mr. Fiable, an inhabitant of France, is in Saudi Arabia, asking one of its inhabitants, Mr. Amin, whether  $O\neg P$  is true or not. Suppose that Mr. Amin is a reliable source of information about the legal system of Saudi Arabia. He supposes that Mr. Fiable’s question concerns the legal system of Saudi Arabia and replies that  $O\neg P$  is false. From now on, Mr. Fiable will (truly) think that the legal system of Saudi Arabia permits polygamy.

**The case (ii):** Imagine that case (i) has never happened. Mr. Amin and Mr. Fiable are visiting Tilburg. Neither of them knows the Dutch legal system. Again, Mr. Fiable asks Mr. Amin, whether  $O\neg P$  is true or not. In this case, Mr. Amin is not likely to make similar supposition as in the case (i). He would hesitate and ask which normative system the question concerns.

However, in both cases, Mr. Amin was not able to assign a truth-value to  $O\neg P$  without relativizing it to normative systems. Thus, both cases support (DRO).

The second argument in favour of deontic relativism has the following form: It is quite reasonable to demand that normative systems be internally consistent. The commonly employed system of deontic logic – *Standard Deontic Logic* (SDL), has an axiom that accommodates this requirement; cf. McNamara (2006, 207-208):

- (A1) All tautologous wffs of the language.
- (A2)  $O(\varphi \rightarrow \psi) \rightarrow (O\varphi \rightarrow O\psi)$
- (A3)  $O\varphi \rightarrow \neg O\neg\varphi$
- (R1) If  $\vdash \varphi$  and  $\vdash \varphi \rightarrow \psi$  then  $\vdash \psi$
- (R2) If  $\vdash \varphi$  then  $\vdash O\varphi$

In particular, it has an axiom A3, which tells us that if  $\varphi$  is obligatory, then its negation is not. As Goble (2000, 113) puts it, this principle “explicitly precludes conflicts of obligation”. However, different normative systems can give rise to conflicts of obligations (sometimes called normative contradictions or moral dilemmas). The conflict of obligation is a statement of the form  $O\varphi \wedge O\neg\varphi$ . Besides entailing normative conflicts, different normative systems can be explicitly contradicting each other. This happens when one normative system permits some  $\varphi$  (i.e.  $\neg O\neg\varphi$  holds for such system), whilst the other does not (i.e.  $O\neg\varphi$  holds for such system).<sup>5</sup>

Let  $Q$  represent the sentence “Antigone buries her brother Polynices”. Consider the following story:

**The case of Antigone:** Polynices is a (dead) traitor to the city. Creon is a king. The burial of Polynices is forbidden by Creon’s proclamation. Therefore, it ought to be the case that  $\neg Q$  (under *human law*). However, the soul of Polynices needs the proper burial of his body to proceed to the underworld. Polynices should go to the underworld, so the gods demand his burial. Antigone is the only one who is willing to bury Polynices. Therefore, it ought to be the case that  $Q$  (under *divine law*).

Therefore, we have both  $O\neg Q$  and  $OQ$ . Consequently, we can derive a contradiction by deriving  $\neg O\neg Q$  or  $\neg OQ$  (by A3 and R1). SDL as it stands thus cannot consistently allow for conflicts of obligation even across different normative systems.

A possible solution is deontic relativism. Let  $O_x A$  represent schematically the formula  $OA$  relativized to normative system  $x$ . We should amend A3 in such a way that if  $\varphi$  is obligatory (under a *certain* normative system  $x$ ) then  $\neg\varphi$  is not (under *that* normative system); schematically:

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<sup>5</sup> Recall our first example concerning polygamy.

$$(A3^*) \quad O_x\varphi \rightarrow \neg O_x\neg\varphi$$

The reasonable requirement of internal consistency is preserved, whilst the unreasonable requirement of consistency across various systems is dismissed: “Each set of norms or regulations is presumed to be internally consistent, and conflicts only emerge as a result of rivalry between sets of norms” (Goble 2000, 117). Furthermore, remaining axioms and rules have to be decorated with subscripts too. Otherwise A3\* would be useless in proofs.

The third argument is similar to the second one. It goes as follows: certain English text (namely well-known *Contrary-to-Duty Paradox*) is apparently consistent. However, its (most plausible) formalisation in SDL immediately leads to contradiction. Deontic relativism enables us to account for this problem in a simple and straightforward way.

Roderick Chisholm introduced so-called *contrary-to-duty* (CTD) imperatives as “imperatives telling us what we ought to do if we neglect certain of our duties” (Chisholm 1963, 33).<sup>6</sup> The problem with CTD obligations can be set forth as an argument of the following form:

- (P1) Sophie shall not kill.
- (P2) It ought to be that if Sophie does not kill, she is not punished for killing.
- (P3) If Sophie kills, she ought to be punished for killing.
- (P4) Sophie kills.

The text consisting of (P1)-(P4) is obviously consistent. However, its most plausible formalisation in SDL is inconsistent:

- (P1')  $O\neg A$
- (P2')  $O(\neg A \rightarrow \neg B)$
- (P3')  $A \rightarrow OB$
- (P4')  $A$

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<sup>6</sup> Throughout this paper, I will ignore the difference between descriptive and declarative (modes of) deontic sentences. While the distinction constitutes an interesting and widely discussed problem for deontic logic, it does not affect my arguments.

1. $OB$	R1, P3', P4'
2. $O(\neg A \rightarrow \neg B) \rightarrow (O\neg A \rightarrow O\neg B)$	A2
3. $O\neg A \rightarrow O\neg B$	R1, P2', 2
4. $O\neg B$	R1, P1', 3
5. $OB \rightarrow \neg O\neg B$	A3
6. $\neg O\neg B$	R1, 1, 5
7. $\perp$	A1, 4, 6

We can solve CTD problem via deontic relativism treating primary and secondary subsystems of certain normative systems as different normative systems. Subsequently, we acquire relativistic version of our argument:

(P1\*)  $O_n\neg A$

(P2\*)  $O_n(\neg A \rightarrow \neg B)$

(P3\*)  $A \rightarrow O_mB$

(P4\*)  $A$

1. $O_mB$	R1*, P3*, P4*
2. $O_n(\neg A \rightarrow \neg B) \rightarrow (O_n\neg A \rightarrow O_n\neg B)$	A2*
3. $O_n\neg A \rightarrow O_n\neg B$	R1*, P2*, 2.
4. $O_n\neg B$	R1*, P1*, 3.
5. $O_mB \rightarrow \neg O_m\neg B$	A3*
6. $\neg O_m\neg B$	R1*, 1., 5.
7. $O_n\neg B \rightarrow \neg O_nB$	A3*
8. $\neg O_nB$	R1*, 4., 7.

Inconsistency is thus avoided, for the set  $\{O_n\neg B, \neg O_m\neg B, \neg O_nB, O_mB\}$  is consistent. Therefore, deontic relativism can solve the CTD paradox. However, this is clearly not the only possible solution to the CTD paradox (cf. Goble 2013). Nevertheless, it illustrates the usefulness of deontic relativism.

Finally, let us consider the fourth argument in favour of deontic relativism. This argument takes its inspiration from Lou Goble, though his aims are different from ours. Obviously, the opponent of deontic relativism can still reject the axiom scheme A3  $O\varphi \rightarrow \neg O\neg\varphi$ . He can thus avoid the derivation of explicit

contradiction from the conflict of obligation. Yet, he has another problem, namely *deontic explosion*: the formula  $(O\varphi \wedge O\neg\varphi) \rightarrow O\psi$  is still valid. Therefore, as Goble (2000, 114) puts it, “if there is any conflict of obligation, then everything is obligatory.” We can give an axiomatic proof of that proposition (in SDL):

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|---|--------------|
| 1. $(\varphi \wedge \neg\varphi) \rightarrow \psi$  | A1           |
| 2. $O((\varphi \wedge \neg\varphi) \rightarrow \psi)$   | R2, 1        |
| 3. $O(\varphi \wedge \neg\varphi) \rightarrow O\psi$  | A2, 2, R1    |
| 4. $\varphi \rightarrow (\neg\varphi \rightarrow (\varphi \wedge \neg\varphi))$   | A1           |
| 5. $O(\varphi \rightarrow (\neg\varphi \rightarrow (\varphi \wedge \neg\varphi)))$  | R2, 4        |
| 6. $O\varphi \rightarrow O(\neg\varphi \rightarrow (\varphi \wedge \neg\varphi))$   | A2, R1, 5    |
| 7. $O(\neg\varphi \rightarrow (\varphi \wedge \neg\varphi)) \rightarrow (O\neg\varphi \rightarrow O(\varphi \wedge \neg\varphi))$ | A2           |
| 8. $O\varphi \rightarrow (O\neg\varphi \rightarrow O(\varphi \wedge \neg\varphi))$  | A1, R1, 6, 7 |
| 9. $(O\varphi \wedge O\neg\varphi) \rightarrow O(\varphi \wedge \neg\varphi)$   | A1, R1, 8    |
| 10. $(O\varphi \wedge O\neg\varphi) \rightarrow O\psi$  | A1, R1, 3, 9 |

Goble (2000, 113) claims that any logic, which contains all of

- (a)  $\vdash (\varphi \wedge \neg\varphi) \rightarrow \psi$ ,
- (b) if  $\vdash \varphi \rightarrow \psi$ , then  $\vdash O\varphi \rightarrow O\psi$  and
- (c)  $\vdash (O\varphi \wedge O\psi) \rightarrow O(\varphi \wedge \psi)$

will necessarily contain

- (d)  $(O\varphi \wedge O\neg\varphi) \rightarrow O\psi$ .

Suppose that we are in a situation where a conflict of obligation comes to play: the case of Antigone, the CTD paradox or some real-world moral dilemma. Furthermore, suppose we reject deontic relativism as well as the axiom scheme A3. The derivation of explicit contradiction from conflict of obligation is thus avoided. Yet we derive  $O\psi$  for any formula  $\psi$  whatsoever. This result is obviously counterintuitive and poses a problem for the opponent of deontic relativism. One possible solution is to repudiate one of (a)-(c). Another one is to adopt deontic relativism, since this does not pose a

problem for deontic relativist: The theorem (d) is still valid. Yet we cannot use it, since all we have is a formula of the form  $O_n\varphi \wedge O_m\neg\varphi$ , which does not constitute a genuine conflict of obligation (i.e. it is not the formula of the form  $O_x\varphi \wedge O_x\neg\varphi$ ).

## 2. Δ-TIL and its minimal semantics

Δ-TIL is a part of the system of TIL. For this reason, there is a need to introduce TIL briefly. Furthermore, there is a need to explain semantic minimalism of TIL.

The first comprehensive account of TIL was provided by Pavel Tichý in *The Foundations of Frege's Logic*. TIL is a hyperintensional partial lambda calculus with types. It is the logic of *constructions*. Construction is a hyperintensional, structured entity, a theoretical explicate of the notion of *meaning*. TIL employs six different kinds of constructions, most important among them are variables, trivialisation, composition, and closure. Tichý devised an objectual analysis of *variables* (so variables are understood as full-fledged objects). A variable is a construction that constructs an object with respect to some valuation; notation  $w, t, x, y, \dots$  (possibly with subscripts). *Trivialisation* is a simple construction which picks out an object and returns the very same object; notation  ${}^0X$ . *Composition* is a construction that applies a function to some arguments and returns the value of this function on the given arguments (if there is such a value); notation  $[X Y_1 \dots Y_n]$ . Composition has its syntactic surrogate in lambda calculus, namely application. *Closure* is a construction that construes a function by abstraction; notation  $[\lambda x_1 \dots x_n Y]$ . Closure has its syntactic surrogate in lambda calculus too, namely lambda abstraction.

It is quite common in TIL to use four basic types:  $\circ$  for two truth-values,  $\iota$  for individuals,  $\tau$  for moments of times (or real numbers), and  $\omega$  for possible worlds. Constructions have higher order atomic types  ${}^*_n$  ( $n \in \mathbb{N}$ ). These atomic types are the building blocks, and all mathematically possible functions are built upon them (as is quite common in lambda calculus). For instance, proposition is a function from world courses to truth-values, i.e. it has a type  $((\circ\tau)\omega)$ , in an abbreviated form  $\circ_{\tau\omega}$ ; property of individuals has a type  $\circ_{\iota\tau\omega}$ ; set of propositions has a type  $(\circ(\circ_{\tau\omega}))$  and so on. Constructions of propositions (propositional constructions) are theoretical explicates of philosophically important notion of *structured proposition*.



The semantics of TIL is in accordance with semantic minimalism. According to semantic minimalism, as Borg (2009) puts it, “syntax provides the sole route to semantic content.” Yet there are two characteristic versions of semantic minimalism (see Zouhar 2012, 708-713).<sup>7</sup> According to the first version of semantic minimalism, “[t]he semantic content of a sentence S is the content that all utterances of S share. It is the content that all the utterances of S express no matter how different their contexts of use are” (Cappelen & Lepore 2005, 143). According to the second version of semantic minimalism,

literal meaning is held to be entirely context-invariant – a sentence, individuated in terms of its syntax, possesses the very same meaning no matter when, where, or by whom it is produced. (...) [A]s far as semantics is concerned, we should (...) concentrate just on the meaning of sentence-types as formal objects of study. (Borg 2004, 215)

This second version of semantic minimalism is closer to the semantics of TIL. However, these issues have not been extensively discussed yet. Sufficient examination of background syntactic theory of TIL is needed for a sufficient examination of minimal semantics of TIL. In any case, background syntactic theory of TIL needs to distinguish between surface structure and deep structure (or logical form) of expressions. This is so because the constructions of TIL involve modal and temporal variables, despite the fact that such variables are not present in surface structure of (empirical) expressions, but only in deep structure. It is this deep structure what constitutes the relevant basis for semantic analysis. Moreover, the semantic analysis is context invariant. Surely, one needs context to find the *intended* meaning, yet one does not need context to find the *literal* meaning. The apparent semantic function of context is explained away by *ambiguity*. Finally, since TIL has minimal semantics,  $\Delta$ -TIL (as a part of TIL) has to adopt semantic minimalism too.

Let me now briefly introduce  $\Delta$ -TIL. Deontic operators  $O$ ,  $P$  and  $F$  stand for *implicit deontic modalities*. Implicit deontic modality is a function from world courses (i.e. a function from possible worlds to function from moments of time) to sets of propositions. Deontic operators  $O^*$ ,  $P^*$  and  $F^*$  stand for *explicit deontic modalities*. Explicit deontic modality is a function from world courses to sets of constructions.

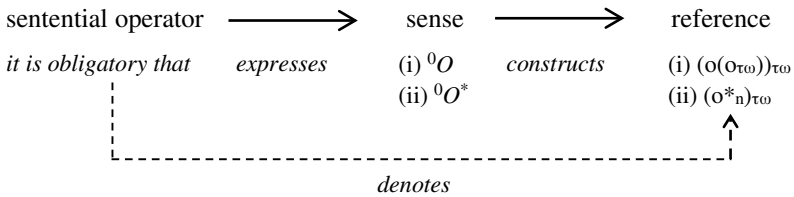
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<sup>7</sup> For further discussion of semantic minimalism (and its competitors), cf. Zouhar (2011).

Δ-TIL assumes that a sentence of the form “A is obligatory” is true *simpliciter*, as one can see from the truth-conditions stated below. Let  ${}^0T$  constructs the truth-value True,  ${}^0F$  constructs the truth-value False and let  $C$  be a construction of a proposition. We write  $\alpha : \beta$  if and only if (iff)  $\alpha$  construes the same object as  $\beta$  (with respect to some valuation).<sup>8</sup> The truth-conditions of formulas involving  $O$  and  $O^*$  are then as follows:<sup>9</sup>

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

Similarly, for  $P$  and  $P^*$ . The truth-conditions of formulas involving  $F$  and  $F^*$  are defined in the standard way via  $O$  and  $O^*$  (i.e., something is forbidden iff its negation is obligatory). The following schema represents the analysis of the expression “it is obligatory, that”:



Note that when someone asserts that *It is obligatory that A*, it is ambiguous. The analysis (i), but also the analysis (ii) is correct. Surely, one can consequently ask which one is the *preferred* analysis. There is a way to answer such a question: namely, by answering additional question, whether the individual in question is talking about explicitly formulated obligations or about implicit consequences of some explicitly formulated obligations. Yet this is a step beyond the realm of semantics.

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<sup>8</sup> This definition employs the notion of *match*, introduced by Pavel Tichý; see Tichý (1982, 64-65).

<sup>9</sup> We will use an arbitrary construction  $X$  with lower-case „wt” in a standard way as an abbreviation for  $[[X w] t]$ .

### 3. The problem

The problem can be stated this way: How to amend the analysis to be both in line with deontic relativism and semantic minimalism? There are at least two possible solutions:

we might seek to complicate the syntax of natural language sentences, positing a range of ‘hidden indexicals’ which provide the syntactic triggers for the additional context-sensitivity (...) [or] introduce additional complexity into the way in which sentences map to truth-conditions, holding that the context-sensitivity (...) lies within the circumstances of evaluation, not in a truly indexical content for sentences. (Borg 2009, 424)

The former is characteristic of indexicalism. However, we want the analysis to accommodate semantic minimalism (recall that  $\Delta$ -TIL is a part of TIL, so it should be consistent with TIL). Hence, we will consider *minimal indexicalism*<sup>10</sup> rather than mere indexicalism. What does it mean for  $\Delta$ -TIL? A free variable ranging over normative systems would occur in deontic construction. Therefore, this construction would be open and we would need the process of completion (saturation – see Bach 1994) for obtaining a closed construction. Normative systems would thus belong to the *context of use*<sup>11</sup> and expressions denoting them would function just like indexicals. If normative systems belong to the context of use, one needs to specify them to determine *what has been said*.

The latter option is characteristic of (non-indexical) relativism. In this case, a lambda-bound variable ranging over normative systems would occur in deontic construction. Therefore, we gain closed construction, but it would not be a propositional construction anymore, since additional parameter for normative systems would be present in its type. Normative systems would thus belong to the *circumstances of evaluation* and would function just like possible worlds (and moments of time). If normative systems belong to the

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<sup>10</sup> Minimal indexicalism was introduced by Marián Zouhar. For the most comprehensive account, see Zouhar (2011).

<sup>11</sup> The distinction between context of use and circumstances of evaluation was introduced in Kaplan (1989) (written already in 1977). For further discussion, see Zouhar (2013a).

circumstances of evaluation, one needs to specify them to determine *truth-values* of deontic sentences in question.

#### 4. The two possible solutions

To begin with, let us look at a more detailed version of the previous analysis. The deontic sentence “C is obligatory” was supposed to represent either (i) the implicit deontic construction  $[\lambda w \lambda t [{}^0 O_{wt} C]]$  or (ii) the explicit deontic construction  $[\lambda w \lambda t [{}^0 O^*_{wt} {}^0 C]]$ . The construction  $[\lambda w \lambda t [{}^0 O_{wt} C]]$  is an abbreviation for  $[\lambda w \lambda t [[{}^0 O w] t] C]$ ; the construction  $[\lambda w \lambda t [{}^0 O^*_{wt} {}^0 C]]$  abbreviates  $[\lambda w \lambda t [[{}^0 O^* w] t] {}^0 C]$ .

We need to add variables for normative systems. This leads to a problem: What is the proper type of normative systems? This remains, however, an open question. One option is to add a further atomic type to the basis. However, for the purposes of this paper, it will suffice to analyse them simply as individuals (note that even individual authorities such as parents, teachers, emperors etc. can be integrated into this framework). Therefore, variables for normative systems will be *individual variables*, so they will construe individuals, in technical notation  $n \rightarrow_v \iota$  (we read this as “ $n$   $v$ -construes an individual”). The operator  $O$  will represent a function from individuals to properties of propositions, in technical notation  $O/(o_{\tau\omega})_{\tau\omega\iota}$ . The operator  $O^*$  will represent a function from individuals to properties of propositional constructions, in technical notation  $O^*/(o^*_n)_{\tau\omega\iota}$ . Remaining types are  $w \rightarrow_v \omega$  ( $w$   $v$ -constructs a possible world, i.e.  $w$  is a possible-world variable) and  $t \rightarrow_v \tau$  ( $t$   $v$ -constructs a moment of time, i.e.  $t$  is a time-moment variable).

##### 4.1. Minimal indexicalism

Δ-TIL combined with minimal indexicalism offers the first possible solution. The analysis of some  $O\varphi$ -sentence will be

(1.1) implicit deontic construction  $[\lambda w \lambda t [[[[{}^0 O n] w] t] C]]$  or

(1.2) explicit deontic construction  $[\lambda w \lambda t [[[[{}^0 O^* n] w] t] {}^0 C]]$ .

As we can see, the constructions in (1.1) and (1.2) are open, since they contain a free variable  $n$ . The evaluation (saturation) of this variable is needed to acquire a propositional construction.

#### 4.2. Non-indexical relativism

$\Delta$ -TIL combined with non-indexical relativism offers the second possible solution. The analysis of some  $O\varphi$ -sentence will be

(2.1) implicit deontic construction  $[\lambda n \lambda w \lambda t [[[[^0 O n] w] t] C]]$  or

(2.2) explicit deontic construction  $[\lambda n \lambda w \lambda t [[[[^0 O^* n] w] t] ^0 C]]$ .

As we can see, constructions in (2.1) and (2.2) are closed (because all variables are bound by lambda abstractors). Note that as a straightforward consequence of this analysis, constructions in (2.1) and (2.2) are no longer propositional constructions, and subsequently, deontic sentences do not denote propositions (in the standard sense) anymore.

### 5. Concluding remarks

Either way, the evaluation of  $n$  is needed for a truth-evaluation of certain  $O\varphi$ -sentence. Is it plausible? Let us recall our examples from the first section. We might (reasonably) hesitate to answer a question such as “Is  $\varphi$  obligatory?”, since for a truth-evaluation of the sentence of the form  $O\varphi$ , we need to check the normative system in question. If no normative system is given at all, we do not know what to check. This result is in perfect accordance with the above presented analysis.

Finally, we may ask which of the competing options is better. Since in deontic sentences there is no explicit reference to normative systems (exactly as no explicit reference to possible worlds and moments of time), the second option seems more plausible. Yet the first option is feasible too. Further research is needed to examine them.

### 6. Response to possible objections

This section will anticipate some possible objections to the analysis and respond to them. To begin with, one can accept deontic relativism proposed in section 1 without thereby accepting the version of deontic relativism proposed in section 4. Certainly, there are alternative theories designed to account for the problems described in section 1: namely contextualism, ambiguity theory, subjectivism and objectivism; cf. MacFarlane (2014, 280-285).

To put it simply: Contextualists claim that there is just one word “obligatory”, but since this word is context-sensitive, different contexts assign different meanings to this word. Ambiguity theory claims that there are many words “obligatory<sub>1</sub>”, “obligatory<sub>2</sub>”, ..., with different meanings corresponding to them. Subjectivism claims that “obligatory” is relative to the normative system the speaker has in mind. Objectivism claims that “obligatory” is relative to the most general (common, important...) system of norms.

Yet none of them is able to explain disagreements.<sup>12</sup> Let  $M$  represent the sentence “The Maori children learn the names of their ancestors”. Sophie asserts that  $OM$  is true, whilst Pavel asserts that  $OM$  is false. As regards the sentence  $OM$ , they are in a disagreement. How is it possible? Easily: Sophie thinks of the tribal laws Maoris have and Pavel thinks of the official law in New Zealand, however, they are talking about the same sentence with the same meaning. It is this sentence (and its meaning) what is the subject matter of their disagreement.

According to contextualism, they use the same word “obligatory”, but contexts assign different meanings to this single word. They are both right, they assert the same sentence, but with different meanings. There is thus no disagreement. The same holds for subjectivism. According to ambiguity theory, they use different words (with different meanings). Again, they are both right. Yet they assert different sentences (with different meanings). Hence, there is again no disagreement. According to objectivism, they use the same word “obligatory”, which is relative to the “universal law” (whatever it is). Yet, it is problematic to say what this so-called universal law is supposed to be.

Can deontic relativism solve the problem of disagreements? That is beyond doubt, since Sophie and Pavel are in a disagreement about a certain sentence with certain meaning. However, the meaning of this sentence needs evaluation (or saturation) of deontic variables for a truth-evaluation of the sentence. In our case, such evaluation (or saturation) will reveal the fact that Sophie and Pavel were thinking about different normative systems. Strictly speaking, they can be both right, because (free or lambda-bound) variables for normative systems will be evaluated differently. This does not necessarily mean the end of disagreement: Sophie and Pavel can still disagree about the preferred normative system.

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<sup>12</sup> The argument takes its inspiration from MacFarlane (2014, 280-285) and Kratzer (1977, 338).

Moreover, there are further disadvantages of alternative theories. Firstly, contextualism is worse than minimal indexicalism for methodological reasons (see Zouhar 2013b). Secondly, ambiguity theory causes annoying profusion of “oughts”; (see Jackson 1991, 471; and MacFarlane 2014, 284). Similarly, contextualism causes annoying profusion of oughts. Finally, the objective sense of “obligatory” is too general. We usually use this word in talking about different legal systems, moral codes or tribal laws and so on. We can thus conclude that “obligatory” we are using in natural language is not the objective one.

Furthermore, one can accept deontic relativism without thereby accepting semantic minimalism. It is not the purpose of the present paper to criticize all the alternatives to semantic minimalism. Rather we outline some positive reasons, inspired by Cappelen & Lepore (2005, 151-154). Firstly, semantic minimalism does not end up requiring that semanticists do metaphysics. Fortunately, minimalism does not require of semantics to answer the question “What is obligation?” which is far beyond the borders of semantics. Secondly,

[it] can account for how the same content can be expressed, claimed, asserted, questioned, investigated, etc. in radically different contexts. It is this content that enables audiences who find themselves in radically different contexts to understand each other, to agree or disagree, to question and debate with each other. (Cappelen & Lepore 2005, 152)

Moreover, it “can account for how Inter-Contextual Disquotational Indirect Reports can be true where the reporter and the reportee find themselves in radically different context...” (Cappelen & Lepore 2005, 152). Suppose the speaker S utters the sentence “A is obligatory”. We can (truly) utter the sentence “S said that A is obligatory.” Semantic minimalism can explain this fact, since it admits certain common content – in particular, the (minimal) semantic content of the sentence “A is obligatory”.

Finally, one can accept deontic relativism without thereby accepting that deontic operator is relative to *a particular* (explicitly unspecified) normative system. We claim that a formula of the form  $O\varphi$  means that  $\varphi$  is obligatory under *a particular* normative system. However, it seems that many other quantifiers can be employed. Let us discuss at least the applicability of existential and universal quantifiers. Hence,  $O\varphi$  can mean (E)  $\varphi$  is obligatory under *some* normative systems or (A)  $\varphi$  is obligatory under *all* normative systems.

We can make use of the example discussed in section 1. Again, let  $P$  represent the sentence “Some men have more than one wife at a time”. Consider the following situations:

**The case of polygamous Saudi Arabia:** Mr. Fiable, an inhabitant of France, is in Saudi Arabia, asking one of its inhabitants, Mr. Amin, whether  $O\neg P$  is true or not. Mr. Amin is a reliable source of information about the legal system of Saudi Arabia. He supposes that Mr. Fiable’s question concerns the legal system of Saudi Arabia and replies that  $O\neg P$  is false. From now on, Mr. Fiable will (truly) think that the legal system of Saudi Arabia permits polygamy. However, the option (E) claims that  $O\neg P$  is true because there is at least one normative system, which forbids  $P$  (e.g. the legal system of France). Yet it seems that Mr. Amin was right in claiming the opposite.

**The case of monogamous France:** Mr. Amin is in France, asking Mr. Fiable whether  $O\neg P$  is true or not. Mr. Fiable is a reliable source of information about the French legal system. He supposes that Mr. Amin’s question concerns the French legal system and replies that  $O\neg P$  is true. From now on, Mr. Amin will (truly) think that the French legal system forbids polygamy. However, an option (A) claims that  $O\neg P$  is false, because there is at least one normative system, which permits  $P$  (e.g. the legal system of Saudi Arabia). Yet it seems that Mr. Fiable was right in claiming the opposite.

The answer “ $O\neg P$  is false” was expected in the case of polygamous Saudi Arabia. Yet according to (E),  $O\neg P$  is true, since there is at least one normative system, which forbids  $P$ . Hence, the option (E) gives a wrong prediction. Moreover, the answer “ $O\neg P$  is true” was expected in the case of monogamous France. Yet according to (A),  $O\neg P$  is false, since there is at least one normative system, which permits  $P$ . Hence, the option (A) gives a wrong prediction.

Certainly the argument demonstrates only the *insufficiency* of analysing  $O\varphi$ -sentences in a fashion suggested by (E) or (A). This result is sufficient for the present purposes. Note, however, that it does not demonstrate their uselessness. We can employ such quantifiers when needed. For instance, we can use them to analyse sentences such as “It ought to be the case that  $\varphi$  under some system of norms” and “It ought to be the case that  $\varphi$  under any system of norms”. Furthermore, we can use restricted quantifiers.



## References

- BACH, K. (1994): Conversational Implicature. *Mind and Language* 9, No. 2, 124-162.
- BORG, E. (2004): Formal Semantics and Intentional States. *Analysis* 64, 215-223.
- BORG, E. (2009): Semantic Minimalism. In: Cummings, L. (ed.): *The Pragmatics Encyclopedia*. Routledge, 423-425.
- CAPELEN, H. & LEPORE, E. (2005): *Insensitive Semantics: A Defence of Semantic Minimalism and Speech Act Pluralism*. Oxford: Blackwell Publishing.
- DUŽÍ, M., JESPERSEN, B. & MATERNA, P. (2010): *Procedural Semantics for Hyperintensional Logic. Foundations and Applications of Transparent Intensional Logic*. Berlin: Springer.
- DUŽÍ, M. & MATERNA, P. (2012): *TIL jako procedurální logika (Průvodce zřídavého čtenáře Transparentní intensionální logikou)*. [TIL as a Procedural Logic.] Bratislava: aleph.
- DRETSKE, F. (1970): Epistemic Operators. *Journal of Philosophy* 67, No. 24, 1007-1023.
- GLAVANIČOVÁ, D. (2015a): K analýze deontických modalít v Transparentnej intensionálnej logike. [On the Analysis of Deontic Modalities in Transparent Intensional Logic.] *Organon F* 22, No. 2, 211-228.
- GLAVANIČOVÁ, D. (2015b): Implicitné a explicitné deontické modality. [Implicit and Explicit Deontic Modalities.] In: Brzobohatá, K. (ed.): *Logika pro právní praxi*. Brno: Masarykova univerzita, 36-45.
- GOBLE, L. (2000): Multiplex Semantics for Deontic Logic. *Nordic Journal of Philosophical Logic* 5, No. 2, 113-134.
- GOBLE, L. (2013): Prima Facie Norms, Normative Conflicts, and Dilemmas. In: Gabbay, D. M. et al. (eds.): *Handbook of Deontic Logic and Normative Systems*. College Publications.
- CHISHOLM, R. M. (1963): Contrary-to-Duty Imperatives and Deontic Logic. *Analysis* 23, 33-36.
- JACKSON, F. (1991): Decision-Theoretic Consequentialism and the Nearest and Dearest Objection. *Ethics* 101, No. 3, 461-482.
- KAPLAN, D. (1989): Demonstratives. In: Almog, J., Perry, J. & Wettstein, H. (eds.): *Themes from Kaplan*. Oxford: Oxford University Press, 565-614.
- KRATZER, A. (1977): What 'Must' and 'Can' Must and Can Mean. *Linguistics and Philosophy* 1, No. 3, 337-355.
- MACFARLANE, J. (2014). *Assessment Sensitivity: Relative Truth and its Applications*. Oxford: Clarendon Press.
- MCNAMARA, P. (2006): Deontic Logic. In: Gabbay, D. M. & Woods, J. (eds.): *Handbook of the History of Logic: Logic and the Modalities in the Twentieth Century*. Vol. 7. Amsterdam: Elsevier, 197-288.
- RACLAVSKÝ, J. (2009): *Jména a deskripce: logicko-sémantická zkoumání*. [Names and Descriptions: Logico-Semantical Investigations.] Olomouc: Nakladatelství Olomouc.

- TICHÝ, P. (1982): Foundations of Partial Type Theory. *Reports on Mathematical Logic* 14, 59-72.
- TICHÝ, P. (1988): *The Foundations of Frege's Logic*. Berlin – New York: de Gruyter.
- ZOUHAR, M. (2011): *Význam v kontexte*. [*Meaning in Context*.] Bratislava: aleph.
- ZOUHAR, M. (2012): Indexikalizmus, sémantický minimalizmus a pravdivostný obsah. [Indexicalism, Semantic Minimalism, and Truth-Conditional Content.] *Filozofia* 67, No. 9, 705-717.
- ZOUHAR, M. (2013a): Epistemický kontextualizmus a jeho motivácia. [Epistemic Contextualism and Its Motivation.] *Organon F* 20, Suppl. issue 2, 171-186.
- ZOUHAR, M. (2013b): Sémanticky relevantné pragmatické procesy (2): Testy a metodologické aspekty. [Semantically Relevant Pragmatic Processes (2): Tests and Methodological Aspects.] *Filozofia* 68, No. 4, 296-308.