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Deontic Relationship in the Context of Jan Woleński's Metaethical Naturalism

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Abstract:
In this paper, we indicate how Jan Woleński's non-linguistic concept of the norm allows us to clarify the deontic relationship between sentences and the given normative system. A relationship of this kind constitutes a component of the metalogic of relating deontic logic, which subjects the logical value of the deontic sentence to the logical value of the constituent sentence and its relationship with a given normative system in the accessible possible worlds.
Keywords: anti-naturalism, deontic logic, naturalism, relating logic, relating semantics, Jan Woleński.

1. Introduction

Relating deontic logic is a deontic logic that introduces an additional condition about relating the formulas with the normative system into semantics. Such logic allows for an extensive range of philosophical considerations, as it does not clearly define what a normative system is, and how to informally understand the so-named evaluation of connection. In this work we will show that this gap can be filled by referring to the metaethics of Jan Woleński. We will learn that both the relating deontic logic – through a certain response to the so-called Jörgensen's Dilemma – as well as Jan Woleński's metaethics, which, where it draws on the Standard Deontic Logic (SDL), is affected by its problems; benefit from the above.[1]

We will begin with a brief presentation of SDL and its fundamental problems associated with individual theses or rules. Subsequently, we will show how relating deontic logic allows us to avoid these problems. Then, we will outline Woleński's metaethical stance, in order to combine it with informal aspects of relating deontic logic in the last part of the paper.

The primary objective of the paper is to indicate the effectiveness of combining two independent stances: logical and metaethical. In the paper, we limit ourselves merely to deontic logic, to the normative concepts analysed herein, while omitting what is also the subject of Jan Woleński's analyses and also find formal representations (often very close to deontic ones), that is, imperative and bonitive sentences, or more broadly: axiological ones. At the same time, we omit many formal details related to the relating deontic logic, or more broadly to the relating logic as such, see [9], [10], [12].

2. The Standard Deontic Logic and its Problems[2]

In SDL, the modal concepts of obligation and permission correspond to the alethic concepts of necessity and possibility, respectively. The element that distinguishes SDL within the family of all modal logics is the validity of the axiom (D). The standard model of the semantics of possible worlds for deontic logic takes the following form:

$$<W, Q, v>$$

where W is a non-empty set of possible worlds, Q is a serial relation of accessibility between the worlds, and v is a classical valuation of propositional variables in the possible worlds. Hilpinen [5, p. 163] describes the possibility of deontic interpretation of such a model in the following way:

> [...] the "standard semantics" [i.e. possible worlds semantics] of deontic logic [...] gives an intuitively plausible account of the meanings of simple deontic sentences when the deontic alternatives to a given world u are taken to be worlds (or situations) in which everything that is obligatory at u is the case; they are worlds in which all obligations are fulfilled. Hence, the worlds related to a given world u by R [accessibility relation, authors] may be termed deontically perfect or ideal worlds (relative to u).

According to Hintikka [7, p. 189], deontic alternatives are different possible variations of the initial world, where the deontic values, required from the perspective of some normative system, occur simultaneously. "These deontic alternatives are also "deontically perfect worlds" of sorts: all obligations, both these that obtain in the actual world and those that would obtain in such an alternative possible world, are assumed to be fulfilled in each of them."

Consequently, what is obligatory must occur in all such worlds; whereas, what is permitted must occur in at least one.

However, let us point out that in deontic alternatives, the sentences that are not obligations in the given normative system, may be true. Thus, there are sentences that do not express obligations, but carry some deontically neutral content. So, how to distinguish those sentences that are true and express obligations from the ones that are true but carry deontically neutral content? Moreover – as we well know – the standard approach leads to various paradoxes, such as the Ross paradox, the good Samaritan paradox, or the paradoxes of derived obligation, extensively described in the literature on the subject, see [1, pp. 268-270], [5, pp. 163-167], [6, pp. 58-64]. Some of them, as described by Carmo and Jones [1, p. 268], result from the closure of the obligation operator *O* under the logical consequence relation. "The first group of paradoxes has its origin in the closure of the *O*-operator under logical consequence (that is, in the fact that SDL, like any normal modal logic, contains the (RM)–rule: if $\vdash A \rightarrow B$, then $\vdash OA \rightarrow OB$."

Another problem is closure under the Necessitation Rule, that results in any logical truth expressing obligation in each deontic situation. Following Carmo and Jones [1, p. 270], it can be stated that: "A second problem of SDL has do the with the *O*-necessitation rule itself, according to which any tautology (more generally, any theorem) is obligatory, which is incompatible with the idea that obligations should be possible to fulfil and possible to violate."

By all means, the closure under the Necessitation Rule in combination with axiom (K) classical logic and the Detachment Rule, allows for deriving the (RM)–rule. Thus, it allows us to obtain the same paradoxes as due to the (RM)–rule. The possibility to create an obligation from each logical truth is also strange because the laws of logic may not remain related to the given normative system whose perspective we are aiming to consider. Logical truth need not be obligatory, nor logical false prohibited, since, from the perspective of the given normative system, they can be completely non-relevant. That is to say, SDL allows for too wide an approach to obligation, prohibition and permission.

3. Relating Deontic Logic

Relating deontic logic is based on the empirical observation that any sentence that is obligatory, prohibited or permitted, is such from the perspective of some value system, or, to put it simply, a normative system. Thus, from the empirical point of view, there are no absolute obligations, nor absolute permissions. Thus, when referring to an obligation, prohibition or permission, we always do so with regard to some value system which orders, permits or prohibits.

The above observation leads to the conclusion that the sentences that do not remain related to the considered normative system, express neither obligation nor prohibition – their content is simply neutral. On the other hand, the sentences that are neutral in relation to the given normative system state what is undoubtedly allowed by the given system, for they cannot express prohibition. Similarly, no sentence that is obligatory from the perspective of a given normative system can carry neutral content since a normative system does not prohibit anything it is not related to. In order to take into account on the formal ground the above-given observations, we complement the conventionally defined semantics of deontic logic with a new element, that is, a family of subsets of a set of formulas:

$$\{R_w\}_{w \in W},$$

thus obtaining the following ordered quadruple

$$<W, Q, v, \{R_w\}_{w \in W}>.$$

Consequently, for every possible world, we determine a subset of formulas, thus representing the fact that, in the given world, the given sentences are related to the given normative system. This relation can be generally termed as the deontic relationship.

In the universe of varying possible worlds, some sentences may become deontically related, while others may cease to be such. The quality of being deontically related can be understood as a deontic relevance, which is an opposite to being neutral with respect to the given normative system. Hence, as we can see, in our semantics there is no direct representation of a normative system, instead we take into account its perspective by differentiating two sentences expressing what is, and, respectively, what is not related to the system.

The introduction of the deontic relationship's representation into the model results in a substantial change in the truth-conditions for deontic sentences. In the proposed approach, what a given sentence states is obligatory, provided that in all deontic alternatives, the sentence is true and remains related to the given normative system, which is as follows:

$$w \vDash OA \text{ iff for all } u \in W, \text{ if } Q(w,u), \text{ then } u \vDash A \text{ and } A \in R_u .$$

Whereas, what a given sentence states is permitted if it is true in some deontic alternative, or is not related to the normative system, hence, is neutral, i.e.:

$$w \vDash PA \text{ iff there is } u \in W, \text{ such that } Q(w,u) \text{ and either } u \vDash A \text{ or } A \notin R_u .$$

The above presented semantics constitute a particular combination of the possible-worlds semantics with the relating semantics. The semantics of the latter type were discussed in detail in [9], and its specific cases in [11]. The basis of such semantics is the evaluation of connection, i.e. the function defined for a given intentional functor α of arity n, mapping n-th Cartesian product of the sets of formulas of a given language into a set of elements representing the values of connection values between the given sentences:

$$f_\alpha : \text{For} \rightarrow \text{VC},$$

where For is a set of formulas of a given language, and VC is a non-empty set of the connection values. In the case of deontic language, the matter involves two unary intensional functors – deontic operators. Consequently, in each world, we can introduce an evaluation of connection with two connection values. Such evaluations determine the subsets of formulas in each world, on the basis of the indicator function. In this particular case, the evaluation of connection becomes similar to the awareness function introduced by Fagin and Halpern [4] within the semantics of epistemic logic. Notice that the above-given truth-conditions of the deontic operators differ from the conditions introduced by Fagin and Halpern [4, p. 53] for the epistemic operator. Moreover, contrary to Fagin and Halpern, we introduce into the language neither the alethic modalities, nor any particular kind of operator which would constitute a linguistic equivalent of the new element of the model.

The work by Jarmużek and Klonowski [11] analyses models of relating deontic logic, in which instead of an indexed family of subsets of formulas, an indexed family of binary relations occurring between the formulas was considered. In this case, the unary approach was defined within the binary approach; that is, the family of subsets of formulas indexed by possible worlds was defined by means of the family of binary relations defined on the set of formulas indexed by possible worlds. Hence, the relation with the normative system was defined by relating the sentences. Such an approach becomes clear with regard to the analysis of deontic contexts through reference to various binary relations, such

as: causal relation, time sequence, relations between action and sanction or action and issue of a relevant document, etc.

Needless to say, the binary relation, defined by the formulas, constitutes a special case of the evaluation of connection. The semantics based on such a relation constitutes a special case of the relating semantics obtained through limiting the evaluation of connection to the function defined on a Cartesian product of the set of the formulas with a bivalent codomain. Such a relational semantics probably has its origin in the work of Epstein [2]. An example of its application may be the analysis of the content relationships which is the foundation of the so-named relatedness logics and dependence logics defined by Epstein [2], [3, pp. 61-84, 115-143] with some particular conditions imposed on the models. A more general approach – where the starting point are models containing all binary relations specified on the set of formulas – proposed by Jarmużek and Kaczkowski [10] and explored by Jarmużek and Klonowski [12] (cf. [9]).

4. Jan Woleński's Metaethics

In the metaethics of Jan Woleński, the following two theses come to the fore:[3] (i) naturalism, and (ii) non-linguistic conception of norms. These theses are independent, and their combination is not common; however, the main idea is that the latter supports the former of more general nature.[4]

Jan Woleński's metaethical naturalism is notably a consequence of his broader argumentation for naturalism in philosophy (see [21]). However, Woleński also presents detailed metaethical arguments for naturalism, which at the same time solve his key issues, as well as arguments against antinaturalism. We will only briefly outline the most important line of argumentation in which occurs (ii).

In his metaethical works, Woleński devotes a lot of attention to the so-called Hume's guillotine, setting it, in a way, in the centre of metaethical considerations. Let us recall the well-known problem in the words of John Searle [16, p. 43]:

> It is often said that one cannot derive an "ought" from an "is". This thesis, which comes from a famous passage in Hume's *Treatise*, while not as clear as it might be, is at least clear in broad outline: there is a class of statements of fact which is logically distinct from a class of statements of value. No set of statements of fact by themselves entails any statement of value. Put in more contemporary terminology, no set of *descriptive* statements can entail an *evaluative* statement without the addition of at least one evaluative premise. To believe otherwise is to commit what has been called the naturalistic fallacy.

The last sentence explains the meaning of Hume's comments on the naturalistic metaethics. Woleński indicates that the problem can be generalised, and simply the relations between normative and descriptive sentences can be discussed. If the normative sentences will be understood as in the deontic logic, that is, with the operators "it is permitted that", "it is obligatory that", "it is indifferent that" and optionally with other ones, then the generalised Hume's thesis, according to Woleński, takes the following form (where sentence A is descriptive, non-tautological and non-deontic, i.e. does not include deontic operator, "D" is one of the deontic operators, and "$\nvDash$" expresses that a semantic consequence relation $\vDash$ doesn't hold[5]):

(1) $A \nvDash DA$
(2) $DA \nvDash A$.

According to Woleński, the generalised Hume's thesis "can be described as a thesis of logical separation of being (facts) and obligation" [20, p. 33]. Both constituents of the thesis should be considered in the naturalistic metaethics. Note that both the SDL and the relating deontic logic do satisfy (1) and (2), provided that they are expressed in the object language.[6]

He bases his deliberations on two axes of dispute in metaethics (see e.g. [19, p. 246]): naturalism vs antinaturalism and cognitivism vs noncognitivism. To put it simply, the naturalist believes that norms are part of the empirical reality, and the antinaturalist places them outside the empirical reality. The cognitivist assigns logical values to norms, and the noncognitivist believes that they have no logical values (various forms of irrealism). In defending naturalism, Woleński is not explicitly in favour of cognitivism or noncongnitivism, as he challenges their underlying assumption that norms are linguistic entities. Thus, in a way, he shifts the issue of truth and falsehood from norms – as in the dispute between cognitivism and noncognitivism – to normative sentences.[7]

The thesis about the non-linguistic character of norms is crucial in Woleński's argumentation. It presents four negative arguments in its favour, i.e. stating what norms are not – they are not linguistic entities; and one positive argument, i.e. stating what norms are (see, e.g. [20, p. 39]). The first three refer to linguistic practice (especially legal practice) and point to a categorical error: when we say that we comply with norms, that a norm applies, or that norms have social causes and effects, we do not mean linguistic expressions, we do not refer to sentences (cf. [15, p. 26]). The fourth argument is grammatical: we distinguish declarative, interrogative, and imperative sentences rather than normative sentences, which means that the latter must be reduced to one of these three types. Woleński argues that the choice of two types: declarative sentences (cognitivism) and imperative sentences (noncognitivism) results in problems for these standpoints.[8]

The positive argument indicates what standards are if they are not of a linguistic character. Woleński's idea, also developed in his works with Kazimierz Opałka, involves extending Austin's concept of performatives to the normative sphere. In short: "We claim that normalisation is an act of some kind, a norm is the result of such an act, and a normative utterance – the expression of a norm" (see [15, p. 27]).

Consequently, according to Twardowski's division into acts and their products, there are three components: the act of normalisation, the product of the act in the form of a norm, and normative utterance related to the norm (the expression of the norm). The naturalistic consequences are easy to identify: norms are not from a non-empirical reality, but are the products of the decisions taken by the norm-maker and the performative acts related to them, that is, certain actions in the world. Every norm was once established by someone (also collectively understood social entities) through a performative act. This approach is not burdened by the categorical error mentioned above: when referring to the validity, observance or application of a norm, we refer to the corresponding relation to the normative product of the performative act.

Although norms are not linguistic expressions, they can be communicated by means of linguistic expressions. Such utterances take the following general form:

(*) I order (prohibit, permit in terms of making it indifferent) *A*.

As we know, Austin did not attribute logical values to performative utterances; instead, he referred to the conditions of their effectiveness: they are effective if a number of factual and formal conditions is met. Woleński solves this problem by distinguishing the performative, that is, a certain action, from a performative utterance. "Effectiveness is not a matter of statements, but of actions. Provided that a given performative is effective, the relevant performative utterance is true, e.g. the sentence *I order that A* is true if effectiveness conditions for effectiveness of obligations are met" [20, p. 41].

The performative utterances that fall within (*), are called “primary normative utterances”. A set of such statements together with their logical consequences – plus possible restrictions, such as non-contradiction – form a normative system. On the other hand, deontic sentences are “secondary normative utterances”, and their logical value depends on the logical value of the primary normative utterances. “A normative system can also be defined as a set of true deontic sentences and their logical consequences, relativised to the given normalisation” [20, footnote 33].

Since both primary and secondary normative utterances constitute declarative sentences, ergo, bear logical value – when certain additional standard conditions are met, e.g. elimination of indexicality – there is no need to introduce the norm as a new semantic category. Since all the components of such a theory are elements of empirical reality, the result is a naturalistic stance.[9]

The combination of naturalism with the non-linguistic concept of norms results in a coherent metaethical stance, which Woleński combines with the classical approach to the deontic sentences expressed in SDL. Such a combination is not necessary, but constitutes a certain methodological requirement respected by Woleński on many other occasions: a philosophical stance should be consistent with the basic logical representation of given concepts, e.g. based on the generalised square of opposition or related to correctly interpreted modal (most often normal) logics. Compliance with such a requirement is an important advantage of Woleński’s philosophy (including metaethics). However, it should be remembered that such basic logic faces many issues – shown above on the example of SDL in section 2. While solving these problems, relating deontic logic retains selected logical values of deontic concepts.

5. Normative Inferences, Metaethical Naturalism and Deontic Relationship

One of the fundamental metaethical issues is the problem of the validity of normative inferences. Having defined the basic normative concepts, we would like to employ them in conducting inferences. However, according to non-cognitivists, norms do not carry logical values; thus, they cannot be directly implemented into inferences. We have seen that in metaethics this problem is seen as associated with Hume’s scepticism, whereas within the field of deontic logic, it appears from the beginning in the form of the so-called Jörgensen’s Dilemma. Let us recall it in its original form [13, p. 290]:

> So we have the following puzzle: According to a generally accepted definition of logical inference only sentences which are capable of being true or false can function as premises or conclusions in an inference; nevertheless it seems evident that a conclusion in the imperative mood may be drawn from two premises one of which or both of which are in the imperative mood. How is this puzzle to be dealt with?

Let us note that Hume’s guillotine is usually limited – as happened in Searle’s words quoted above – to the situations when among the premises, there is not at least one normative premise. From the perspective of logic, however, it does not have much meaning: if one, non-exclusive premise and conclusion do not carry logical values, it is not possible to evaluate the validity of the reasoning. Hence, Jörgensen’s approach is more general: it considers possible inferences, while Hume’s approach was an expression of scepticism towards the theory of morality as such.

The fact is that we perform inferences, in which normative sentences play the main or indirect role:

(1) While driving his car, John turned right.
(2) There was an obligation to turn left there.[10]
(3) John broke the traffic laws.

There is no doubt that the sentence (1) can be assigned a logical value (provided that we interpret properly indexicality, vagueness etc.) – it is a sentence about a certain event occurring in the world. The sentence (2), which describes the traffic rule, raises more doubts. Of course, there is probably an appropriate road sign in the place referred to in this sentence, but this sentence does not simply speak of its presence in this place but states the existence of a corresponding norm. Also, the sentence (3) is not merely a sentence about an event in the world, but refers to the connection of such an event with the norm expressed in the sentence (2) – similar conclusions can also be drawn, e.g. "John should not turn right". So, can we assign logical values to sentences (2) and (3)?[11]

The existence of such inferences in legal or everyday contexts, constitutes an indirect but quite strong argument in favour of the fact that these sentences bear logical values or, in a way, are related to the sentences that bear logical values. Such an assumption is also made within relating deontic logics, with a remark that such inferences are limited to the given normative system and are performed only within its boundaries. In other words, sentences should be related to the same normative system.[12] The advantage of such an approach is that it allows us to avoid SDL problems.

Consequently, does the normative system constitute a set of only the sentences that bear logical values? If so, then how is this set determined, namely: what constitutes a deontic relationship within this set? If not, then what else can constitute the elements of this set? Within logic, it is not necessary to determine this, and it is its unquestionable strength. However, in order to build a complete metaethical theory, at the same time, we have to look for an answer to solve Jörgensen's Dilemma.

Woleński, as mentioned in the previous section, understands the normative system as a set of true normative sentences (primary or secondary) limited to a given normalisation. Nevertheless, it is worth stressing that all the circumstances related to the conditions of effectivity of the relevant normative performatives are important for the constitution of such a set. Declarative sentences describe these circumstances, e.g. if I order someone to turn right, then one of the conditions is that this turn was permitted, that is, for the following sentence to be true "On such and such a road, and in such and such a place there is a right turn." These sentences are not part of the normative system but are related to the normative system. It is easy to notice the application of such an approach on the grounds of relating deontic logic, where it is assumed in the interpretation of deontic operators that the constituent sentences are related to the normative system. Thus – in order to preserve the basic features of Woleński's naturalistic metaethics – we should not understand it narrowly, as belonging to the system, but broadly, as being in relation to the normative system. In relation to the constitution of the effectivity of performative acts, which constitute truth-conditions of the primary normative sentences, which, in turn, are truth-conditions for deontic sentences.

Such an approach provides intuitive criteria of the validity of the normative reasonings. Firstly, if these sentences consist of deontic phrases or somehow depend on the validity of the norms, then they have logical values that depend on the effectivity of normative performative acts of the norm-maker.[13] Secondly, the sentences used in the inference should be related to the normative system. Consequently, in fact, most of the common normative inferences have an enthymematic character. In the example considered above, these are the sentences that lead to the effectivity of the performative act of the manager of a given road, that is, e.g. it had a legal foundation, but also the factual circumstances, that is, e.g. that actually there was a turn and a road, etc. A moment of reflection is enough to consider such consequences as natural and really related to the normative inferences.[14]

6. Summary

The value of philosophical logics lies mainly in the fact that they can constitute a common ground for philosophical dispute, providing tools to describe the aporias occurring there. Nevertheless, it happens that such logics exclude certain stances, indicating their contradiction or undesirable consequences.

In Jan Woleński's philosophy, it is essential that the proposed solutions are consistent with the basic logical properties of the analysed concepts. In the metaethical approach, Woleński emphasises the relations from the generalised square of opposition and Hume's principle. These are the minimum requirements that lead to standard deontic logic – naturalism is, thus, logically consistent. It is well known, however, that such a simple logic faces many problems that would also affect the given metaethical naturalism. The relating deontical logics described herein allow us to address specific problems, and at the same time, they acquire a philosophical interpretation related to naturalism justified by the non-linguistic concept of norms, which allows us to respond to Jörgensen's Dilemma and work out its informal details.

References

1. Carmo, J., and A. Jones. Deontic logic and contrary-to-duties, In D. M. Gabbay and F. Guenthner (eds.), *Handbook of Philosophical Logic*, vol. 8, Springer Science+Business Media, 2002, pp. 147-264.
2. Epstein, R. Relatedness and implication, *Philosophical Studies* 36 (2), 1979, pp. 137-173.
3. Epstein, R. (with the assistance and collaboration of: W. Carnielli, I. D'Ottaviano, S. Krajewski, R. Maddux). *The Semantic Foundations of Logic. Volume 1. Propositional Logics*, Dordrecht: Springer Science+Business Media, 1990.
4. Fagin, R., and J. Y. Halpern. Belief, awareness, and limited reasoning, *Artificial Intelligence* 34, 1988, pp. 39-76.
5. Hilpinen, R. Deontic logic, In L. Goble (ed.), *Blackwell guide to philosophical logic*, Oxford: Blackwell Publisher Ltd., 2001, pp. 159-182.
6. Hilpinen, R., and P. McNamara. Deontic logic. A historical survey and introduction, In D. Gabbay, J. Horty, X. Parent, R. van der Meyden and L. van der Torre (eds.), *Handbook of Deontic Logic and Normative Systems*, London: College Publications, 2013, pp. 3-136.
7. Hintikka, J. Deontic logic and its philosophical morals, In J. Hintikka, *Models for Modalities*, Dordrecht: Springer, 1969, pp. 184-214.
8. Jadacki, J. J. The Polish 20th century philosophers' contribution to the theory of imperatives and norms, *European Journal of Analytic Philosophy* 7 (2), 2011, pp. 106-145.
9. Jarmużek, T. Relating semantics as fine-grained semantics for intensional propositional logics, In A. Giordani and J. Malinowski (eds.), *Logic in High Definition. Current Issues in Logical Semantics*, London: Springer 2020, pp. 19-36
10. Jarmużek, T., and B. Kaczkowski, On some logic with a relation imposed on formulae. Tableau system F, *Bulletin of the Section of Logic* 43 (1/2), 2014, pp. 53-72.
11. Jarmużek, T., and M. Klonowski, On logic of strictly-deontic modalities. A semantic and tableau Approach, *Logic and Logical Philosophy* 29 (3), 2020, pp. 335-380.
12. Jarmużek, T., and M. Klonowski. Some intensional logics defined by relating semantics and tableau systems, In A. Giordani and J. Malinowski (eds.), *Logic in High Definition. Current Issues in Logical Semantics*, London: Springer, 2020, pp. 37-54.
13. Jörgensen, J. Imperatives and logic, *Erkenntnis* 7, 1937, pp. 288-296.
14. Opałek, K. Argumenty za nielingwistyczną koncepcją normy. Uwagi dyskusyjne, *Studia Prawnicze* 3–4, 1985, pp. 205-218.
15. Opałek, K., and J. Woleński. Logika i interpretacja powinności, *Krakowskie Studia Prawnicze* 21, 1988, pp. 13-29.
16. Searle, J. How to derive *ought* from *is*, *Philosophical Review* 73 (1), 1964, pp. 43-58.
17. Woleński, J. Spór o znaczenie normatywne, In *Naturalistyczne i antynaturalistyczne interpretacje humanistyki*, Poznań: Wydawnictwo UAM, 1966, pp. 3-14.

18. Woleński, J. *Z zagadnień analitycznej filozofii prawa*, Warszawa, Kraków: PWN, 1980 (Wydanie drugie, zmienione i rozszerzone: Kraków, Wydawnictwo Aureus, 2012).
19. Woleński, J. Naturalizm, antynaturalizm i metaetyka, *Folia Philosophica* 29, 2011, pp. 241-256.
20. Woleński, J. Próba naturalistycznej interpretacji norm i ocen, *Etyka* 50, 2015, pp. 29-47.
21. Woleński, J. *Wykłady o naturalizmie*, Toruń: Wydawnictwo Naukowe Uniwersytetu Mikołaja Kopernika w Toruniu, 2016.

Notes

1. Clearly, both approaches retain their independence – taking one of them does not force adoption of the other – however, combining them into a uniform framework, although merely outlined herein, provides a new tool for analysing normative reasoning.
2. More on this subject in [11, section 2.2].
3. Metaethical issues were the subject of Jan Woleński's work from the beginning of his scientific career (see [17]), summarised by the book *Z zagadnień analitycznej filozofii prawa* (see [18]; new, revised and extended edition: Woleński 2012). Some ideas, mainly the non-linguistic conception of norms, he developed in collaboration with Kazimierz Opałek (see [15]). Opałek [14] also defended it independently. The short description below we have based mainly on the newest publications: [19], [20], [21]. Woleński repeatedly points out that his defence of naturalism in metaethics is not categorical, thus – in other words – it is mostly a consequence of some set of abductive arguments. The contribution of Polish philosophers, including Woleński, to metaethics is discussed in a review work of Jadacki [8].
4. Woleński also discusses metaethical issues related to the bonitive sentences, adopting the standpoint of axiological presentationism. In this study, in establishing the relations with deontic logic, we limit ourselves merely to describing the metaethics of normative sentences.
5. Woleński employs "deductibility symbol": ⊢, that is, a symbol of syntactic consequence. However, in the context of Hume's guillotine and related problems, we prefer to employ semantic consequence, since it assumes that the sentences carry logical values, while, on the extralogical basis, it is possible to imagine that something is syntactically deductible (by simply performing acceptable transformations of the original schemes), and at the same time is neither true, nor false.
6. That is, by means of material implication. If, in turn, we allow *A* to be tautological, then, in result, we get one of the SDL problems which can be easily eliminated within relating deontic logic, by replacing the material implication with the relating implication, in which truth depends on the logical value of the constituent sentences and the occurrence of the relations between them (see [10], [12]).
7. "My preferences rather lie with noncognitivism, mainly because, nonetheless, the settlement of ethical disputes differs from the settlement of empirical disputes. On the other hand, as mentioned before, there seem to be no rational reasons to deny the axiological sentences the value of truth or false. However, this must be done with full understanding that it is not a matter of correlation between these sentences and natural reality in a narrow sense, but of truth in an appropriate deontic model relative to performatives, or in a bonitive model relative to axiological presentations" [20, p. 46].
8. Can't we also consider the interrogative sentences? In its direct form this would probably be challenging, but it is not out of the question that standards can be related to a set of answers to a certain question. This concept is not further discussed herein.
9. And yet, does the non-linguistic concept of norms actually somehow force metaethical naturalism? While certain doubts arise at this point, it is worth noticing that even though the norm as an act constitutes a component of empirical reality, one of the conditions for the effectivity of such an act may be from outside of such reality. In other words, it is not impossible for the normative performative act to be a kind of transfer of the norm from a non-empirical into empirical reality, to be in a way

"embodiment of a (proper) norm". Additional arguments are needed to weaken the occurrence of such a possibility. So, it may not be as easy to give up transcendence as imputed to naturalists.

10. This sentence can be formulated in a similar or equivalent way (e.g. whether we formulate a normative rule in general, or as one concerning John etc., nuances are not relevant here): John should have turned left; Left turn was obligatory; John was required to turn left, etc.

11. The above reservations are also made in favour of attempts to formalise a broad category of axiological sentences, including bonitive, evaluative, as well as imperative sentences and directives. The above example can be accordingly modified.

12. Needless to say, these sentences, individually, may also belong to other normative systems, but then – which is very intuitive – the validity of the inference cannot be considered. Are inter-normative inferences allowed, i.e. when the components of the inference belong to different normative systems? Perhaps, as far as they at least intersect.

13. Referring to our exemplary inference: what performative acts are behind the truth of sentence (2)? It is a performative act performed by the road manager, who, on the basis of the result of other performative – here: legislative (legal act, regulation) – established traffic rules in the described location.

14. Of course, some of them are shared with other common inferences, which are usually simplified, concealing the premises that are clear for interlocutors, not announcing the conclusion. etc. Thus, the characteristic attribute of normative inferences are psychological conditions, which indicate, for example, that the norm-maker actually has an intention to create such and not another law, that he has appropriate powers to do so, etc.