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Olivier Roy, Allard Tamminga and Malte Willer (eds.):  
*Deontic Logic and Normative Systems: 13th International Conference, DEON 2016, Bayreuth, Germany, July 18-21, 2016*  
 College Publications, Milton Keynes, 2016, 302 pages<sup>1</sup>

Deontic logic enjoys increasing popularity. First and foremost, there are the biennial DEON conferences dedicated to deontic logic and related topics (since 1991). Moreover, *Handbook of Deontic Logic and Normative Systems* came into existence in 2013. The crucial importance of this publication for further rise of deontic logic is beyond question. But let us move three years forward. The 13<sup>th</sup> DEON conference took place in Bayreuth (Germany) on July 18-21, 2016. The reviewed book contains the proceedings of this conference. Interestingly enough, the special focus was “Reasons, Argumentation and Justification”. The clever choice of special focus has led to an interesting cooperation between argumentation theory and deontic logic. The conference had four keynote speakers, namely John Broome, Janice Dowell, Xavier Parent, and Gabriella Pigozzi.

The book contains eighteen interesting and original papers that are usually structured as follows: first, the authors introduce their topic, provide us with some background and some motivations for developing a new logical system, or a couple of them. Second, syntax, semantics and some inferential machinery are introduced. The effectivity and the problem-solving potential of the systems are usually demonstrated in passing. Next, the formal properties of the systems are proved, or at least mentioned. Finally, the papers conclude the achieved results, providing us

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also with some directions for further research. This is how the nicely structured face of modern logic looks!

The first paper *Cumulative Aggregation* comes from Ambrossio, Parent and van der Torre. The paper employs the framework of *Abstract Normative Systems*. It is concerned with conditional obligations, more specifically, with two principles of aggregation (simple and cumulative). Two systems are introduced, the system FA for simple aggregation, and the system FC for cumulative aggregation. As the authors acknowledge, their contribution is mostly technical. From the philosophical point of view the paper lacks extensive discussion of the relevance of these results to normative reasoning. There is a typo at the end of p. 4. The authors write that “Let  $FA = \{FD, AND\}$ ”. But FA is a certain triple, whilst  $\{FD, AND\}$  is a set of rules, so there should be “R” instead of “FA” (R is a set of rules).

Anglberger, Faroldi and Korbmacher are the authors of the second paper, *An Exact Truthmaker Semantics for Permission and Obligation*. The paper proposes semantics for permissions and obligations. This account is hyperintensional, so deontic operators are not closed under logical equivalence. Hyperintensionality tends to be an efficient weapon against paradoxes, and deontic logic is no exception. The authors ascribe truth-values to obligations and permissions (p. 23), though intuitively these are not truth-apt. It would be better to speak about the truth-values of deontic propositions and about the satisfaction (fulfilment, validity) of obligations. As regards hyperintensionality, though the author of this review herself holds a hyperintensional stance on deontic logic, there are some dangers that come with this feature. For instance, the formula  $P(q \vee \neg q)$  does not hold in the proposed system (see p. 24), but the formula  $P(p \wedge q) \rightarrow P(q \wedge p)$  is valid (since  $p \wedge q$  has the same truthmakers as  $q \wedge p$ , as is clear from p. 29). Regarding the former, the authors list the intuitive counterexample: it may not be permitted to kill the cat or not kill the cat (p. 24). However, if “or” stands for disjunction, the formula  $P(q \vee \neg q)$  does not allow for more than a tautology. But if we are allowed to list such sentences as counterexamples, one can list a similar sentence against the formula  $P(p \wedge q) \rightarrow P(q \wedge p)$ . For instance, it may be permitted to close the door and open the window, but not permitted to open the window and close the door (since the order matters). Yet of course, if the order matters, we are no longer dealing with conjunction – but why should the former sentence count as a good counterexample, but the latter as a bad one? Finally, there is a missing “O” at the p. 30, derivation (ii), line (e).

The third comes the paper *A Structured Argumentation Framework for Detaching Conditional Obligations* written by Beirlaen and Straßer. As the first

paper, this paper is too devoted to conditional obligations. The paper starts with abstract argumentation framework, subsequently instantiating it with deontic arguments, thus generating a structured deontic argumentation framework. The authors claim that obligations that are violated should not be detached (p. 42). Yet intuitively, the fact that an obligation is violated does not imply that the obligation no longer holds.

The fourth paper *Argumentation Frameworks with Justified Attacks* is written by Dyrkolbotn and Pedersen. As in the previous paper, argumentation frameworks are used here. However, and interestingly enough, argumentation frameworks are used to analyse the argumentation itself. A system for metalogical reasoning is thus developed. A well-known troublesome example from default logic is analysed within the proposed system, aiming to resolve a meta-level disagreement pertaining to examples of this sort.

The fifth is the paper *Arguments, Responsibilities and Moral Dilemmas in Abductive Default Logic* written by Dyrkolbotn, Pedersen and Broersen. This paper employs two frameworks, default logic and again, argumentation frameworks. The paper presupposes that agents are responsible for something only when they have had a choice. The agent should not be blamed for something that is a designer's fault. However, there seem to be two weak points. First, the epistemic aspect is neglected. It is stated that "we do not assume that the agent knows (or does not know) the (implicit) consequences of applying certain rules" (p. 66). However, in reality, agents have some epistemic capacities. For instance, the epistemic ability of an artificial intelligence is given in advance: we know what the agent knows, and to what extent it can carry out reasoning (though it is not at all trivial to speak about the responsibility of a machine). On the other hand, the epistemic competence of human agent is not given in advance. Despite that, we can presuppose something like Jago's *bounded rationality*: an agent is neither a deductive machine, nor incapable of trivial inferences (see Jago 2014a; 2014b). The second weak point is the very presupposition that agents are never responsible when the element of choice is missing. Consider the following example: "imagine a young woman wondering whether to enlist in the army. (...) [I]f she chooses to enlist and then decides to kill someone – intentionally – on the orders of a superior officer, we would hesitate to say she is morally responsible" (p. 73). But imagine two similar scenarios: (1) a wealthy agent A, a racist, as well as a psychopath, freely decides to join army with an intention of killing people of other races and (2) a poor agent B, an unemployed father of three children and a pacifist decides to join army with an intention

of earning money for his family. Intuitively, we would say the agent A is responsible for the subsequent killing (no obligation forced A to join the army) but the agent B is not responsible for the killing (B was forced to join the army by obligation of earning money for his family).

The sixth paper *Basic Action Deontic Logic* is written by Giordani and Canavotto. This paper develops a system of dynamic deontic action logic that consists of ontic part (logic of states and actions) together with deontic part (abstract and actual deontic ideal).

Governatori, Olivieri, Calardo and Rotolo wrote the seventh paper, *Sequence Semantics for Norms and Obligations*. This paper proposes semantics for sequences of (compensatory) obligations and for (ordered) sequences of permissions. The suggested sequence semantics is an extension of neighbourhood semantics. Thanks to this, the authors provide us with a nice adaptation of a standard completeness proof for neighbourhood semantics. There should be  $\langle \|a_1\|_V, \dots, \|a_n\|_V \rangle$  and  $\langle \|a_1\|_V, \dots, \|a_{n-1}\|_V \rangle$  instead of  $\langle \|a\|_1, \dots, \|a_n\| \rangle$  and  $\langle \|a\|_1, \dots, \|a_{n-1}\| \rangle$  in the proof of the theorem 5.9 (the completeness of the system  $D^{\otimes}$ ), p. 104; and there are seven, not six detachment schemata (p. 105).

Ju and van Eijck are the authors of the eighth paper entitled *To Do Something Else*. The paper proposes two dynamic action logics, stemming from an idea that normative notions can be defined in terms of consequences of actions carried out (note that this background idea may be criticised by the proponents of deontological ethics). The initial system of dynamic deontic logic provided by Meyer led to incorrect reading of refraining from doing something. The present paper offers a new reading of refraining in terms of *doing something else*.

*Multivalued Logics for Conflicting Norms*, the ninth paper, is written by Kullicki and Trypuz. The authors develop three systems of multi-valued deontic action logics, whilst the main focus is on normative conflicts and on merging norms. The background idea is that one can compute deontic values of actions just as one can compute truth values in propositional logic. The first proposed system offers a pessimistic view on normative conflicts, the second system an optimistic view, and the third a neutral view. The authors seem to be sympathetic to the second and the third system that have the optimistic flavour and liberate the agent from the burden of guilt (p. 133). To motivate the optimistic view, they claim that in cases of normative conflicts, if we follow one obligation, it is enough to make the decision good (p. 132). Yet one may object that following one obligation is not enough if we have more obligations. For instance, if one has two kids in the kindergarten, it is not enough to pick just one of them up. Finally, the axiom (30)

$N^b(\alpha \sqcap \beta) \rightarrow N^b(\alpha) \vee N^b(\beta) \vee (O(\alpha) \wedge F(\beta))$  (p. 134) should contain one more disjunct:  $F(\alpha) \wedge O(\beta)$ . The system will not be sound otherwise, since this axiom is not a tautology: if the value of  $\alpha$  is *f* and the value of  $\beta$  is *o*, then the value of  $\alpha \sqcap \beta$  is *T*, so the value of the antecedent formula  $N^b(\alpha \sqcap \beta)$  is 1, but neither of the three disjuncts holds in this case, so the value of the consequent will be 0, and the resulting value will be 0 too.

Liao, Oren, van der Torre and Villata are the authors of the tenth paper, *Prioritized Norms and Defaults in Formal Argumentation*. The paper introduces a prioritized abstract normative system and analyses three different approaches to non-monotonic reasoning in terms of it. It is claimed that “If priorities are disregarded, then this logic program has two answer sets:  $\{a, p, x\}$  and  $\{a, p, \neg x\}$ . Thus, considering priorities, the former is the unique preferred answered set, as pointed out in Example 2.6” (p. 144), but the authors obviously meant the latter, not the former set.

The eleventh position in the book belongs to the paper *Reasons to Believe in a Social Environment* written by Liu and Lorini. The paper devises a new system of Dynamic Epistemic Logic of Evidence Sources, DEL-ES. There should be “justification logic” instead of “justication logic” (p. 156 and p. 169). And the approach in this paper is quantitative, not qualitative, contrary to what the authors suggest at the page 157.

Marra is the author of the twelfth paper, *Objective Oughts and a Puzzle about Futurity*. The paper is concerned with future-dependent objective oughts. The author attempts to briefly defend the usefulness of the objective oughts, though not persuasively enough. What is right or best seems to be relative at least to some package of norms, or values, and there may be considerable differences between the best action for one agent and the best action for another agent. Moreover, the article tries to avoid determinism, but comes with the commitment to indeterminism. Both of them are strong metaphysical commitments – they should be either avoided or it should be argued for the chosen option.

The thirteenth position in the book is occupied by the *Rights in Default Logic* written by Mullins. The author argues that default logic is an appropriate framework for reasoning about rights and consequently develops his account in terms of Horty’s default logic. The example author uses as an illustration of the role of strong and weak permission (p. 193) does not seem apt. Strong permissions are understood as positive (explicitly given) and weak permissions as negative (no norm requires us to act in a certain way). The example in question concerns the prohibition of insulting speech overridden by the right to freedom of

political communication. However, what's going on in this example is some priority ordering of norms, not the distinction between strong and weak permissions.

Pavese is the author of the fourteenth paper, *Logical Inference and Its Dynamics*. The author provides us with an argument from dynamic conception of inference to a dynamic conception of inference rules, which motivates her subsequent proposal. However, the account seems to be vulnerable to the paradox of inference. For instance, the author holds that a context supports some sentence just in case the result of updating context with this sentence is the context itself (p. 206) and that sentence with "therefore" is informationally empty (p. 208). Intuitively, an inference brings some new (analytic) information (see Duží 2008 for this line of thought).

Peterson and Kulicki wrote the fifteenth article *Conditional Normative Reasoning with Substructural Logics*. The starting point is Peterson's system CNR (Conditional Normative Reasoning) that aims to be paradox-free deontic logic but does not have De Morgan validities and the Law of Excluded Middle. Because of this, the authors propose an "intermediate" logic that is stronger than CNR but still avoids undesirable paradoxes.

Silk is the author of the sixteenth paper, *Update Semantics for Weak Necessity Modals*. The paper is concerned with formal analysis of weak and strong necessity modals (should and must), mostly in their deontic reading. The author claims that the weakness of should consists in a failure to presuppose that the relevant worlds in which the prejacent is necessary are candidates for actuality. The author analyses the sentence "Alice must be generous" (p. 244), but it is not clear what is his view on ambiguity of this (and similar) sentences. Obviously, the sentence has deontic, as well as epistemic reading. The author claims that according to the proposed semantics, when we say something like the above sentence, we don't update information, just "place a necessity claim on the conversational table" (p. 246). Yet this does not seem correct. When we say that Alice should be generous, we update information that it is *desirable* that Alice is generous. Default reading may be useful here: when we say that Alice should be generous (in deontic sense), we are simply saying that Alice ought to be generous unless some more preferred ought overrides this obligation. Finally, there should be "the first update of the fourth line" instead of "the first update of the third line" (p. 248), since the author is obviously discussing the difference between  $[w \mid w = \perp\omega]$  and  $[w \mid w = \top\omega]$ .

The seventeenth paper *Coarse Deontic Logic (short version)* is written by Van De Putte. The author devises a group of multi-modal logics based on Cariani's semantics. Importantly, these logics invalidate Inheritance (i.e. the inference from OA and A entails B to OB) and allow for coarseness (OA can be true even if there are intuitively impermissible ways of making A true). Resulting logics are compared to some existing deontic logics. The author claims that (C+) implies that  $(A_B)$  and  $(A_I)$  are equivalent – there should be  $(A_P)$  instead of  $(A_I)$  (p. 268).

Žarnić is the author of the last, eighteenth paper: *Deontic Logic as a Study of Conditions of Rationality in Norm-related Activities*. Later Von Wright suggested a reinterpretation of deontic logic as the study of rationality conditions of the norm-giving activity. The paper formalizes Von Wright's suggestion within the set-theoretic approach, thus providing us with certain logical pragmatics. Yet it seems to be questionable to what extent is the alleged reinterpretation a genuine reinterpretation, since the theorems are in either case the same. The author writes: "What has been previously understood as a conceptual relation, later becomes a normative relation; a norm for the norm-giving activity, and not the logic of the norms being given" (p. 279-280). However, one can argue that there is no such disanalogy between *proper* logic and deontic logic: *any* logic is primarily concerned with the *right* usage of language, and with *correct* inferences, not with the actual (often flawed) inferences carried out by real humans.

Finally, the end of the book. I have a confession to make: I really enjoyed the reading! The book is definitely a must-read for anyone who is curious about the state of art in deontic logic. I heartily recommend to buy a copy (it is cheap, thanks to College Publications!). However, target readers are certainly not exhausted by the circle of deontic logicians. Since the special focus was argumentation, and the spectrum of used frameworks was incredibly broad, the book might be interesting for any logician or analytic philosopher.

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Jan Dejnožka: *Bertrand Russell on Modality and Logical Relevance*  
CreateSpace Independent Publishing Platform, 2016, 647 pages<sup>1</sup>

As the title indicates, *Bertrand Russell on Modality and Logical Relevance* investigates two main topics: modality and logical relevance in the work of Bertrand Russell. It claims to be the only study of Russell's views about modality and logical relevance ever written (p. xi) and as such deserves attention of anyone interested in the magnum opus of the philosopher. In the scope of more than six hundred pages, Dejnožka brought to light many aspects of Russell's philosophy which, implicitly or explicitly, record Russell's interest in modal matters. Dejnožka's strategy is quite straightforward: to gather together relevant quotations including modal notions and, consequently, interpret them in a systematic and 'Russell friendly' way. True, such a comprehensive overview is unique and of interest of a wider group of philosophers. Projects of this character though often face a threat of misrepresentation, overestimation of one's position, or simply a danger of going (far) beyond what the particular papers and books bear. Although I am not claiming this is Dejnožka's case, I will try to show some potential risks of the project.

Dejnožka's excursion into the philosophy of Bertrand Russell comes in ten chapters. After an extensive introduction, Dejnožka presents his main objective: to resist a view dubbed as 'V': the view that 'not only did Russell not offer a

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