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Corrigendum

Corrigendum to “A map of dependencies among three-valued logics” [Information Sciences 250 (2013) 161–177]

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A B S T R A C T

Our article “A map of dependencies among three-valued logics” (Information Sciences, vol. 250, 161–177, 2013) contains some typing mistakes that may affect a proper understanding of the paper. They are corrected here.

Table 1

(Table 8 in [1]) Relations among implications.

N.	How it can be obtained	Name
1	Residuation applied to $p *_1 q = \neg((\neg p \rightarrow_{12} \neg q) \rightarrow_{12} \neg q)$	
2	$(p \rightarrow_3 q) \wedge (\neg q \rightarrow_3 \neg p), (p \rightarrow_4 q) \wedge (\neg q \rightarrow_4 \neg p)$	Sobociński
3	$\neg p \vee (p \rightarrow_2 q)$	
4	$q \vee (p \rightarrow_1 q), q \vee (p \rightarrow_2 q)$	Jaśkowski
5	$\neg p \vee (p \rightarrow_1 q), (p \rightarrow_3 q) \vee (\neg q \rightarrow_3 \neg p), q \vee (p \rightarrow_3 q)$	(strong) Kleene
6	$(p \rightarrow_4 q) \vee (\neg q \rightarrow_4 \neg p), \neg p \vee (p \rightarrow_4 q)$	
6	In terms of \rightarrow_{11} (see Remark 4 of [1])	Sette
7	Residuation applied to $p *_6 q = \neg((\neg p \rightarrow_8 \neg q) \rightarrow_8 \neg q)$	
8	$\neg p \vee (p \rightarrow_6 q)$	
8	$(p \rightarrow_6 q) \vee (\neg q \rightarrow_6 \neg p), (p \rightarrow_7 q) \vee (\neg q \rightarrow_7 \neg p)$	
	$p \rightarrow_7 (p \rightarrow_7 q), (p \rightarrow_9 q) \vee (\neg q \rightarrow_9 \neg p)$	
	$(p \rightarrow_{12} q) \vee (\neg q \rightarrow_{12} \neg p)$	
9	$p \rightarrow_{11} (p \rightarrow_{11} q), q \vee (p \rightarrow_{12} q)$	Nelson
10	$q \vee (p \rightarrow_{14} q)$	Gödel
11	$(p \rightarrow_7 q) \wedge (\neg q \rightarrow_7 \neg p), (p \rightarrow_9 q) \wedge (\neg q \rightarrow_9 \neg p)$	Łukasiewicz
	$(p \rightarrow_{10} q) \vee (\neg q \rightarrow_{10} \neg p), \neg p \vee (p \rightarrow_{10} q),$	
	$(p \rightarrow_{13} q) \vee (\neg q \rightarrow_{13} \neg p), p \vee (p \rightarrow_{13} q)$	
12	$p \rightarrow_{12} q = p \rightarrow_{13} (p \rightarrow_{13} q)$	Bochvar external
13	$\neg p \vee (p \rightarrow_{14} q)$	
14	$(p \rightarrow_6 q) \wedge (\neg q \rightarrow_6 \neg p), (p \rightarrow_{10} q) \wedge (\neg q \rightarrow_{10} \neg p)$	Gaines–Rescher
	$(p \rightarrow_{12} q) \wedge (\neg q \rightarrow_{12} \neg p), (p \rightarrow_{13} q) \wedge (\neg q \rightarrow_{13} \neg p)$	

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Definition 3 of our paper [1], Section 2.1.3, p. 166, should read as follows:

Definition 3. [2]

A binary operator $*$ on a finite scale $\{F < x_1 < \dots < T\}$ is named *t-operator* if it is associative, commutative, such that $F * F = F, T * T = T$ and it satisfies 1-smoothness: $x_i * x_{j-1} \leq x_i * x_j$ and if $x_i * x_j = x_k$ then $\{x_{i-1} * x_j, x_i * x_{j-1}\} \subseteq \{x_k, x_{k-1}\}$.

Moreover in Table 8, due to the lack of horizontal lines separating the items in the published version, the left-hand column containing the numbering of implications has been erroneously shifted down and items in this column no longer correspond to the items in the two other columns. This is also due to the presence of a blank item in Table 8, line 1, column 2 of original manuscript, that looked misleadingly erroneous in the proofs. Below we provide a completed Table 8 where blank lines are filled with information present in Remark 4, p. 169 (for Sette implication 6) and also in Section 3.3 (for implications 1 and 6) of our paper [1] (see Table 1).

References

- [1] D. Ciucci, D. Dubois, A map of dependencies among three-valued logics, *Information Sciences* 250 (2013) 161–177.
- [2] M. Mas, G. Mayor, J. Torrens, t-Operators, *International Journal of Uncertainty Fuzziness and Knowledge-Based Systems* 7 (1) (1999) 31–50.