

The logic of non-deterministic matrix presented here allows reasoning with intersective gradable adjectives uttered by a single agent.

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$$\{["1"]\} \{["0", "i"]\}$$

1 Interpretation

	N
0	$\{i, 1\}$
i	$\{0, 1\}$
1	$\{0, i\}$

\wedge	0	i	1
0	$\{0\}$	$\{i\}$	$\{i\}$
i	$\{i\}$	$\{i\}$	$\{i\}$
1	$\{i\}$	$\{i\}$	$\{1\}$

\vee	0	i	1
0	$\{0\}$	$\{i\}$	$\{1\}$
i	$\{i\}$	$\{i\}$	$\{1\}$
1	$\{1\}$	$\{1\}$	$\{1\}$

	\neg
0	$\{1\}$
i	$\{i\}$
1	$\{0\}$

2 Schemas of Σ_N

$$\begin{array}{c}
 \text{Size: 3} \\
 \text{r1} \\
 \frac{N\varphi, \varphi}{} \\
 \text{r3} \\
 \hline
 N\varphi, \neg N\varphi, \neg\varphi, \varphi \\
 \text{r4} \\
 \frac{\neg N\varphi, \neg\varphi}{} \\
 N\varphi, \varphi
 \end{array}$$

3 Schemas of Σ_{and}

$$\begin{array}{c}
 \text{Size: 8} \\
 \text{r5} \\
 \frac{\neg((\varphi \wedge \psi)), \varphi}{} \\
 \varphi \wedge \psi \\
 \text{r6} \\
 \frac{\neg((\varphi \wedge \psi)), \psi}{} \\
 \varphi \wedge \psi \\
 \text{r7} \\
 \frac{\varphi, \psi}{} \\
 \varphi \wedge \psi \\
 \text{r8} \\
 \frac{\neg\varphi, \neg\psi}{} \\
 \varphi \wedge \psi, \neg((\varphi \wedge \psi)), \varphi, \psi \\
 \text{r9} \\
 \frac{\neg((\varphi \wedge \psi))}{} \\
 \varphi \wedge \psi, \neg\varphi, \varphi \\
 \text{r10} \\
 \frac{\neg((\varphi \wedge \psi))}{} \\
 \varphi \wedge \psi, \neg\psi, \psi \\
 \text{r18} \\
 \frac{\varphi \wedge \psi}{} \\
 \varphi \\
 \text{r20} \\
 \frac{\varphi \wedge \psi}{} \\
 \psi
 \end{array}$$

4 Schemas of Σ_{neg}

Size: 3

r2

$$\frac{\neg\varphi, \varphi}{\quad}$$

r11

$$\frac{\varphi}{\neg\neg\varphi, \neg\varphi}$$

r14

$$\frac{\neg\neg\varphi}{\neg\varphi, \varphi}$$

5 Schemas of Σ_{or}

Size: 6

r12

$$\frac{\neg\varphi, \neg\psi}{\neg((\varphi \vee \psi)), \varphi \vee \psi, \varphi, \psi}$$

r13

$$\frac{\neg((\varphi \vee \psi))}{\neg\varphi, \varphi \vee \psi, \varphi}$$

r15

$$\frac{\neg((\varphi \vee \psi))}{\neg\psi, \varphi \vee \psi, \psi}$$

r16

$$\frac{\varphi}{\varphi \vee \psi}$$

r17

$$\frac{\psi}{\varphi \vee \psi}$$

r19

$$\frac{\varphi \vee \psi}{\varphi, \psi}$$