The logic of non-deterministic matrix presented here allows reasoning with intersective gradable adjectives uttered by multiple agents.

Contents

{["1","4","5","6"]} {["0","2","3","7"]}

1 Interpretation

	I
0	{0,2,3,7}
1	{0,2,3,7}
2	{1,4,5,6}
3	{1,4,5,6}
4	{0,2,3,7}
5	{1,4,5,6}
6	{1,4,5,6}
7	{0,2,3,7}

	N
0	{5}
1	{3}
2	{4}
3	{1}
4	{2}
5	{0}
6	{7}
7	{6}

$\wedge$	0	1	2	3	4	5	6	7
0	{0,2,3,7}	{2}	{2}	{2,3}	{2,3}	{2}	{2,3}	{2,7}
1	{2}	{1,2,5,7}	{2}	{2}	{2,5}	{2,5}	{2,5}	{2,7}
2	{2}	{2}	{2}	{2}	{2}	{2}	{2}	{2}
3	{2,3}	{2}	{2}	{2,3}	{2,3}	{2}	{2,3}	{2}
4	{2,3}	{2,5}	{2}	{2,3}	{2,3,5,6}	{2,5}	{2,3,5,6}	{2,7}
5	{2}	{2,5}	{2}	{2}	{2,5}	{2,5}	{2,5}	{2}
6	{2,3}	{2,5}	{2}	{2,3}	{2,3,5,6}	{2,5}	{2,3,5,6}	{2}
7	{2,7}	{2,7}	{2}	{2}	{2,7}	{2}	{2}	{2,7}

$\vee$	0	1	2	3	4	5	6	7
0	{0,1,2,3,4,5,6,7}	{1,5}	{2,5}	{2,3,5,6}	{1,4,5,6}	{1,5}	{1,4,5,6}	{1,2,5,7}
1	{1,5}	{1,5}	{1,5}	{1,5}	{1,5}	{1,5}	{1,5}	{1,5}
2	{2,5}	{1,5}	{2,5}	{2,5}	{1,5}	{1,5}	{1,5}	{2,5}
3	{2,3,5,6}	{1,5}	{2,5}	{2,3,5,6}	{1,4,5,6}	{1,5}	{1,4,5,6}	{2,5}
4	{1,4,5,6}	{1,5}	{1,5}	{1,4,5,6}	{1,4,5,6}	{1,5}	{1,4,5,6}	{1,5}
5	{1,5}	{1,5}	{1,5}	{1,5}	{1,5}	{1,5}	{1,5}	{1,5}
6	{1,4,5,6}	{1,5}	{1,5}	{1,4,5,6}	{1,4,5,6}	{1,5}	{1,4,5,6}	{1,5}
7	{1,2,5,7}	{1,5}	{2,5}	{2,5}	{1,5}	{1,5}	{1,5}	{1,2,5,7}

	$\neg$
0	{1}
1	{0}
2	{2}
3	{5}
4	{4}
5	{3}
6	{6}
7	{7}

2 Schemas of Σ_N

Size: 6

r1

$$\frac{IN\varphi,\ I\varphi}{}$$

r2

$$\frac{N\varphi,\ \varphi}{}$$

r3

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

r4

$$\frac{}{IN\varphi,\ I\varphi}$$

r5

$$\frac{}{N\varphi,\ \varphi}$$

r6

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

3 Schemas of Σ_{and}

Size: 13

r7

$$\frac{I\varphi}{I((\varphi \wedge \psi))}$$

r8

$$\frac{I\psi}{I((\varphi \wedge \psi))}$$

r9

$$\frac{\varphi \wedge \psi,\ \neg((\varphi \wedge \psi))}{I((\varphi \wedge \psi))}$$

r10

$$\frac{\varphi \wedge \psi,\ \neg\varphi}{I((\varphi \wedge \psi))}$$

r11

$$\frac{\varphi \wedge \psi,\ \neg\psi}{I((\varphi \wedge \psi))}$$

r12

$$\frac{\neg((\varphi \wedge \psi)),\ \varphi}{I((\varphi \wedge \psi))}$$

r13

$$\frac{\neg((\varphi \wedge \psi)),\ \psi}{I((\varphi \wedge \psi))}$$

r14

$$\frac{\neg\varphi,\ \psi}{I((\varphi \wedge \psi))}$$

r15

$$\frac{\neg\psi,\ \varphi}{I((\varphi \wedge \psi))}$$

r16

$$\frac{\neg((\varphi \wedge \psi))}{\neg\varphi}$$

r17

$$\frac{\neg((\varphi \wedge \psi))}{\neg\psi}$$

r18

$$\frac{\varphi \wedge \psi}{\varphi}$$

r19

$$\frac{\varphi \wedge \psi}{\psi}$$

4 Schemas of Σ_{neg}

Size: 4

r20

$$\frac{I\varphi}{I\neg\varphi}$$

r21

$$\frac{I\neg\varphi}{I\varphi}$$

r22

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

r23

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

5 Schemas of Σ_{or}

Size: 8

r24

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

r25

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

r26

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

r27

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

r28

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

r29

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

r30

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

r31

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