Deontic Disjunction

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Meaning Sciences Club

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Two Puzzles

Free Choice Permission

(1) You may have the gin or the whiskey.
$\textsc{may}(G \textsc{ or } W)$

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(FC) $\textsc{may}(\phi \textsc{ or } \psi) \Rightarrow \textsc{may}\,\phi \wedge \textsc{may}\,\psi.$

Free Choice Permission

(1) You may have the gin or the whiskey.
$\text{MAY}(G \text{ OR } W)$

(FC) $\text{MAY}(\phi \text{ OR } \psi) \Rightarrow \text{MAY}\,\phi \wedge \text{MAY}\,\psi.$

(Exclusivity) $\text{MAY}(\phi \text{ OR } \psi) \not\Rightarrow \text{MAY}(\phi \wedge \psi).$

Ross's Puzzle

(2) I ought to post the letter.
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$\textsc{ought}(R \textsc{ or } B)$

(R) $\textsc{ought}(\phi) \nRightarrow \textsc{ought}(\psi \textsc{ or } \psi).$

(R+) $\textsc{ought}(\phi \textsc{ or } \psi) \Rightarrow \textsc{may}\,\phi \wedge \textsc{may}\,\psi).$

Sayre-McCord's Observation

$$\textsc{ought}(\phi) \nRightarrow \textsc{ought}(\phi \textsc{ or } \psi)$$

Enderton (1972)

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(4) Ralph may go to the movies.

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(4) Ralph may go to the movies.

(5) Ralph ought to pay back his loan.

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Enderton (1972)

(4) Ralph may go to the movies.

(5) Ralph ought to pay back his loan.

(6) Ralph ought to pay back his loan or go to the movies.

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$$\textsc{ought}(\phi) \not\Rightarrow \textsc{ought}(\phi \textsc{ or } \psi)$$

Enderton (1972)

(4) Ralph may go to the movies.

(5) Ralph ought to pay back his loan.

(6) Ralph ought to pay back his loan or go to the movies.

(SM) $\textsc{may}(\psi) \wedge \textsc{ought}(\phi) \not\Rightarrow \textsc{ought}(\phi \textsc{ or } \psi)$

Sayre-McCord's Observation

(Conditionals-1)

I may do $(\phi \text{ OR } \psi) \Rightarrow$ If I do not do ϕ, I may do ψ;

I may do $(\phi \text{ OR } \psi) \Rightarrow$ If I do not do ψ, I may do ϕ.

Sayre-McCord's Observation

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I may do $(\phi \text{ OR } \psi) \Rightarrow$ If I do not do ψ, I may do ϕ.

(Conditionals-2)

I ought to do $(\phi \text{ OR } \psi) \Rightarrow$ If I do not do ϕ, I ought to do ψ;
I ought to do $(\phi \text{ OR } \psi) \Rightarrow$ If I do not do ψ, I ought to do ϕ.

May:

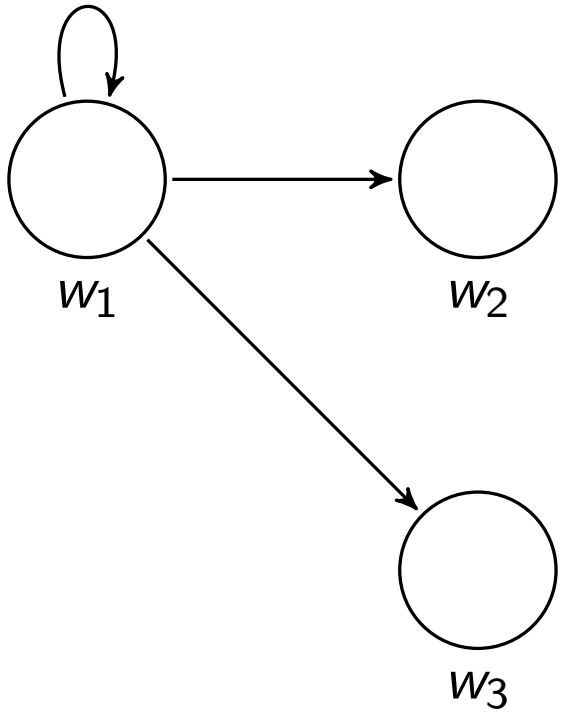
(Failure of 'or' intro)	$\text{MAY}\,\phi \not\Rightarrow \text{MAY}(\phi\ \text{OR}\ \psi)$
(FC)	$\text{MAY}(\phi\ \text{OR}\ \psi) \Rightarrow \text{MAY}\,\phi, \text{MAY}\,\psi$
(Conditionals 2)	$\text{MAY}(\phi\ \text{OR}\ \psi) \Rightarrow$ if $\neg\phi$, then $\text{MAY}\,\psi$

Ought:

(Failure of 'or' intro)	$\text{OUGHT}\,\phi \not\Rightarrow \text{OUGHT}(\phi\ \text{OR}\ \psi)$
(R+)	$\text{OUGHT}(\phi\ \text{OR}\ \psi) \Rightarrow \text{MAY}\,\phi, \text{MAY}\,\psi$
(Conditionals 1)	$\text{OUGHT}(\phi\ \text{OR}\ \psi) \Rightarrow$ if $\neg\phi$, then $\text{OUGHT}\,\psi$

Table: Data for 'ought' and 'may'.

Proto-Semantics with Kripke Frames



Proto-Semantics with Kripke Frames

Definition (Circumstantial Possibility)

ϕ is **circumstantially possible at** s iff $\exists w' \in s$ such that ϕ is true at w'.

Thank You!

Bibliography

Enderton, Herbert B. (1972). *A Mathematical Introduction to Logic*. Boston: Academic Press.