

Verschränkte semiotische Systemrelationen

1. Systemrelationen und konverse Systemrelationen wurden in Toth (2025a, b) in die Semiotik eingeführt. Zu Verschränkungen in der Semiotik vgl. Toth (2025c). Im folgenden werden verschränkte semiotische Systemrelationen bifunktoriell komponiert.

2. Verschränkte semiotische Systemrelationen

$$\begin{aligned} 3.1_I \ 2.1_A \ 1.1_R & \quad \times \quad 1.1_R \ 1.2_R \ 1.3_R \\ (3.2_{I,A}, 1.1_{I,A} \mid 2.1_{A,R}, 1.1_{A,R}) & \quad \times \quad (1.1_{R,A}, 1.2_{R,A} \mid 1.1_{A,I}, 2.3_{A,I}) \\ 3.1_I \ 2.1_A \ 1.2_R & \quad \times \quad 2.1_A \ 1.2_R \ 1.3_R \\ (3.2_{I,A}, 1.1_{I,A} \mid 2.1_{A,R}, 1.2_{A,R}) & \quad \times \quad (2.1_{R,A}, 1.2_{R,A} \mid 1.1_{A,I}, 2.3_{A,I}) \\ 3.1_I \ 2.1_A \ 1.3_R & \quad \times \quad 3.1_I \ 1.2_R \ 1.3_R \\ (3.2_{I,A}, 1.1_{I,A} \mid 2.1_{A,R}, 1.3_{A,R}) & \quad \times \quad (3.1_{R,A}, 1.2_{R,A} \mid 1.1_{A,I}, 2.3_{A,I}) \\ 3.1_I \ 2.2_A \ 1.1_R & \quad \times \quad 1.1_R \ 2.2_A \ 1.3_R \\ (3.2_{I,A}, 1.2_{I,A} \mid 2.1_{A,R}, 2.1_{A,R}) & \quad \times \quad (1.2_{R,A}, 1.2_{R,A} \mid 2.1_{A,I}, 2.3_{A,I}) \\ 3.1_I \ 2.2_A \ 1.2_R & \quad \times \quad 2.1_A \ 2.2_A \ 1.3_R \\ (3.2_{I,A}, 1.2_{I,A} \mid 2.1_{A,R}, 2.2_{A,R}) & \quad \times \quad (2.2_{R,A}, 1.2_{R,A} \mid 2.1_{A,I}, 2.3_{A,I}) \\ 3.1_I \ 2.2_A \ 1.3_R & \quad \times \quad 3.1_I \ 2.2_A \ 1.3_R \\ (3.2_{I,A}, 1.2_{I,A} \mid 2.1_{A,R}, 2.3_{A,R}) & \quad \times \quad (3.2_{R,A}, 1.2_{R,A} \mid 2.1_{A,I}, 2.3_{A,I}) \\ 3.1_I \ 2.3_A \ 1.1_R & \quad \times \quad 1.1_R \ 3.2_I \ 1.3_R \\ (3.2_{I,A}, 1.3_{I,A} \mid 2.1_{A,R}, 3.1_{A,R}) & \quad \times \quad (1.3_{R,A}, 1.2_{R,A} \mid 3.1_{A,I}, 2.3_{A,I}) \\ 3.1_I \ 2.3_A \ 1.2_R & \quad \times \quad 2.1_A \ 3.2_I \ 1.3_R \\ (3.2_{I,A}, 1.3_{I,A} \mid 2.1_{A,R}, 3.2_{A,R}) & \quad \times \quad (2.3_{R,A}, 1.2_{R,A} \mid 3.1_{A,I}, 2.3_{A,I}) \\ 3.1_I \ 2.3_A \ 1.3_R & \quad \times \quad 3.1_I \ 3.2_I \ 1.3_R \\ (3.2_{I,A}, 1.3_{I,A} \mid 2.1_{A,R}, 3.3_{A,R}) & \quad \times \quad (3.3_{R,A}, 1.2_{R,A} \mid 3.1_{A,I}, 2.3_{A,I}) \end{aligned}$$

$$\begin{aligned} 3.2_I \ 2.1_A \ 1.1_R & \quad \times \quad 1.1_R \ 1.2_R \ 2.3_A \\ (3.2_{I,A}, 2.1_{I,A} \mid 2.1_{A,R}, 1.1_{A,R}) & \quad \times \quad (1.1_{R,A}, 1.2_{R,A} \mid 1.2_{A,I}, 2.3_{A,I}) \end{aligned}$$

$$\begin{aligned}
& 3.2_I \ 2.1_A \ 1.2_R \quad \times \quad 2.1_A \ 1.2_R \ 2.3_A \\
& (3.2_{I,A}, 2.1_{I,A} \mid 2.1_{A,R}, 1.2_{A,R}) \times (2.1_{R,A}, 1.2_{R,A} \mid 1.2_{A,I}, 2.3_{A,I}) \\
& 3.2_I \ 2.1_A \ 1.3_R \quad \times \quad 3.1_I \ 1.2_R \ 2.3_A \\
& (3.2_{I,A}, 2.1_{I,A} \mid 2.1_{A,R}, 1.3_{A,R}) \times (3.1_{R,A}, 1.2_{R,A} \mid 1.2_{A,I}, 2.3_{A,I}) \\
& 3.2_I \ 2.2_A \ 1.1_R \quad \times \quad 1.1_R \ 2.2_A \ 2.3_A \\
& (3.2_{I,A}, 2.2_{I,A} \mid 2.1_{A,R}, 2.1_{A,R}) \times (1.2_{R,A}, 1.2_{R,A} \mid 2.2_{A,I}, 2.3_{A,I}) \\
& 3.2_I \ 2.2_A \ 1.2_R \quad \times \quad 2.1_A \ 2.2_A \ 2.3_A \\
& (3.2_{I,A}, 2.2_{I,A} \mid 2.1_{A,R}, 2.2_{A,R}) \times (2.2_{R,A}, 1.2_{R,A} \mid 2.2_{A,I}, 2.3_{A,I}) \\
& 3.2_I \ 2.2_A \ 1.3_R \quad \times \quad 3.1_I \ 2.2_A \ 2.3_A \\
& (3.2_{I,A}, 2.2_{I,A} \mid 2.1_{A,R}, 2.3_{A,R}) \times (3.2_{R,A}, 1.2_{R,A} \mid 2.2_{A,I}, 2.3_{A,I}) \\
& 3.2_I \ 2.3_A \ 1.1_R \quad \times \quad 1.1_R \ 3.2_I \ 2.3_A \\
& (3.2_{I,A}, 2.3_{I,A} \mid 2.1_{A,R}, 3.1_{A,R}) \times (1.3_{R,A}, 1.2_{R,A} \mid 3.2_{A,I}, 2.3_{A,I}) \\
& 3.2_I \ 2.3_A \ 1.2_R \quad \times \quad 2.1_A \ 3.2_I \ 2.3_A \\
& (3.2_{I,A}, 2.3_{I,A} \mid 2.1_{A,R}, 3.2_{A,R}) \times (2.3_{R,A}, 1.2_{R,A} \mid 3.2_{A,I}, 2.3_{A,I}) \\
& 3.2_I \ 2.3_A \ 1.3_R \quad \times \quad 3.1_I \ 3.2_I \ 2.3_A \\
& (3.2_{I,A}, 2.3_{I,A} \mid 2.1_{A,R}, 3.3_{A,R}) \times (3.3_{R,A}, 1.2_{R,A} \mid 3.2_{A,I}, 2.3_{A,I})
\end{aligned}$$

$$\begin{aligned}
& 3.3_I \ 2.1_A \ 1.1_R \quad \times \quad 1.1_R \ 1.2_R \ 3.3_I \\
& (3.2_{I,A}, 3.1_{I,A} \mid 2.1_{A,R}, 1.1_{A,R}) \times (1.1_{R,A}, 1.2_{R,A} \mid 1.3_{A,I}, 2.3_{A,I}) \\
& 3.3_I \ 2.1_A \ 1.2_R \quad \times \quad 2.1_A \ 1.2_R \ 3.3_I \\
& (3.2_{I,A}, 3.1_{I,A} \mid 2.1_{A,R}, 1.2_{A,R}) \times (2.1_{R,A}, 1.2_{R,A} \mid 1.3_{A,I}, 2.3_{A,I}) \\
& 3.3_I \ 2.1_A \ 1.3_R \quad \times \quad 3.1_I \ 1.2_R \ 3.3_I \\
& (3.2_{I,A}, 3.1_{I,A} \mid 2.1_{A,R}, 1.3_{A,R}) \times (3.1_{R,A}, 1.2_{R,A} \mid 1.3_{A,I}, 2.3_{A,I}) \\
& 3.3_I \ 2.2_A \ 1.1_R \quad \times \quad 1.1_R \ 2.2_A \ 3.3_I \\
& (3.2_{I,A}, 3.2_{I,A} \mid 2.1_{A,R}, 2.1_{A,R}) \times (1.2_{R,A}, 1.2_{R,A} \mid 2.3_{A,I}, 2.3_{A,I}) \\
& 3.3_I \ 2.2_A \ 1.2_R \quad \times \quad 2.1_A \ 2.2_A \ 3.3_I \\
& (3.2_{I,A}, 3.2_{I,A} \mid 2.1_{A,R}, 2.2_{A,R}) \times (2.2_{R,A}, 1.2_{R,A} \mid 2.3_{A,I}, 2.3_{A,I})
\end{aligned}$$

$$\begin{aligned}
& 3.3_I \ 2.2_A \ 1.3_R \quad \times \quad 3.1_I \ 2.2_A \ 3.3_I \\
& (3.2_{I,A}, 3.2_{I,A} \mid 2.1_{A,R}, 2.3_{A,R}) \times (3.2_{R,A}, 1.2_{R,A} \mid 2.3_{A,I}, 2.3_{A,I}) \\
& 3.3_I \ 2.3_A \ 1.1_R \quad \times \quad 1.1_R \ 3.2_I \ 3.3_I \\
& (3.2_{I,A}, 3.3_{I,A} \mid 2.1_{A,R}, 3.1_{A,R}) \times (1.3_{R,A}, 1.2_{R,A} \mid 3.3_{A,I}, 2.3_{A,I}) \\
& 3.3_I \ 2.3_A \ 1.2_R \quad \times \quad 2.1_A \ 3.2_I \ 3.3_I \\
& (3.2_{I,A}, 3.3_{I,A} \mid 2.1_{A,R}, 3.2_{A,R}) \times (2.3_{R,A}, 1.2_{R,A} \mid 3.3_{A,I}, 2.3_{A,I}) \\
& 3.3_I \ 2.3_A \ 1.3_R \quad \times \quad 3.1_I \ 3.2_I \ 3.3_I \\
& (3.2_{I,A}, 3.3_{I,A} \mid 2.1_{A,R}, 3.3_{A,R}) \times (3.3_{R,A}, 1.2_{R,A} \mid 3.3_{A,I}, 2.3_{A,I})
\end{aligned}$$

Literatur

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