

Constraint-based Analysis

Solutions to Unification Exercises

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1 Exercises on unifying (= merging) feature structures

1. $\textit{word} \cup \textit{word} =$

2. $\textit{word} \cup \textit{linguistic-object} =$

3. $\textit{word} \cup \textit{phrase} =$

4. $\textit{phrase} \cup \textit{sign} =$

5. $\textit{word} \cup \begin{bmatrix} \textit{word} \\ \text{SYN } \textit{cat} \end{bmatrix} =$

6. $\textit{word} \cup \begin{bmatrix} \textit{word} \\ \text{SYN } \begin{bmatrix} \textit{cat} \\ \text{POS } \textit{v} \end{bmatrix} \end{bmatrix} =$

7. $\begin{bmatrix} \textit{word} \\ \text{SYN } \begin{bmatrix} \textit{cat} \\ \text{POS } \textit{v} \end{bmatrix} \end{bmatrix} \cup \begin{bmatrix} \textit{word} \\ \text{SYN } \begin{bmatrix} \textit{cat} \\ \text{POS } \textit{v} \end{bmatrix} \end{bmatrix} =$

8. $\begin{bmatrix} \textit{word} \\ \text{SYN } \begin{bmatrix} \textit{cat} \\ \text{POS } \textit{v} \end{bmatrix} \end{bmatrix} \cup \begin{bmatrix} \textit{word} \\ \text{SYN } \begin{bmatrix} \textit{cat} \\ \text{POS } \textit{pos} \end{bmatrix} \end{bmatrix} =$

9. $\begin{bmatrix} \textit{word} \\ \text{SYN } \begin{bmatrix} \textit{cat} \\ \text{POS } \textit{v} \end{bmatrix} \end{bmatrix} \cup \begin{bmatrix} \textit{word} \\ \text{SYN } \begin{bmatrix} \textit{cat} \\ \text{POS } \textit{a} \end{bmatrix} \end{bmatrix} =$

$$10. \left[\begin{array}{c} \textit{word} \\ \text{SYN} \left[\begin{array}{c} \textit{cat} \\ \text{POS} \textit{v} \end{array} \right] \end{array} \right] \cup \left[\begin{array}{c} \textit{word} \\ \text{SYN} \left[\begin{array}{c} \textit{cat} \\ \text{POS} \left[\begin{array}{c} \textit{v} \\ \text{AGR} \textit{3s} \end{array} \right] \end{array} \right] \end{array} \right] =$$

$$11. \left[\begin{array}{c} \textit{word} \\ \text{SYN} \left[\begin{array}{c} \textit{cat} \\ \text{POS} \left[\begin{array}{c} \textit{v} \\ \text{VFORM} \textit{fin} \end{array} \right] \end{array} \right] \end{array} \right] \cup \left[\begin{array}{c} \textit{word} \\ \text{SYN} \left[\begin{array}{c} \textit{cat} \\ \text{POS} \left[\begin{array}{c} \textit{v} \\ \text{AGR} \textit{3s} \end{array} \right] \end{array} \right] \end{array} \right] =$$

$$12. \left[\begin{array}{c} \textit{word} \\ \text{SYN} \left[\begin{array}{c} \textit{cat} \\ \text{POS} \left[\begin{array}{c} \textit{v} \\ \text{VFORM} \textit{fin} \end{array} \right] \end{array} \right] \end{array} \right] \cup \left[\begin{array}{c} \textit{word} \\ \text{SYN} \left[\begin{array}{c} \textit{cat} \\ \text{POS} \left[\begin{array}{c} \textit{v} \\ \text{VFORM} \textit{presp} \end{array} \right] \end{array} \right] \end{array} \right] =$$

$$13. \left[\begin{array}{c} \textit{word} \\ \text{SYN} \left[\begin{array}{c} \textit{cat} \\ \text{POS} \left[\begin{array}{c} \textit{n} \\ \text{CASE} \textit{acc} \end{array} \right] \end{array} \right] \end{array} \right] \cup \left[\begin{array}{c} \textit{word} \\ \text{SYN} \left[\begin{array}{c} \textit{cat} \\ \text{POS} \left[\begin{array}{c} \textit{v} \\ \text{VFORM} \textit{presp} \end{array} \right] \end{array} \right] \end{array} \right] =$$

$$14. \left[\begin{array}{c} \textit{word} \\ \text{SYN} \left[\begin{array}{c} \textit{cat} \\ \text{POS} \left[\begin{array}{c} \textit{n} \\ \text{CASE} \textit{acc} \end{array} \right] \end{array} \right] \end{array} \right] \cup \left[\begin{array}{c} \textit{word} \\ \text{SYN} \left[\begin{array}{c} \textit{cat} \\ \text{POS} \left[\begin{array}{c} \textit{n} \\ \text{AGR} \textit{fst-sg} \end{array} \right] \end{array} \right] \end{array} \right] =$$

$$15. \left[\begin{array}{cc} word & \\ \text{SYN} & cat \end{array} \right] \cup \left[\begin{array}{cc} word & \\ \text{SYN} & \left[\begin{array}{cc} cat & \\ \text{POS} & \left[\begin{array}{cc} n & \\ \text{AGR} & fst-sg \\ \text{CASE} & nom \end{array} \end{array} \right] \end{array} \right] \right] =$$

$$16. \left[\begin{array}{c} \text{word} \\ \text{SYN } \text{cat} \end{array} \right] \cup \left[\begin{array}{c} \text{word} \\ \text{SYN } \left[\begin{array}{c} \text{cat} \\ \text{POS } \left[\begin{array}{c} n \\ \text{AGR } \text{thd-sg} \\ \text{CASE } \text{nom} \end{array} \right] \end{array} \right] \end{array} \right] =$$

$$17. \text{non-thd-sg} \cup \text{fst-sg} =$$

$$18. \text{non-thd-sg} \cup \text{agr} =$$

$$19. \text{non-thd-sg} \cup \text{agr} \cup \text{fst-pl} =$$

$$20. \text{non-thd-sg} \cup \text{thd-sg} =$$

$$21. \left[\begin{array}{c} \text{word} \\ \text{SYN } \left[\begin{array}{c} \text{cat} \\ \text{POS } v \\ \text{COMPS } \langle \text{NP} \rangle \end{array} \right] \end{array} \right] \cup \left[\begin{array}{c} \text{word} \\ \text{SYN } \left[\begin{array}{c} \text{cat} \\ \text{POS } \left[\begin{array}{c} v \\ \text{AGR } 3s \end{array} \right] \end{array} \right] \end{array} \right] =$$

$$22. \left[\begin{array}{c} \text{word} \\ \text{SYN } \left[\begin{array}{c} \text{cat} \\ \text{POS } v \\ \text{COMPS } \langle \text{NP}, \text{NP} \rangle \end{array} \right] \end{array} \right] \cup \left[\begin{array}{c} \text{word} \\ \text{SYN } \left[\begin{array}{c} \text{cat} \\ \text{POS } \left[\begin{array}{c} v \\ \text{AGR } \text{thd-sg} \end{array} \right] \\ \text{COMPS } \text{list} \end{array} \right] \end{array} \right] =$$

$$23. \left[\begin{array}{c} \text{word} \\ \text{SYN } \left[\begin{array}{c} \text{cat} \\ \text{POS } v \\ \text{COMPS } \langle \text{NP}, \text{s} \rangle \end{array} \right] \end{array} \right] \cup \left[\begin{array}{c} \text{word} \\ \text{SYN } \left[\begin{array}{c} \text{cat} \\ \text{POS } \left[\begin{array}{c} v \\ \text{AGR } \text{fst-pl} \end{array} \right] \\ \text{COMPS } \langle \text{NP}, [] \rangle \end{array} \right] \end{array} \right] =$$

$$24. \left[\begin{array}{c} \text{word} \\ \text{SYN } \left[\begin{array}{c} \text{cat} \\ \text{POS } v \\ \text{COMPS } \langle \text{NP}, \text{s} \rangle \end{array} \right] \end{array} \right] \cup \left[\begin{array}{c} \text{word} \\ \text{SYN } \left[\begin{array}{c} \text{cat} \\ \text{POS } \left[\begin{array}{c} v \\ \text{AGR } \text{thd-sg} \end{array} \right] \\ \text{COMPS } \langle \text{NP} \rangle \end{array} \right] \end{array} \right] =$$

$$25. \left[\begin{array}{c} \textit{word} \\ \text{SYN} \left[\begin{array}{c} \textit{cat} \\ \text{POS} \\ \text{COMPS} \left[\begin{array}{c} \textit{v} \\ \langle \text{NP} \rangle \end{array} \end{array} \right] \end{array} \right] \end{array} \right] \cup \left[\begin{array}{c} \textit{word} \\ \text{SYN} \left[\begin{array}{c} \textit{cat} \\ \text{POS} \left[\begin{array}{c} \textit{v} \\ \text{AGR} \textit{thd-pl} \end{array} \right] \\ \text{COMPS} \left[\begin{array}{c} \langle \text{NP} \rangle \end{array} \right] \end{array} \right] \end{array} \right] \end{array} \right] =$$