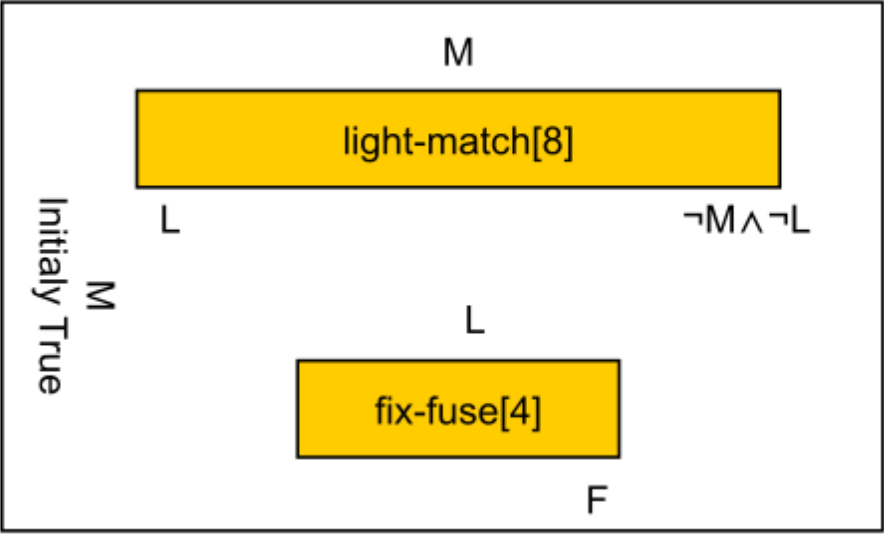
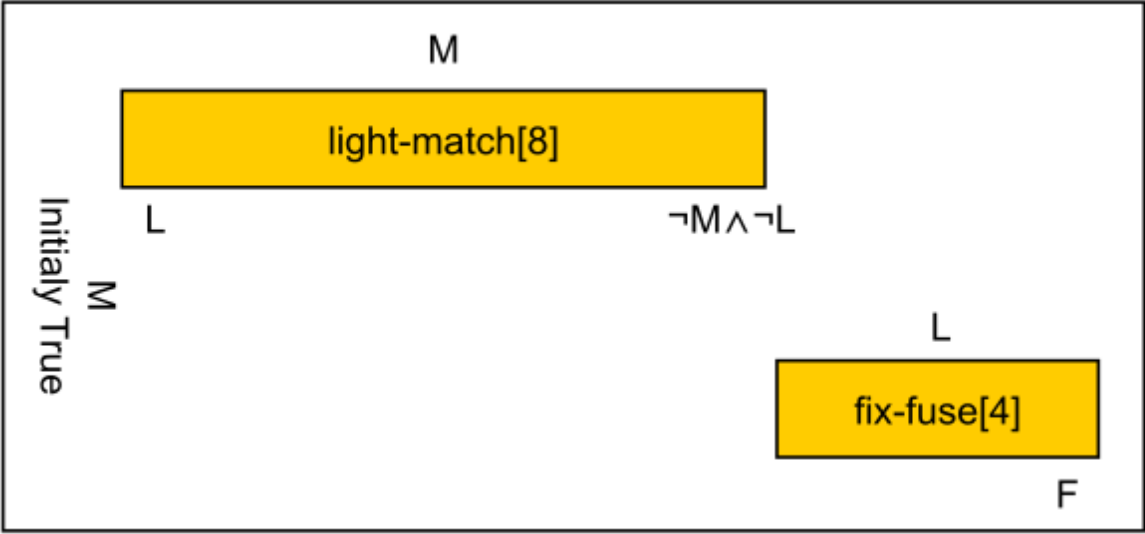


TLP-GP

Solving Temporally-Expressive
Planning Problems



TLP-GP

- Solves temporally-expressive planning problems
- Planning graph built until goal obtained
 - atemporal
- Solution extraction from planning graph
 - backwards
 - places temporal constraints between actions

Example

- $\Pi = \langle O, I, G \rangle$
 - $I = \{ \}$
 - $G = \{b, d, e\}$
 - $O = \{(A, \{ \}, \{a_{[0]}, \neg a_{[5]}, b_{[5]}, \neg d_{[5]} \}, 5) ;$
 $(B, \{a_{[0]} \}, \{c_{[0]}, d_{[4]}, \neg c_{[4]} \}, 4) ;$
 $(C, \{c_{[0]} \}, \{\neg b_{[1]}, e_{[1]} \}, 1)\}$
- $(\langle \text{name} \rangle, \langle \text{pre} \rangle, \langle \text{eff} \rangle, \langle \text{dur} \rangle)$

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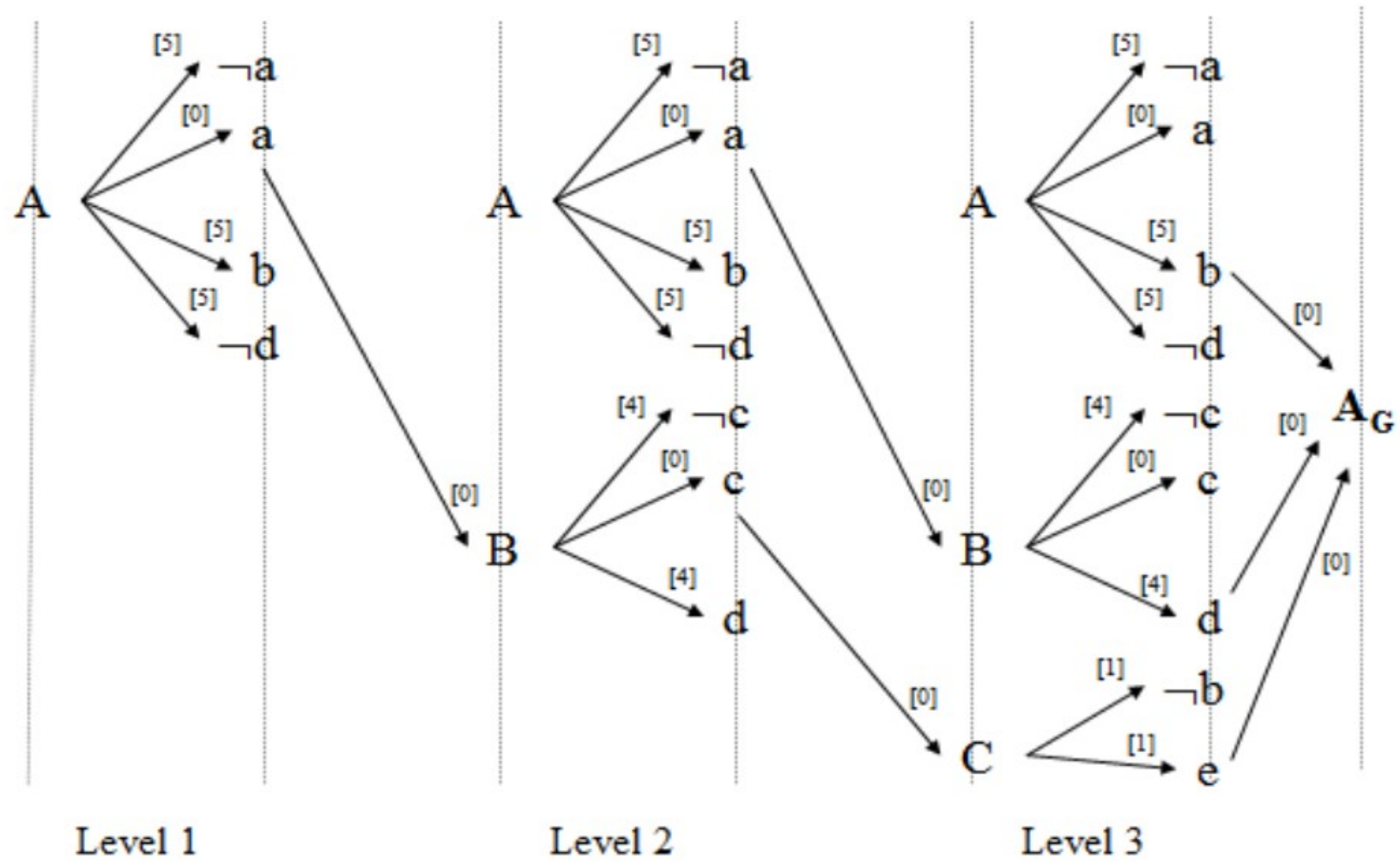
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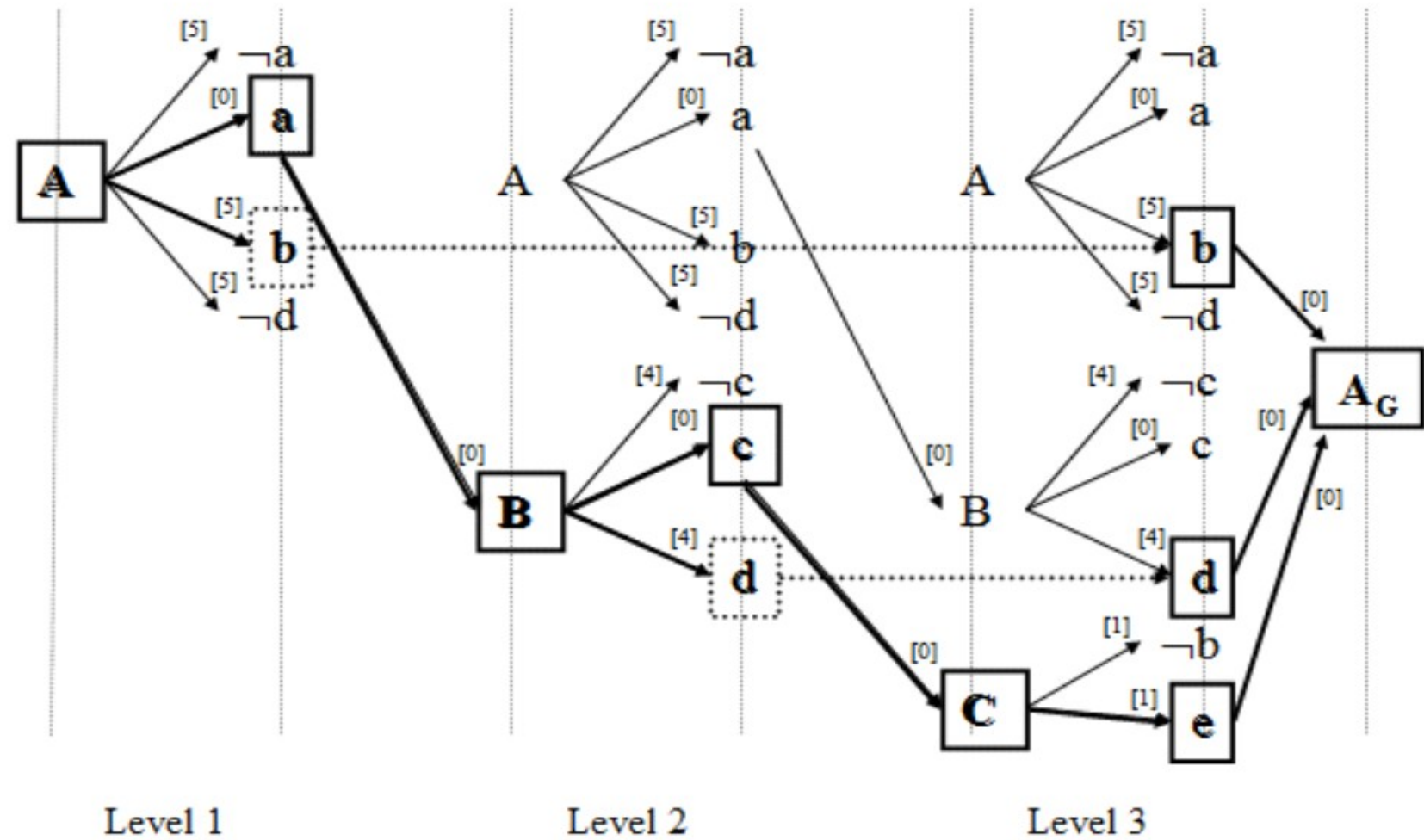
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Example



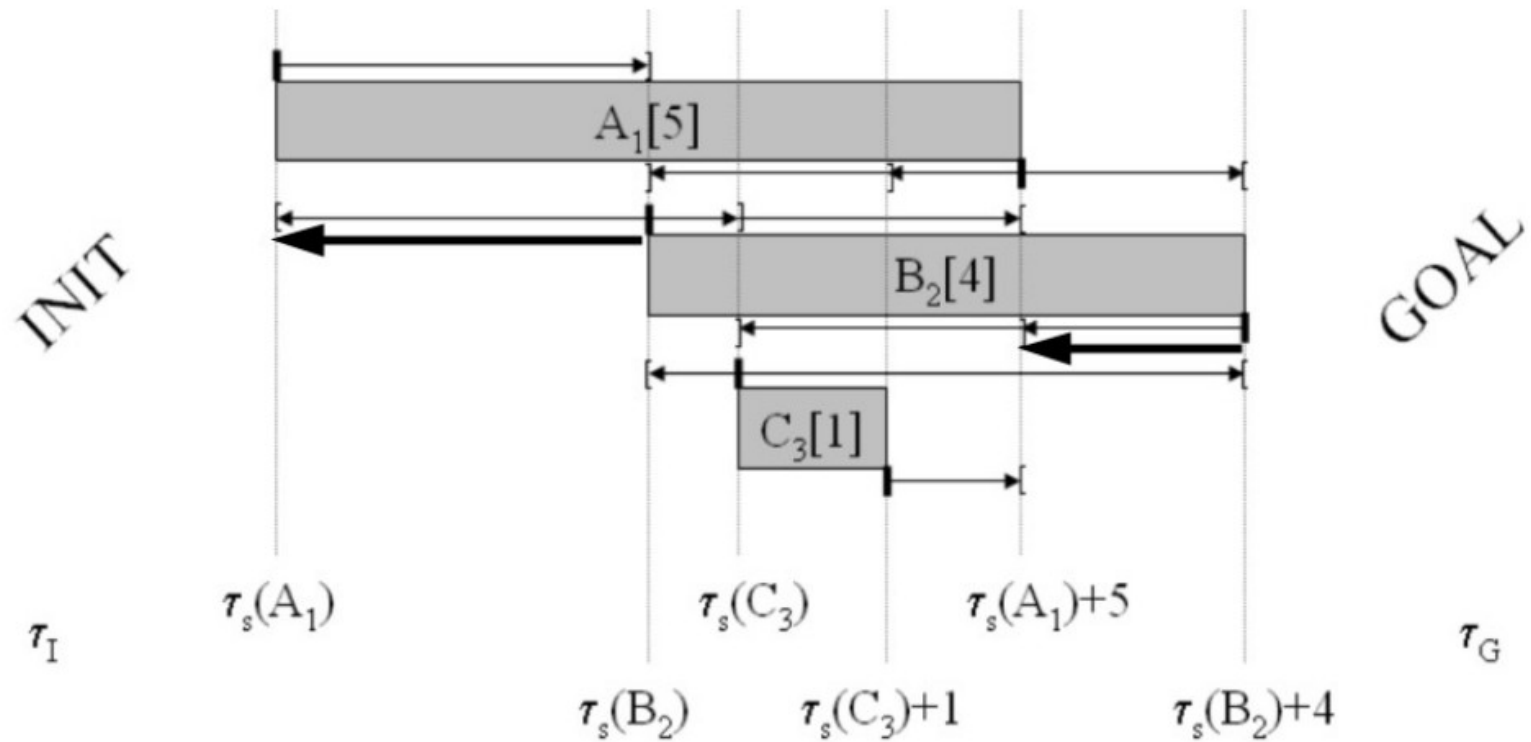
Example



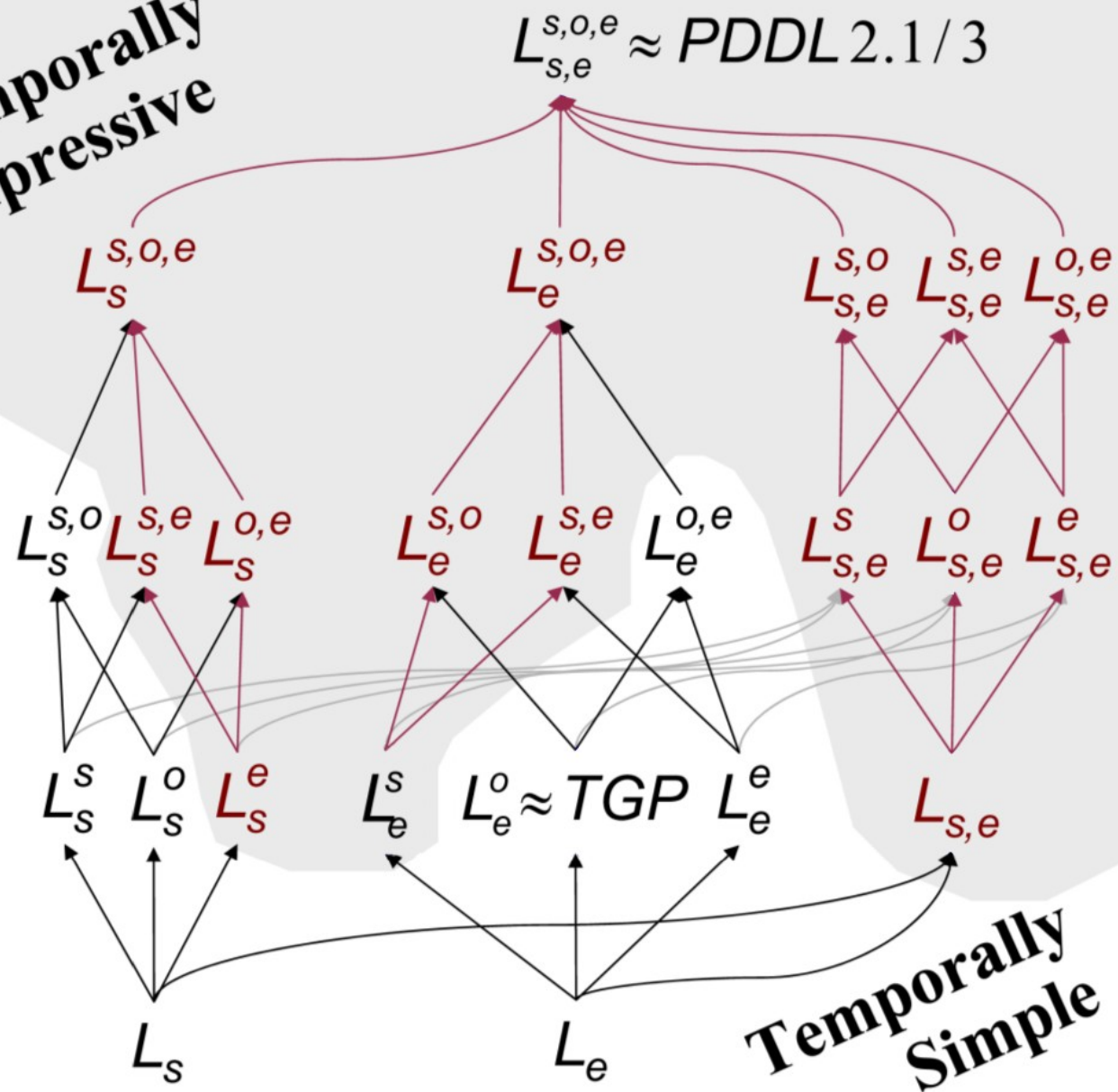
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Example



**Temporally
Expressive**

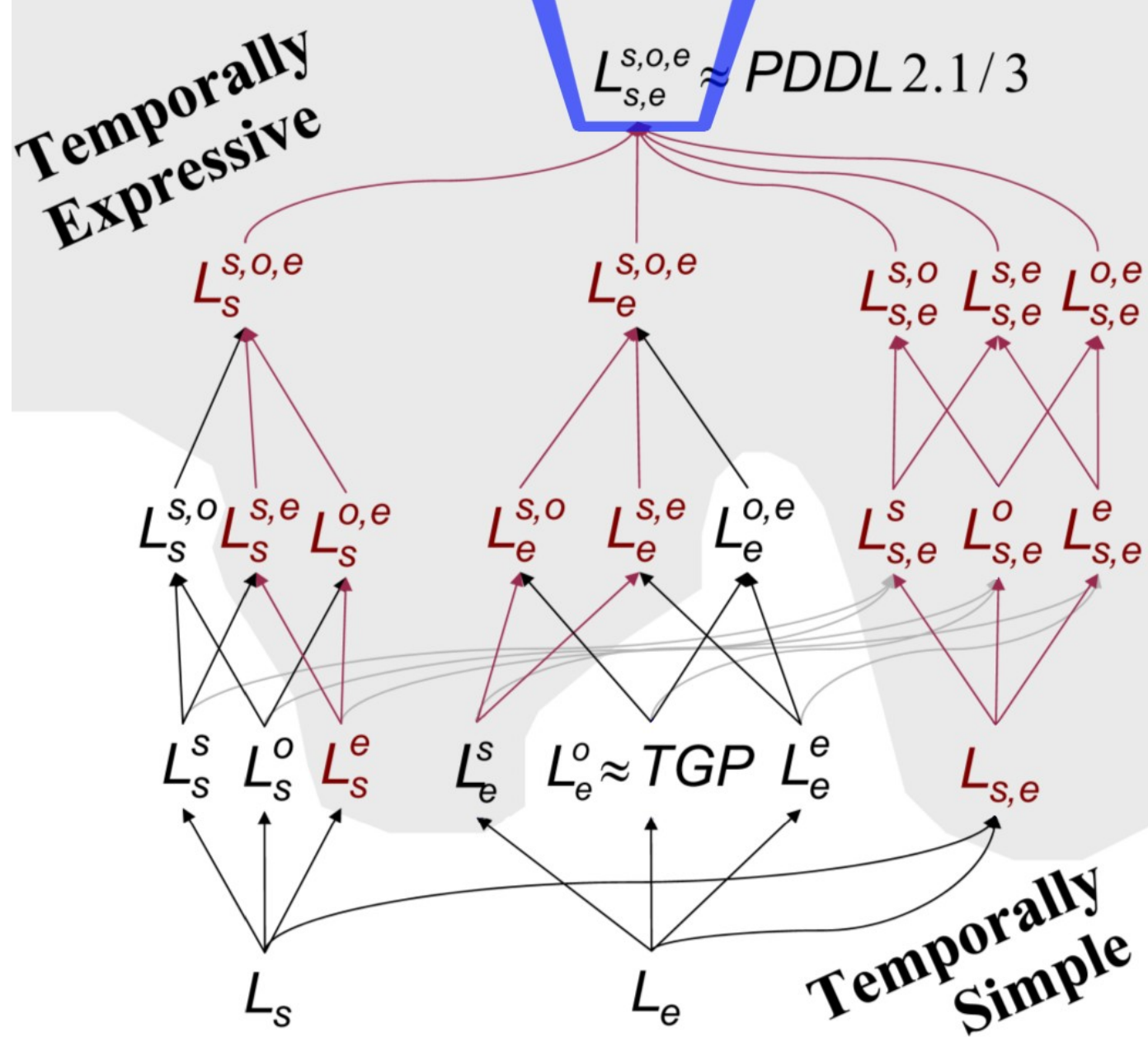


L preconditions
effects

s “at-start”

e “at-end”

o : “over-all” (over the entire duration)



$L_{\text{preconditions}}$
 L_{effects}

s “at-start”

e “at-end”

o : “over-all” (over the entire duration)