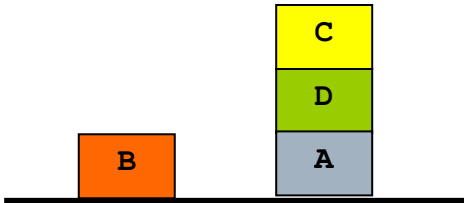
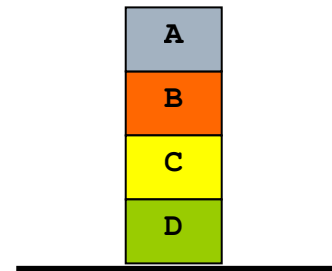


# Blocks World Domain Example for POP

Start State



Goal State



**Actions Available:**

Op (Action :Move (b, x, y)

Precond :On (b, x)  $\wedge$  clear (y)  $\wedge$  clear (b)

Effect :On (b, y)  $\wedge$  clear (x)  $\wedge$   
 $\neg$  clear (y)  $\wedge$   $\neg$  on (b, x) )

Op (Action :Movetotable (b, x)

Precond :On (b, x)  $\wedge$  clear (b)

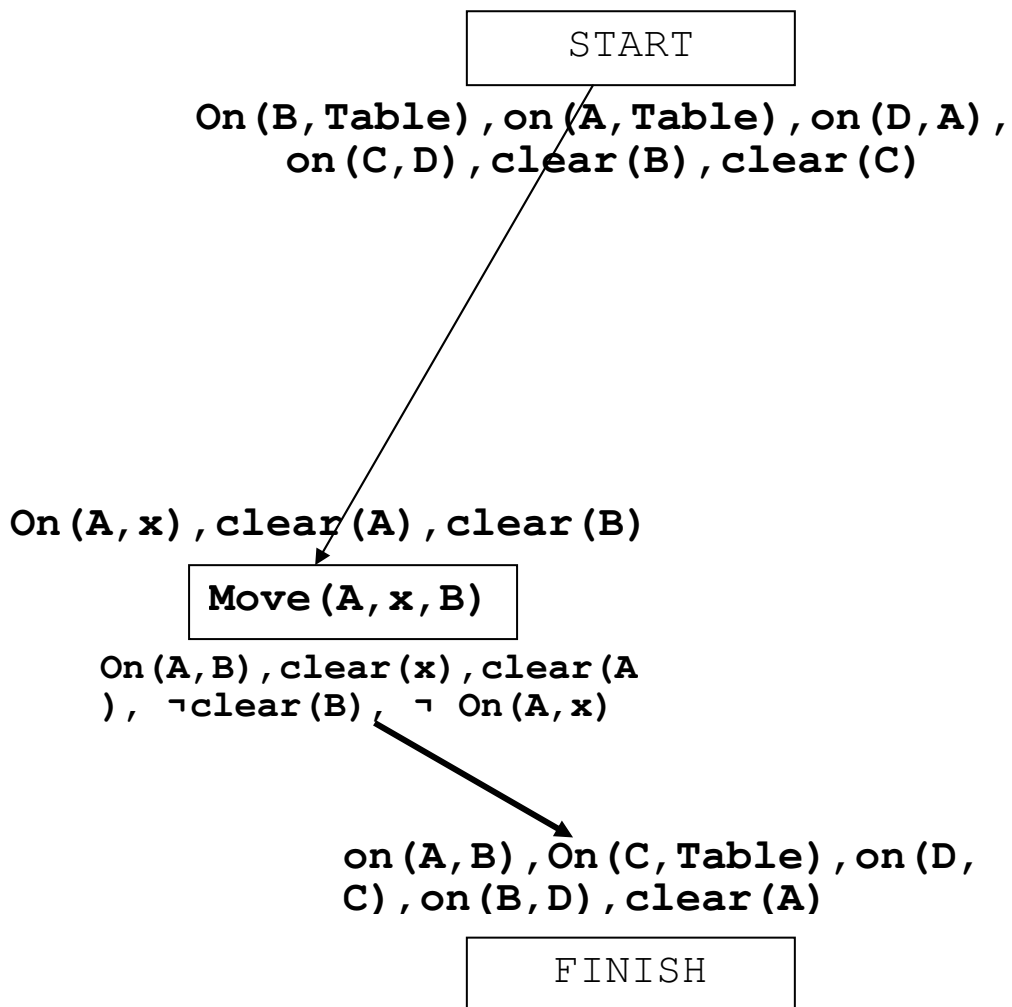
Effect :On (b, Table)  $\wedge$  clear (x)  $\wedge$   
 $\neg$  on (b, x) )

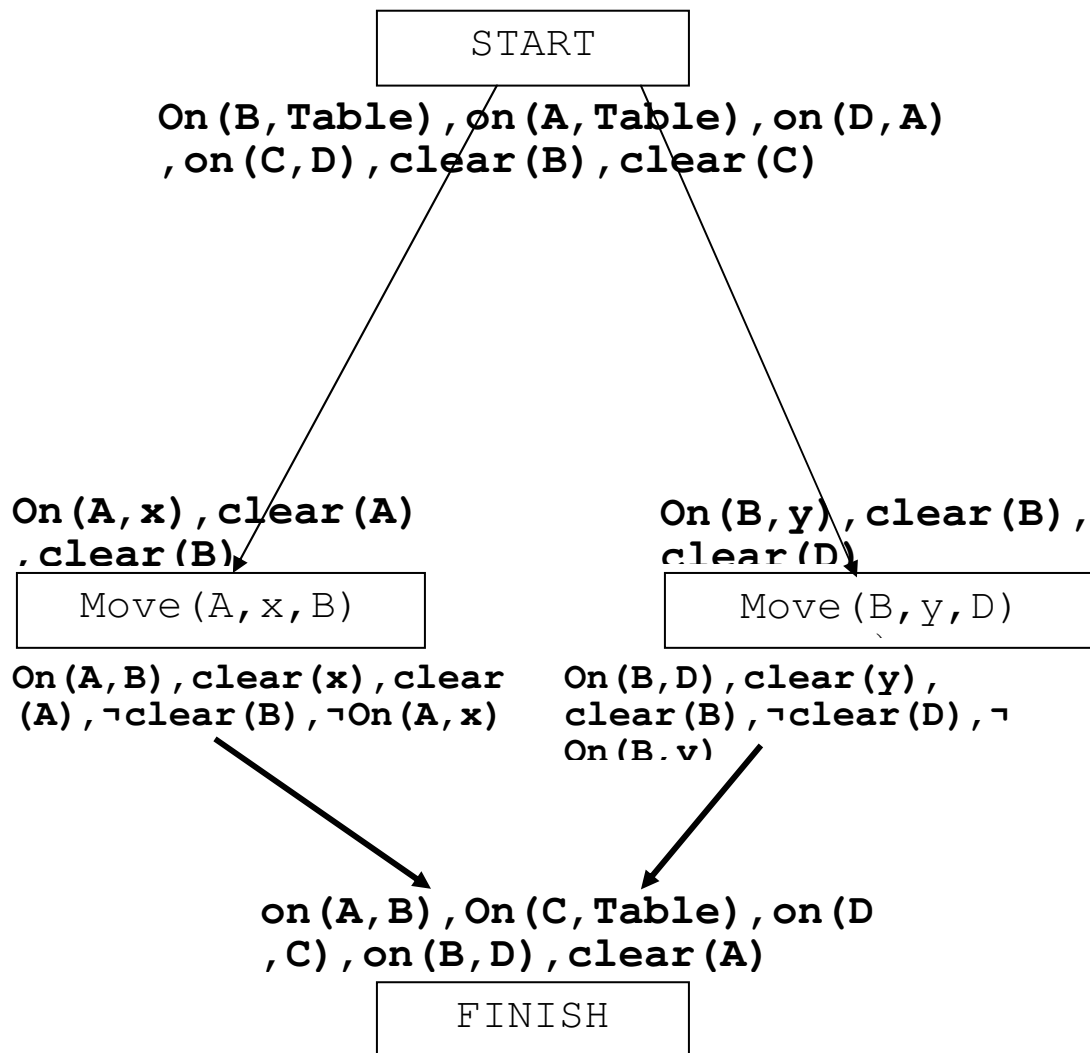
**START**

**On (B, Table) , On (A, Table) , On (D, A) , On (C, D)  
 , clear (B) , clear (C)**

**On (C, Table) , On (D, C) , On (B, D) ,  
 On (A, B) , clear (A)**

**FINISH**





In the above steps see that the Following:  
 Operation **Move (A, x, B)** **causes a threat**  
 to the operation **Move (B, y, D)** .

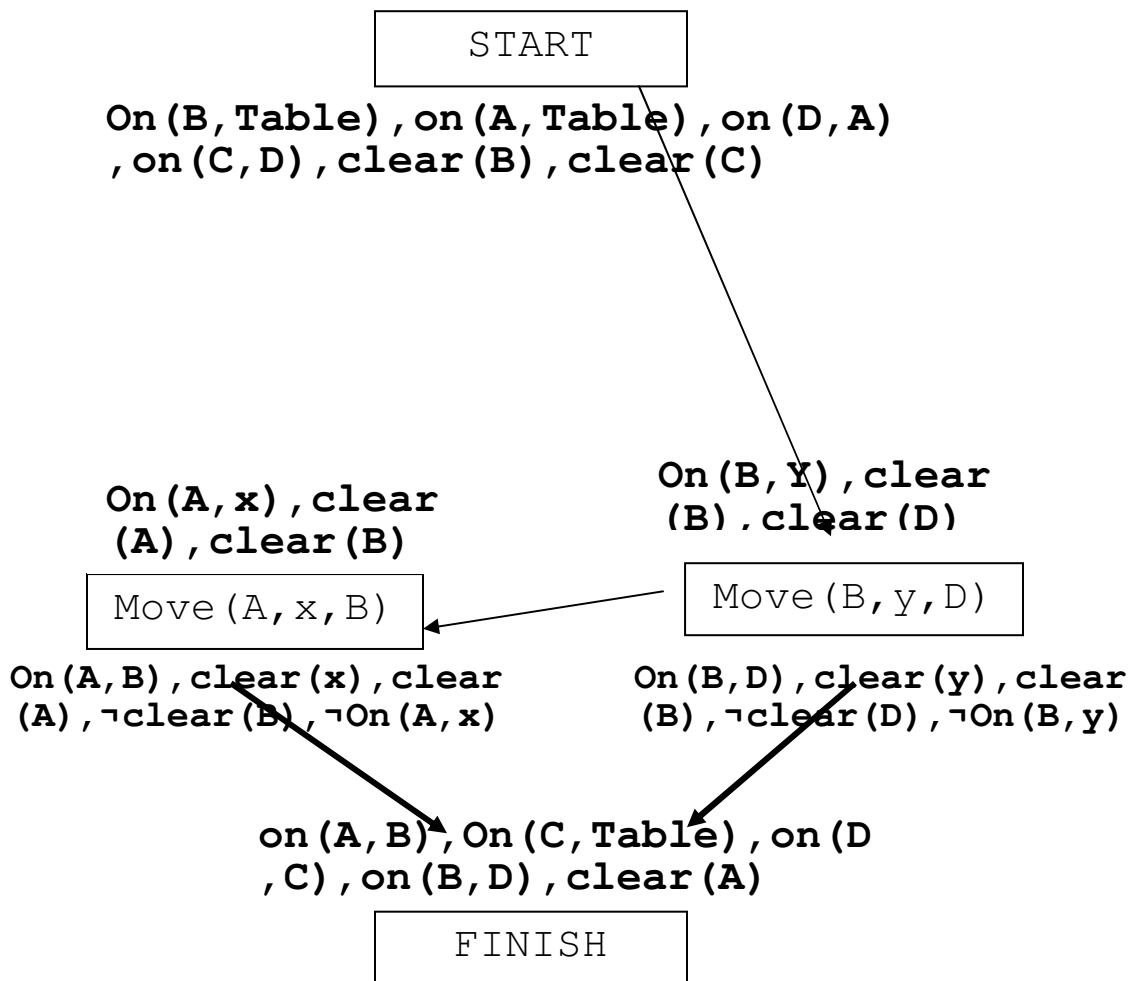
Why?

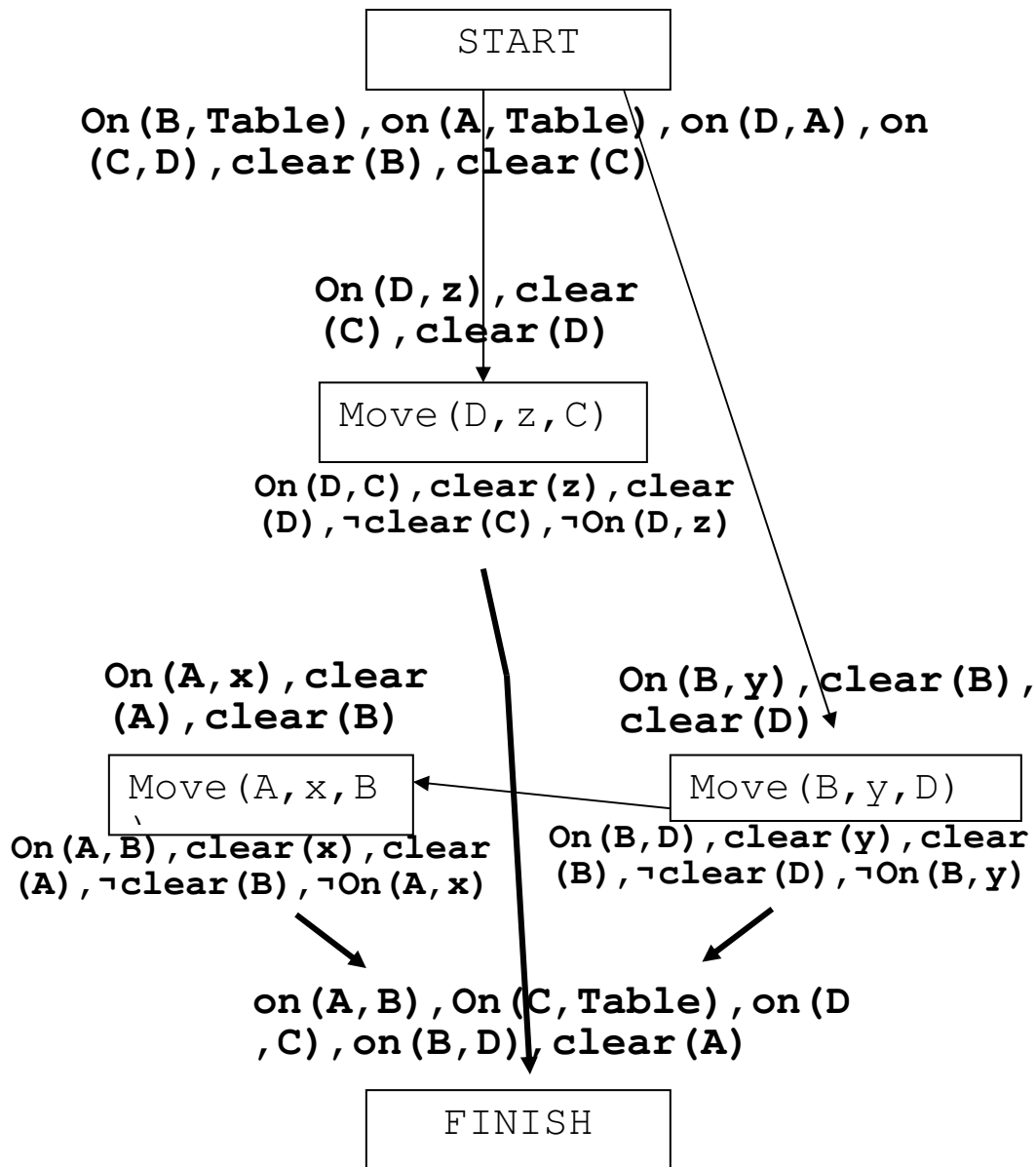
because if the operation Move (B, y, D)  
 happens between the operation

Move(A, x, B) and its effect then the precondition clear (B) of the operation Move(B, y, D) is not satisfied.

What to do?

**Solve the threat** by promoting the operation Move(B, y, D) before the Move(A, x, B) operation...





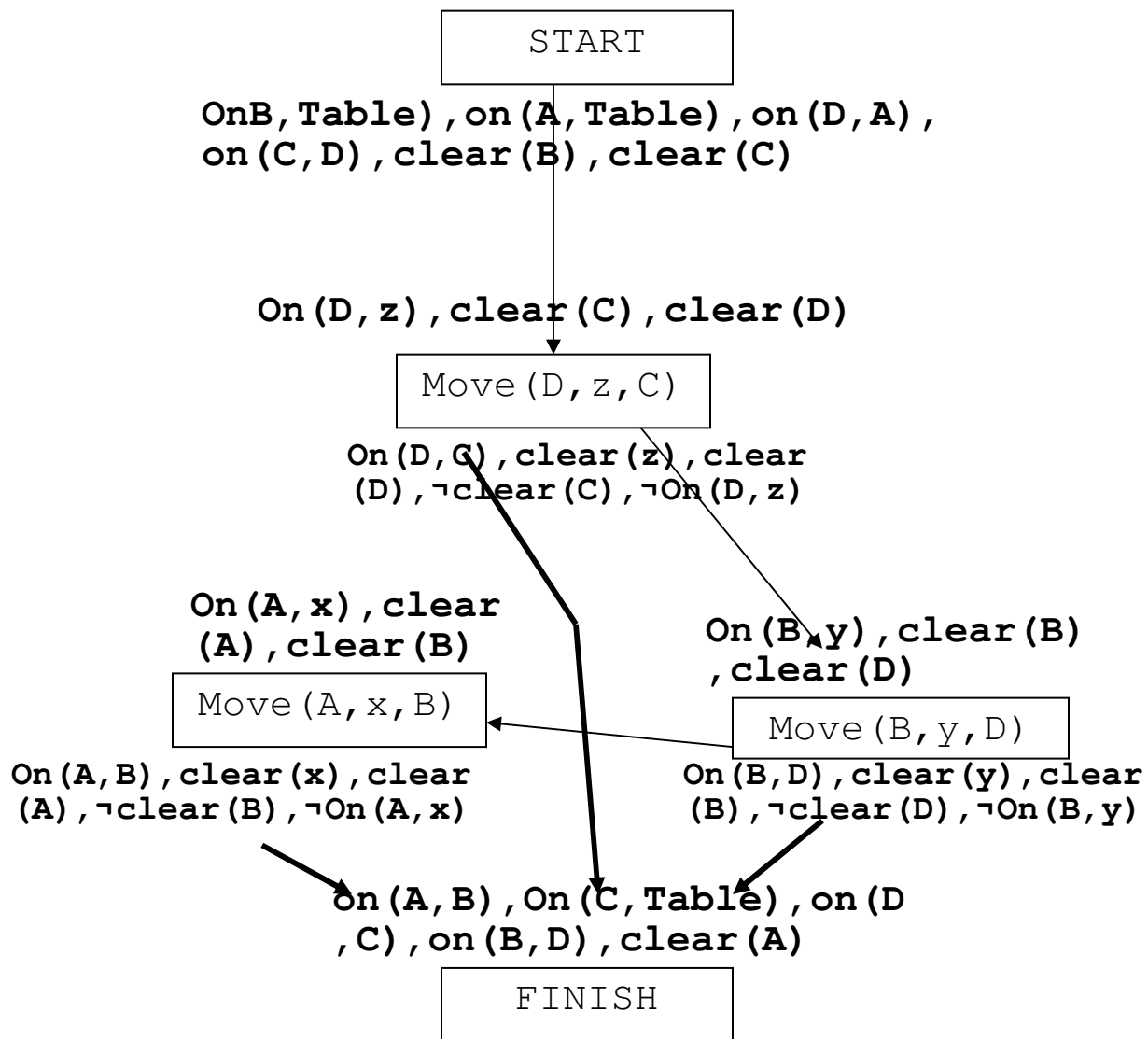
In the above steps we see the following:  
 operation **Move (B, y, D)** **causes a threat** to  
 the operation **Move (D, z, C)**

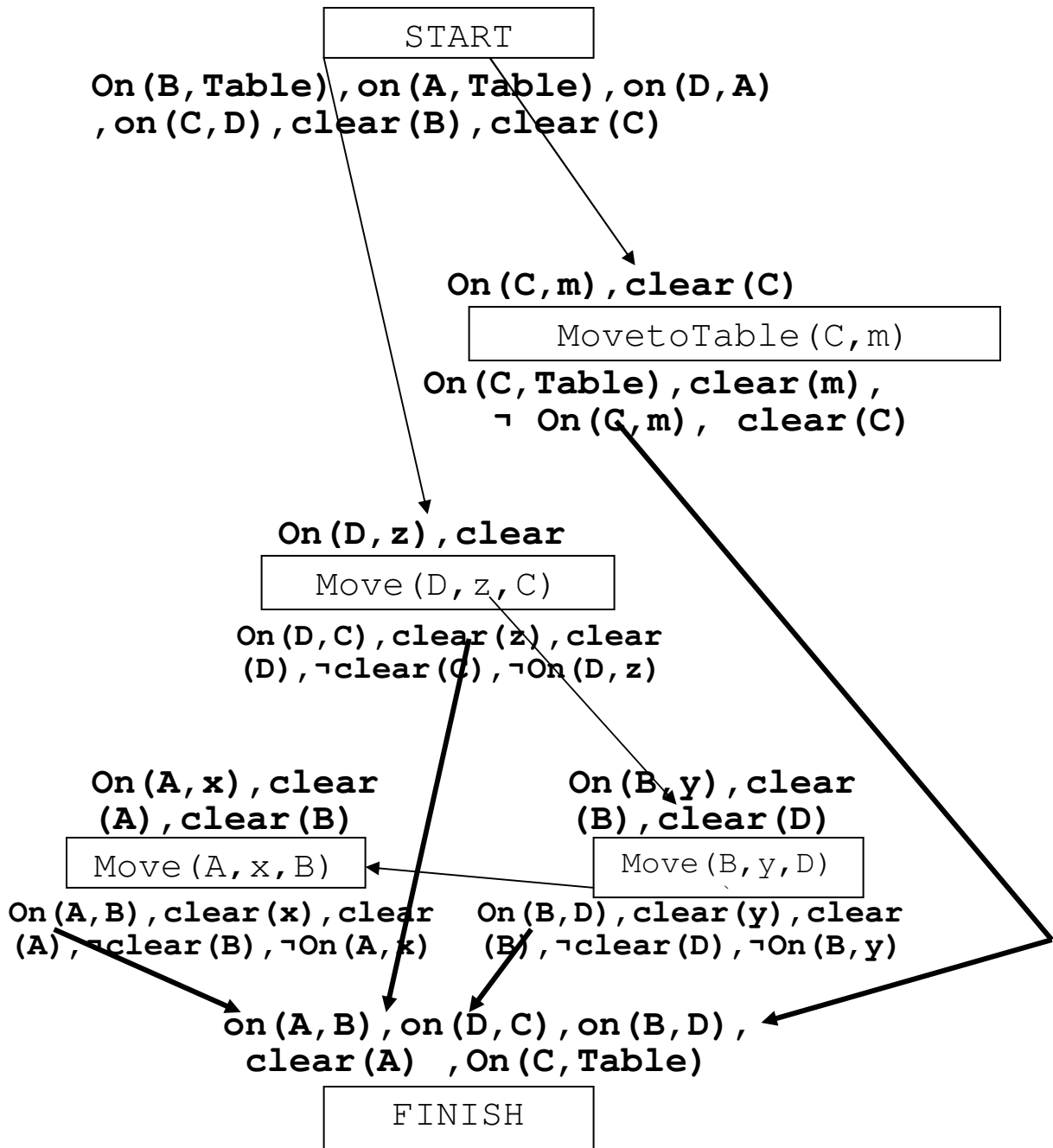
Why?

because if the operation Move (D, z, C)  
 happens between the operation Move (B, y, D)

and its effect, then the precondition  $\text{clear}(D)$  of the operation  $\text{Move}(D, z, C)$  is not satisfied.

**Solve the threat** by promoting the operation  $\text{Move}(D, z, C)$  before the  $\text{Move}(B, y, D)$  operation.



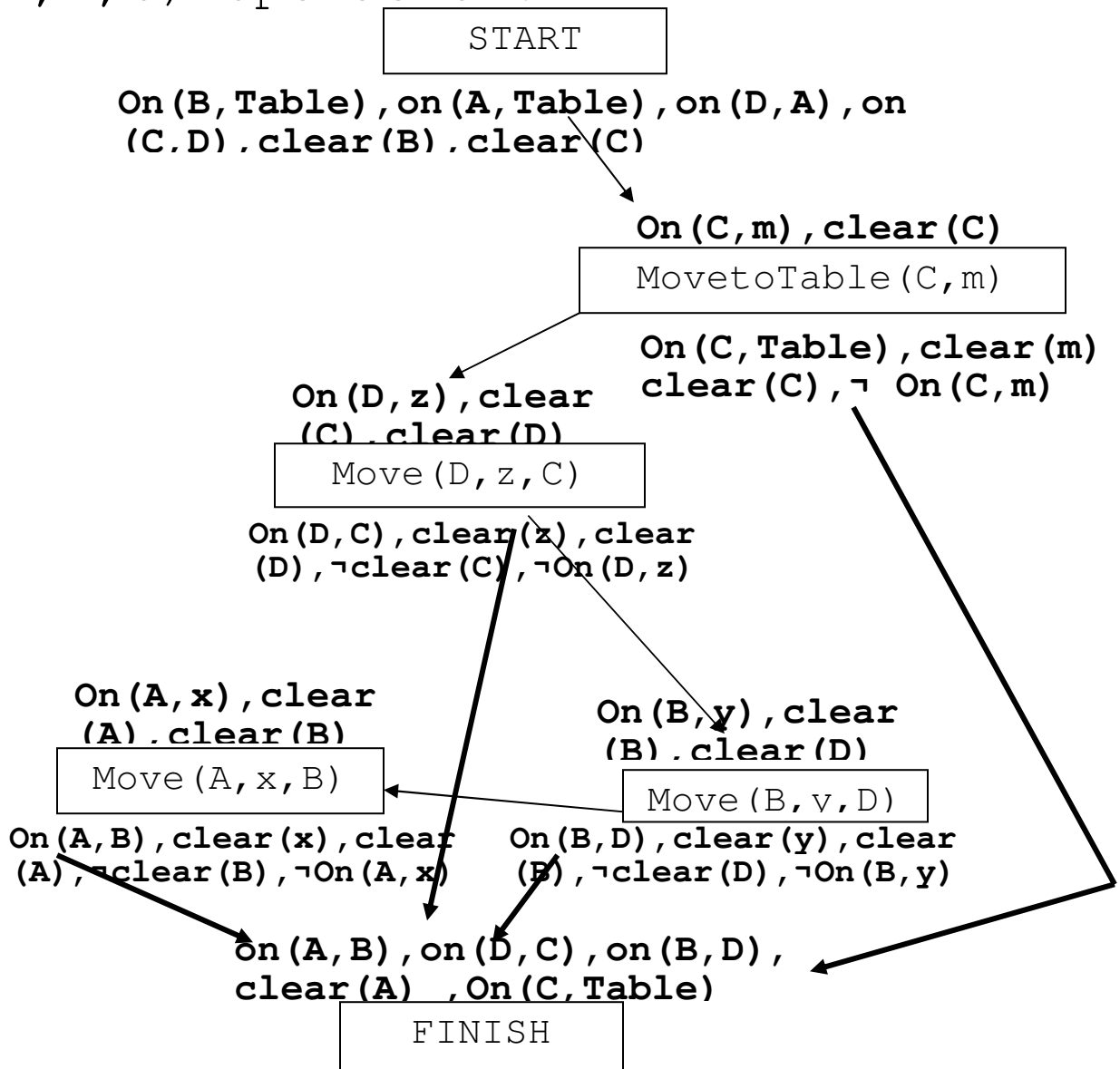


In the above steps we see the following:  
 Operation Move (D, z, C) **causes a threat** to  
 the operation MovetoTable (C, m) .

Why?

because if the operation  $\text{MovetoTable}(C, m)$  happens between the operation  $\text{Move}(D, z, C)$  and its effect, then the precondition  $\text{clear}(C)$  of operation  $\text{MovetoTable}(C, m)$  is not satisfied.

**solve the threat** by promoting the operation  $\text{MovetoTable}(C, m)$  before the  $\text{Move}(D, z, C)$  operation.



Bind the variable m with D and bind z with A and x with Table and y with Table.

