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rules → eo(L,[],L).
eo([],L,L).
eo([H1|T1],[H2|T2],[H1,H2|T]):- eo(T1,T2,T)

call → eo([1,2,3,4,5],[a,b,c],L).

1. eo(L,[],L) fail
eo([],L,L) fail
=> where H1=1, T1=[2,3,4,5]
H2=a, T2=[b,c]
[H1,H2|T]=[1,a|T]

2. eo(L,[],L) fail
eo([],L,L) fail
=> where H1=2, T1=[3,4,5]
H2=b, T2=[c]
[H1,H2|T]=[2,b|T]

3. eo(L,[],L) Fail
eo([],L,L) Fail
=> where H1=3, T=[4,5]
H2=c, T=[]
[H1,H2|T]=[3,c|T]

4. eo(L,[],L) success since the query is
eo([4,5],[],T).

T then unifies with L, so T=[4,5], then bubbles back up the steps...

T=[4,5] => T=[3,c,4,5] => T=[2,b,3,c,4,5]

=> T=[1,a,2,b,3,c,4,5] = L