Outline

1. Introduction: negation
2. Conjunction
3. Complete Truth Tables with conjunction and negation
4. Other connectives
5. More Examples of Complete Truth Tables
6. Semantic Concepts
7. Entailment and Validity
8. Limits of TFL

Syntax and semantics: $\neg(A \wedge B)$

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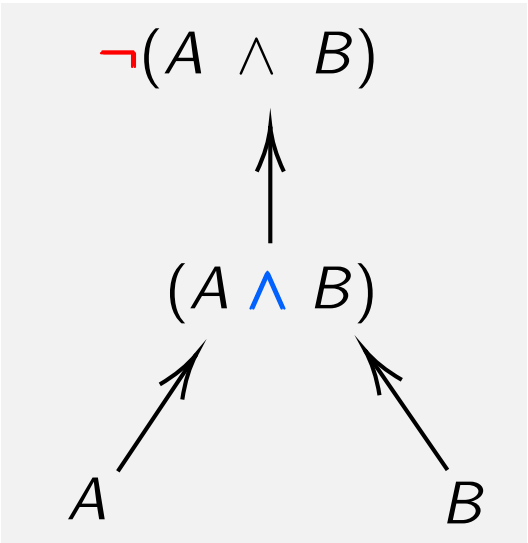
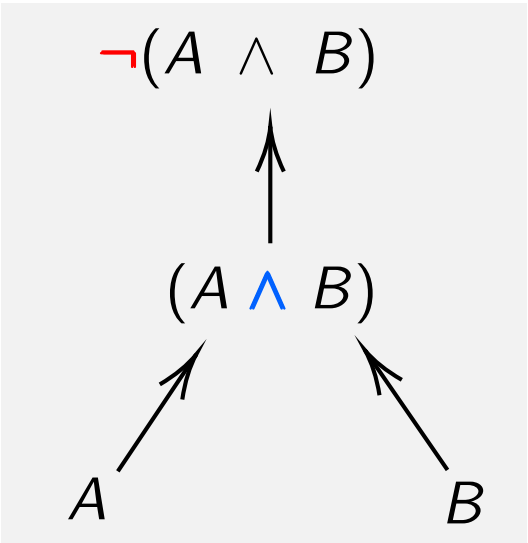
Syntactic formation:



Syntax and semantics: $\neg(A \wedge B)$

Syntactic formation:

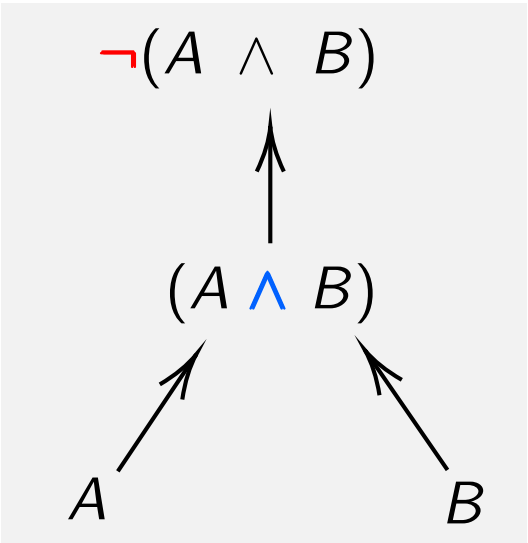


Truth-conditions

A	B	¬ (A ∧ B)
T	T	
T	F	
F	T	
F	F	

Syntax and semantics: $\neg(A \wedge B)$

Syntactic formation:

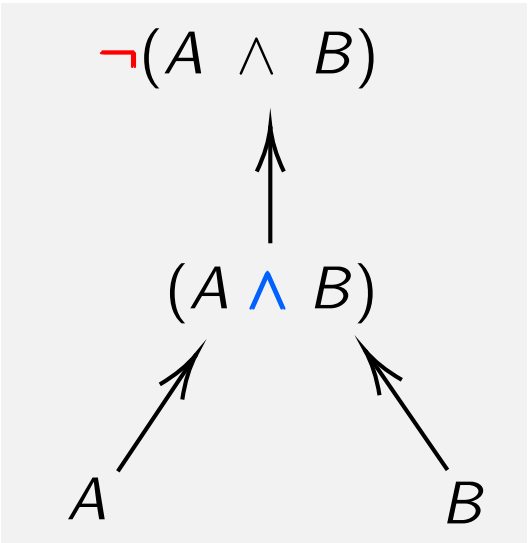


Truth-conditions

A	B	¬	(	A	∧	B	)
T	T			T		T	
T	F			T		F	
F	T			F		T	
F	F			F		F	

Syntax and semantics: $\neg(A \wedge B)$

Syntactic formation:

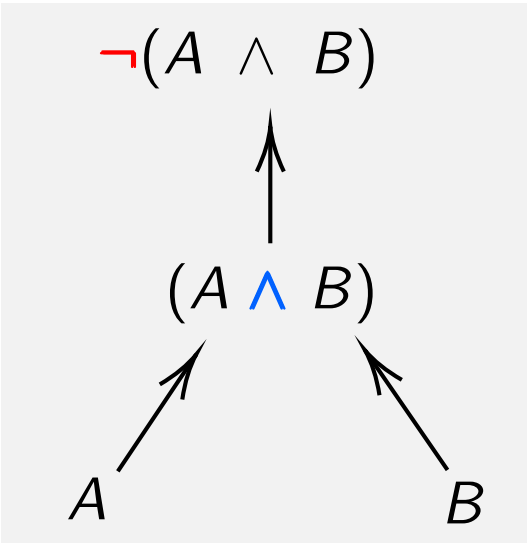


Truth-conditions

A	B	¬	(	A	∧	B	)
T	T			T	T	T	
T	F			T		F	
F	T			F		T	
F	F			F		F	

Syntax and semantics: $\neg(A \wedge B)$

Syntactic formation:

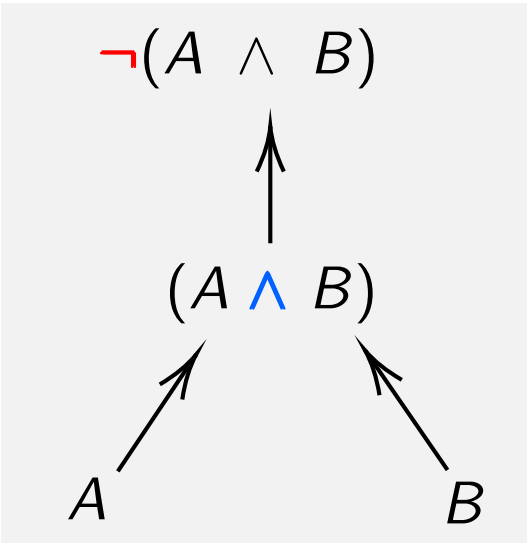


Truth-conditions

A	B	¬	(	A	∧	B	)
T	T	F		T	T	T	
T	F			T		F	
F	T			F		T	
F	F			F		F	

Syntax and semantics: $\neg(A \wedge B)$

Syntactic formation:

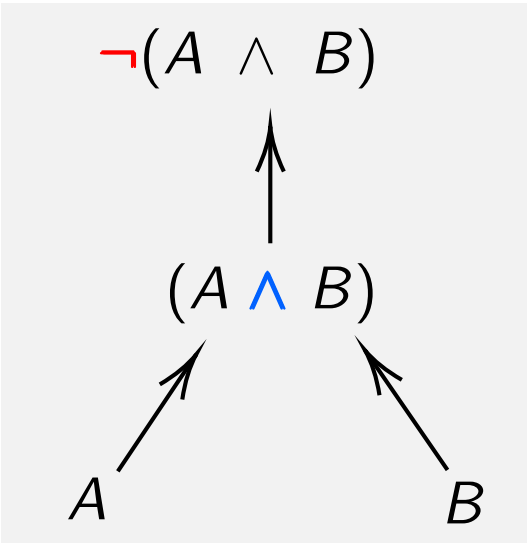


Truth-conditions

A	B	¬	(	A	∧	B	)
T	T	F		T	T	T	
T	F			T	F	F	
F	T			F		T	
F	F			F		F	

Syntax and semantics: $\neg(A \wedge B)$

Syntactic formation:

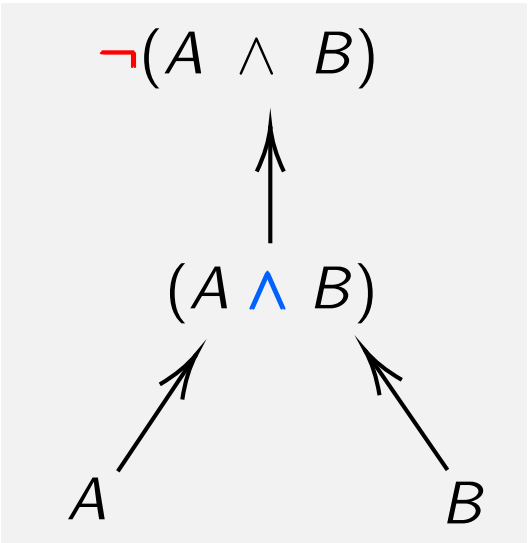


Truth-conditions

A	B	¬	(	A	∧	B	)
T	T	F		T	T	T	
T	F	T		T	F	F	
F	T			F		T	
F	F			F		F	

Syntax and semantics: $\neg(A \wedge B)$

Syntactic formation:



Truth-conditions

A	B	¬	(	A	∧	B	)
T	T	F		T	T	T	
T	F	T		T	F	F	
F	T			F	F	T	
F	F			F		F	

Syntax and semantics: $\neg(A \wedge B)$

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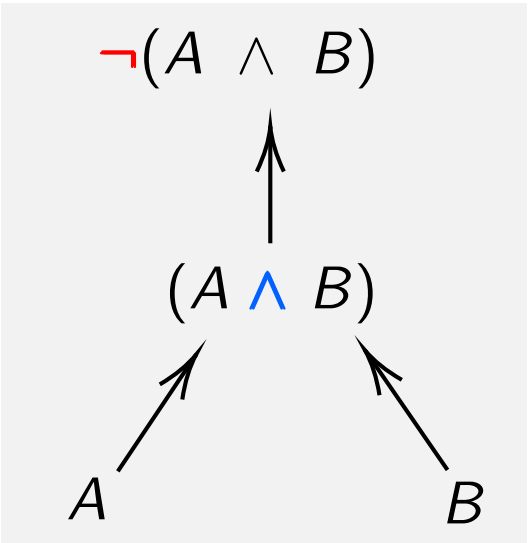

Truth-conditions

A	B	¬	(	A	∧	B	)
T	T	F		T	T	T	
T	F	T		T	F	F	
F	T	T		F	F	T	
F	F			F		F	

Syntax and semantics: $\neg(A \wedge B)$

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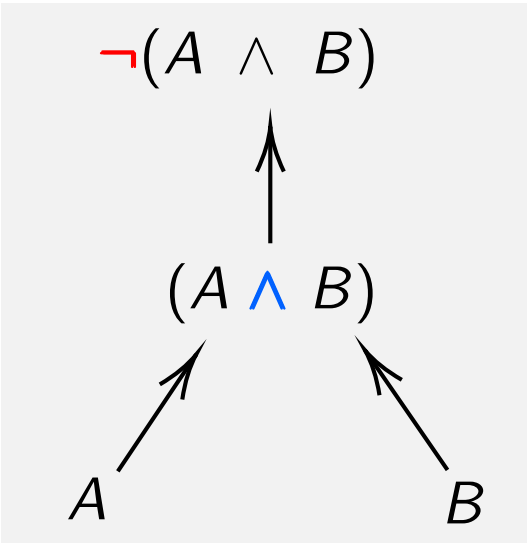
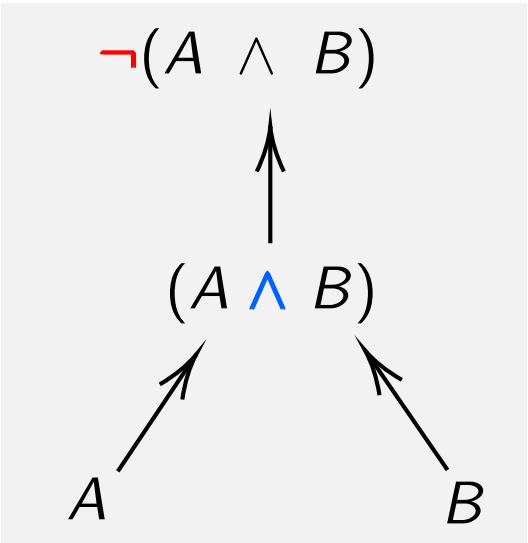


Truth-conditions

A	B	¬	(	A	∧	B	)
T	T	F		T	T	T	
T	F	T		T	F	F	
F	T	T		F	F	T	
F	F			F	F	F	

Syntax and semantics: $\neg(A \wedge B)$

Syntactic formation:



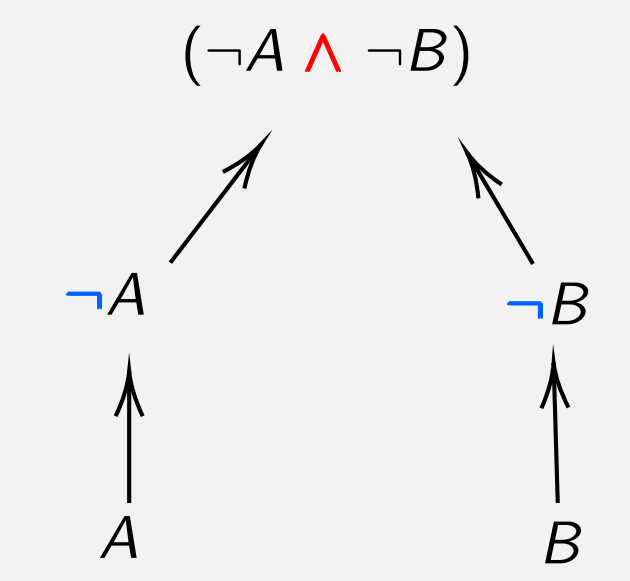
Truth-conditions

A	B	¬	(	A	∧	B	)
T	T	F	T	T	T	T	
T	F	T	T	F	F	F	
F	T	T	F	F	F	T	
F	F	T	F	F	F	F	

Compare $(\neg A \wedge \neg B)$

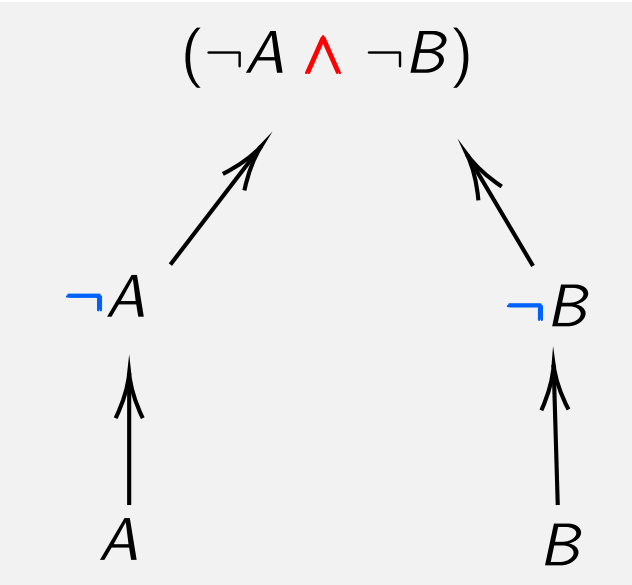
Compare $(\neg A \wedge \neg B)$

Syntactic formation:



Compare $(\neg A \wedge \neg B)$

Syntactic formation:



What about its truth-conditions?

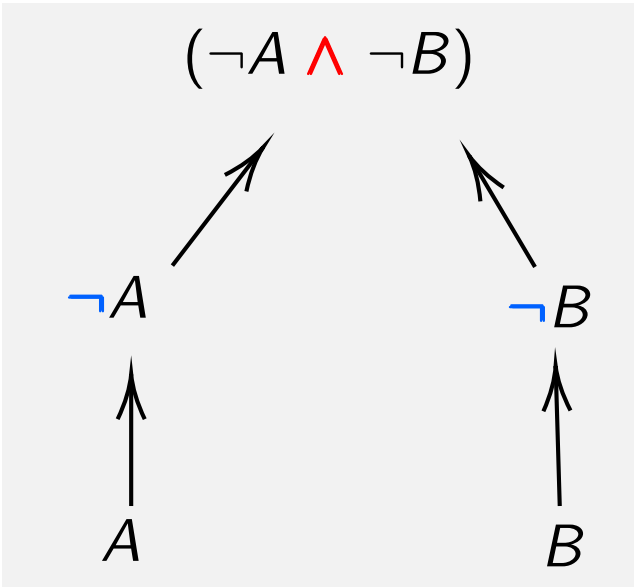
A	B	(¬ A ∧ ¬ B)
T	T	
T	F	
F	T	
F	F	

Compare $(\neg A \wedge \neg B)$

What about its truth-conditions?

A	B	$(\neg$	A	$\wedge$	$\neg$	B$)$
T	T		T			T
T	F		T			F
F	T		F			T
F	F		F			F

Syntactic formation:

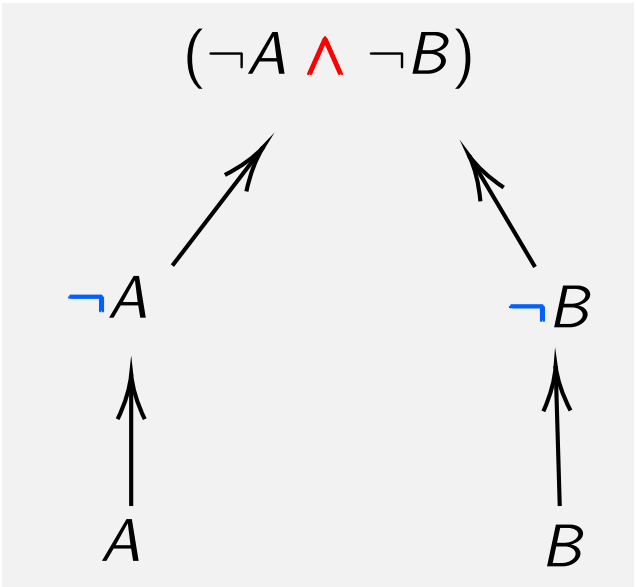


Compare $(\neg A \wedge \neg B)$

What about its truth-conditions?

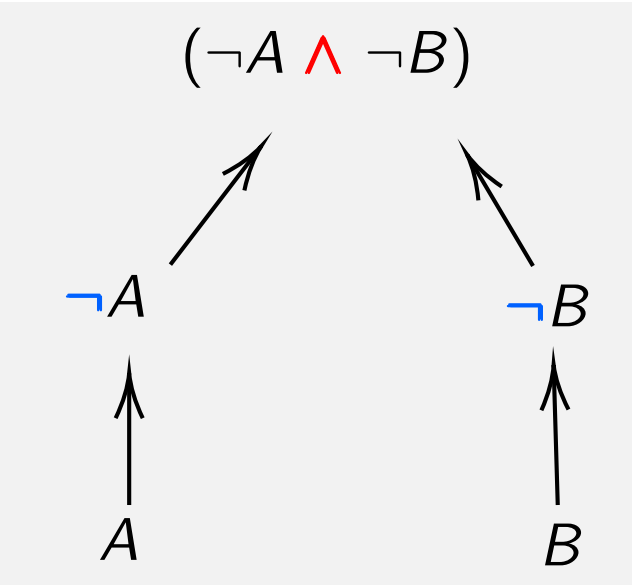
A	B	$(\neg$	A	$\wedge$	$\neg$	B$)$
T	T	F	T			T
T	F	F	T			F
F	T	T	F			T
F	F	T	F			F

Syntactic formation:



Compare $(\neg A \wedge \neg B)$

Syntactic formation:



What about its truth-conditions?

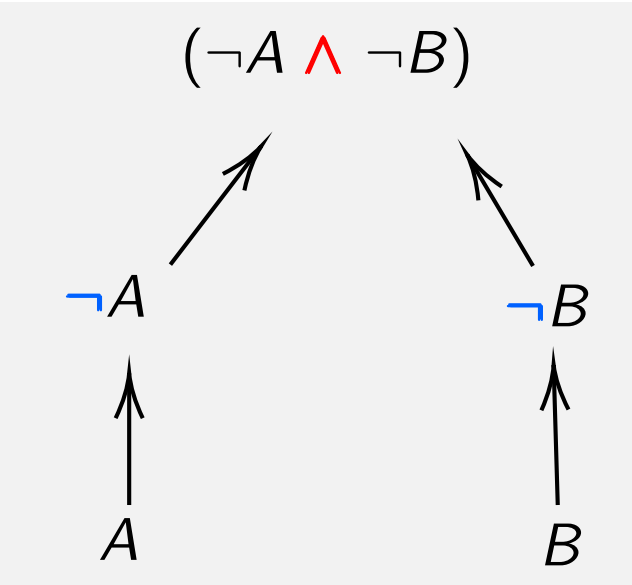
A	B	(¬	A	∧	¬	B)
T	T	F	T		F	T
T	F	F	T		T	F
F	T	T	F		F	T
F	F	T	F		T	F

Compare $(\neg A \wedge \neg B)$

What about its truth-conditions?

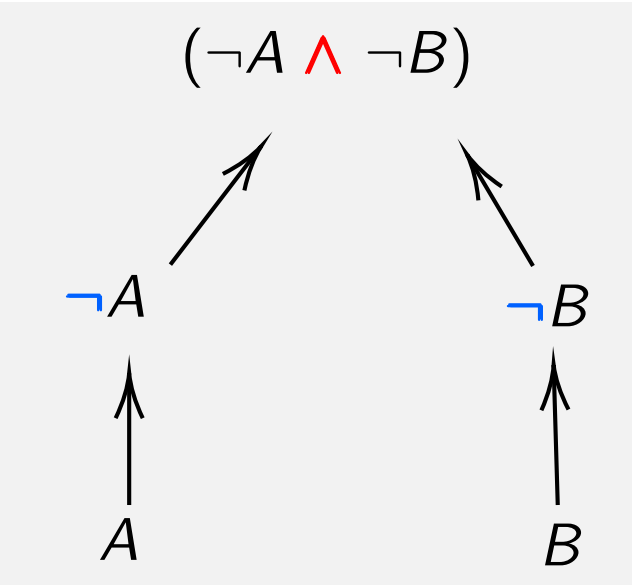
A	B	$(\neg$	A	$\wedge$	$\neg$	B$)$
T	T		F	T	F	F	T
T	F		F	T	F	T	F
F	T		T	F	F	F	T
F	F		T	F	T	T	F

Syntactic formation:



Compare $(\neg A \wedge \neg B)$

Syntactic formation:



What about its truth-conditions?

A	B	(¬	A	∧	¬	B)
T	T	F	T	F	F	T
T	F	F	T	F	T	F
F	T	T	F	F	F	T
F	F	T	F	T	T	F

Compare with the previous one:

A	B	¬	(	A	∧	B	)
T	T	F	T	T	T		
T	F	T	T	F	F		
F	T	T	F	F	T		
F	F	T	F	F	F		