

# Counterfactuals and normative conditionals: key terms and state of the art

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## Counterfactuals: Key terms

a **counterfactual conditional** is (expressed via) a sentence of the following form: *If A had been the case, B would have occurred* (or *If A were the case, B would occur*)

counterfactuals are, strictly speaking, **subjunctive conditionals** with **antecedent** that is assumed **false** (but note: SEP/Starr 2021 uses counterfactuals and subjunctive conditionals interchangeably, preserving the confusion in the literature)  
examples of a decreasing plausibility:

- If Lukáš had been the president of SR, he would have been a head of a state.
- If the Department hadn't applied for any project, Daniela wouldn't have been its member.
- If Lukáš were the president of SR, he would be carefree.
- If Marián had been the president of SR, he would have been identical to Zuzana Čaputová.

## Counterfactuals: Key terms

SEP reminds us that there are also **alternative formulations** of counterfactual conditionals, which do not fit into the *If A had been the case, B would have occurred* scheme:

- If Maya had run, she might have been elected.
- If Maya had run, she might have been elected and would have been an excellent Senator.
- Mr. Taft never asked my advice in the matter, but if he had asked it, I should have emphatically advised him against thus stating publicly his religious belief.
- If Maya had run, she probably would have won and she might have won big.

## Counterfactuals: Key terms

Q: Is there any way how to capture all these options?

a tentative suggestion: A counterfactual conditional is a proposition of the form  $A > B$  where  $A$  is false, and in order for the whole proposition to be true, there should be a certain dependence of  $B$  on  $A$  (this dependence can be specified in various ways, e.g., a truth of  $A$  at some past moment substantially increases the likelihood of  $B$ ).

## Counterfactuals: Key terms

counterfactual conditionals exhibit **non-monotonicity** (Goodman 1947, Lewis 1973); example:

- If Daniela hadn't organised a workshop this year, her project would have been lacking a promised output.
- If Daniela hadn't organised a workshop this year, but Naomi had, the project would not have been lacking a promised output.
- If Daniela hadn't organised a workshop this year, Naomi had, but the workshop had been cancelled in the end due to the health crisis, the project would have been lacking a promised output.

Goodman's problem (as specified by SEP): "The truth-conditions of counterfactuals depend on **background facts and laws**. It is challenging to specify these facts and laws in general, but particularly difficult to specify them in non-counterfactual terms."

## Counterfactuals: Key terms

a **counterpossible conditional** is a counterfactual with an impossible antecedent

examples of a decreasing plausibility:

- If there were true contradictions, classical logic would not be the right logic.
- If there were true contradictions, Priest would be happy.
- If there were true contradictions, Tichý would be happy.
- If there were true contradictions, classical logic would be the right logic.

## Counterfactuals: State of the art

initial motivation for the debate:

**truth-functional logic** is not an adequate tool for capturing counterfactuals (SEP): It is inadequate because there is no truth-functional connective whatsoever that simultaneously combines two false sentences to make a true one (slide one, examples 1 and 2) and combines two false ones to make a false one (slide one, examples 3 or 4).

in addition, **possible-world semantics** can be deemed insufficient for capturing counterpossible conditionals (we will return to this point at the end of this section)

## Counterfactuals: State of the art

**possible-world semantics** (Stalnaker 1968, Lewis, 1973; criticised by Tichý 1976 and in the debate on counterpossibles)

they overcome the insufficiency of a truth-functional approach and can account for non-monotonicity, but many of them ignore background conditions (not a “complete” analysis of all truth-conditions)

two main varieties:

- **strict conditional analysis** (basic):  $\Box(A \rightarrow B)$
- **similarity analysis** (basic): all the  $w$ -worlds most similar to  $w@$  are  $B$ -worlds.



## Counterfactuals: State of the art

**the premise theory:** in comparison with possible-world semantics approaches, the premise theory approaches counterfactuals from a perspective closer to Goodman (Veltman and Kratzer in several works); the approach is also close to similarity theory, but it aims for a greater precision w.r.t. intuitively clear examples (such as Tichý's 1976 example)

Veltman's approach is based on the ideas that situations (subsets of worlds) not obeying the relevant laws are excluded from the consideration and that some facts determine other fact

## Counterfactuals: State of the art

### the probability approach

Adams' Prior Probability Analysis: The assertability of a conditional "If A had been the case, B would have occurred" is proportional to the agent's credence in B prior to learning that A was false.

problem: the predictions about assertability are not always correct

several different suggestions how to improve the idea proposed in the literature (e.g., by accounting for facts that agent learns after they learn that the antecedent is false)

problem: as pointed out in the SEP entry, the theory does not provide truth-conditions for all counterfactuals, there is a divergence from actual human reasoning, and an issue with implementation (the latter is improved in Bayesian approaches)

## Counterfactuals: State of the art

Berto, Jago (2019): **Vacuism** is the view that all counterpossibles are trivially true, and this view seems wrong to many influential scholars (Brogaard, Salerno, Bernstein, Bjerring, Krakauer, Nolan, Priest...)

this is so mainly because vacuism cannot account for the intuitive difference between examples of varying plausibility (cf. slide 5)

often, impossible worlds are invoked to account for the **fine-grainedness of counterpossibles** (yet various hyperintensional frameworks, including TIL, might do)

## Normative conditionals: Key terms

normative conditionals include **imperative conditionals** and **indicative conditionals**

**imperative conditional** is (expressed via) a sentence of the following form: *If A, do B!*

examples of a decreasing plausibility:

- If it rains heavily, close the window!
- If it rains heavily, open the window!
- If it rains heavily, prove that it rains and that it does not rain!

note: if B would be inevitably true in case A were true, it would (in my view) not increase the plausibility - it would decrease it: If you're closing the window, close something!

## Normative conditionals: Key terms

normative conditionals that are best understood as **indicative conditionals** include the following: “B is obligatory if A is the case”; “If A, B is required”; “if A, B must be”; “If A, then B must not happen”; “If A, x shall be obliged to B”

examples:

- If an employee unwarrantedly enriches himself/herself to the detriment of the employer or an employer unwarrantedly enriches himself/herself to the detriment of an employee, such enrichment must be surrendered.
- The working time of employees who perform work under agreements on work performed outside an employment relationship must not exceed 12 hours within any 24-hour period.

## Normative conditionals: Key terms

normative conditionals are thus **not limited to**:

- exclamatory sentences: they can be expressed via at least seemingly declarative sentence (x shall be obliged to do B/ B must be the case)
- normative conditionals requiring action (do B!/B must be the case): they can also require that something is not done (do not do B!/ B must not be the case / B cannot be the case)
- conditional sentences: normative conditionals are often “buried” in a seemingly unconditional sentence (x who is... must do B -> If x is ...x must do B)

## Normative conditionals: State of the art

**non-cognitivist approaches** are a plausible choice for imperative conditionals due to their apparent non-truth-aptness  
such approaches face Jørgensen dilemma/trilemma  
more generally, a challenge is how to combine truth-functional connectives or intensional modals (which are semantically based on the truth-assignment in possible worlds) with imperatives that are not truth apt

**Dubislav's convention:** An imperative F is called derivable from an imperative E if the descriptive sentence belonging to F is derivable with the usual methods from the descriptive sentence belonging to E, whereby identity of the commanding authority is assumed.

## Normative conditionals: State of the art

in search for an imperative logic, several suggestions have been considered in the literature (Hansen 2013):

- **logic of satisfaction**: imperatives are not true, but they can be satisfied
- **logic of existence**: imperatives exist and we can reason about what imperatives also exist if some do (the problem of explicit - implicit/ what grounds this existence)
- **logic of ideal existence**: existence in a normative system that is closed under consequences
- Hansen himself arrives at a pessimistic conclusion - there is **no logic of imperatives**



## Normative conditionals: State of the art

**cognitivist approaches** are a plausible choice for normative conditionals that are indicative conditionals due to their apparent truth-aptness

the majority of the works in deontic logic have been published within this approach

such approaches face the challenge of the is/ought gap (but usually ignore it)

## Normative conditionals: State of the art

in deontic logic, we often encounter attempts to deal with normative imperative conditionals and normative indicative conditionals in the same way (cognitivist or non-cognitivist) **deontic action logic** (based on Boolean algebra) can be perceived as a middle way between the two: deontic propositions have truth values, but actions don't (they have other values; e.g., in Kulicki and Trypuz 2015 onwards these are called deontic values); in TIL, a similar approach was taken by Kuchyňka (2012)

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