

Keywords A – Z: belief update

ψ (pronounced 'psi', symbol for belief base)

refers to a set of beliefs, called a belief base, which contains all your beliefs about the world, and its consequences

$\psi_1 \vee \psi_2$ (disjunction of two distinct belief bases)

ψ_1 is a belief set containing a set of beliefs and its consequences

ψ_2 is also a belief set, different to ψ_1 , containing a set of beliefs and its consequences

the disjunction $\psi_1 \vee \psi_2$ refers to a new set of beliefs obtained by combining all the beliefs of ψ_1 and the beliefs of ψ_2 (like the statistical union of two sets in a Venn diagram)

when we evaluate whether a particular statement follows from the disjunction $\psi_1 \vee \psi_2$, the statement should follow from either ψ_1 or ψ_2 , or both.

$\psi_1 \wedge \psi_2$ (conjunction of two distinct belief bases)

ψ_1 is a belief set containing a set of beliefs and its consequences

ψ_2 is also a belief set, different to ψ_1 , containing a set of beliefs and its consequences

the conjunction $\psi_1 \wedge \psi_2$ refers to a new set of beliefs obtained by combining the common beliefs of ψ_1 and the beliefs of ψ_2 (like the statistical intersection of two sets in a Venn diagram)

when we evaluate whether a particular statement follows from the conjunction $\psi_1 \wedge \psi_2$, the statement should follow from both ψ_1 and ψ_2 .

completeness / is complete (relating to a belief base)

not only do we know whether or not a belief is in a complete belief base, we know that either a belief or its negation will be in a complete belief base

consequences / is a consequence of

the inferences which follow from your beliefs, other beliefs which your beliefs entail

the inferences which follow from updating your beliefs

interpretation

refers to a mapping of a set of statements in a belief system to truth values (e.g. either true or false)

new information

facts or statements introduced in the question for the purpose of reasoning in this survey

these facts are taken at face value i.e. taken without having any consequences

satisfiable

the property of a (set of) statement(s) to be true with respect to some interpretation in a belief system

update / updating (*different forms of the same word*)

when we perform an update, we assume that the world has moved on, so to speak

when we update ψ with μ , we are saying that we used to believe ψ , we now know that μ holds, and we to update our view of the world, knowing that the world may have changed

contrast this with belief revision where a revision of ψ with μ means that we used to believe ψ , we know now that μ holds, and we need to modify ψ by adding μ , acknowledging that we may have been wrong if μ contradicts ψ

revision is applicable in a static world (the world has not changed) whereas update is applicable in a dynamic world (where things may have changed)
