Handout for Week 5: Reason Relations II

Philosophy of Language.
Metavocabularies of Reason:
Pragmatics, Semantics, and Logic
https://sites.pitt.edu/~rbrandom/Courses

1. Denying global monotonicity of implication and incompatibility:
Monotonicity of implication commits us to the structural metainference:

$$\frac{\Gamma|\sim A}{\Gamma,\Delta|\sim A.}$$

And monotonicity of incompatibility commits us to the structural metainference:

$$\frac{\Delta\#A}{\Delta,\Gamma\#A.}$$

So what should we conclude about $\Gamma\cup\Delta$ and A if *both* $\Gamma|\sim A$ and $\Delta\#A$ hold?
There is no general answer.

2. A *material rational frame* (MSF) is an ordered triple $<L, IMP\subseteq L\text{x } \mathcal{P}(L), INC\subseteq\mathcal{P}(L)>$, where L is a set of sentences and $\mathcal{P}(L)$ is its powerset (the set of subsets of L).
IMP is the set of *implications* $\Gamma|\sim A$, where $\Gamma\subseteq L$ and $A\in L$.
INC is the set of *incoherent* subsets of the language, where $\Gamma\#A$ iff $(\Gamma\cup\{A\})\in INC$.

3. If $\Gamma|\sim A$ and for every $X\subseteq L$, $\mathbf{\Gamma,X|\sim A}$ ($<\Gamma\cup X,A>\in IMP$), then $\Gamma|\sim A$ holds *persistently*, which we can write as $\Gamma|\sim^{\uparrow}A$. Monotonicity as a modality.
Looking forward: if $\Gamma|\sim^{\uparrow}A$ we will say $\Gamma|\sim\Box A$.
Shy of persistence, we keep track of *ranges of subjunctive robustness* of implications.

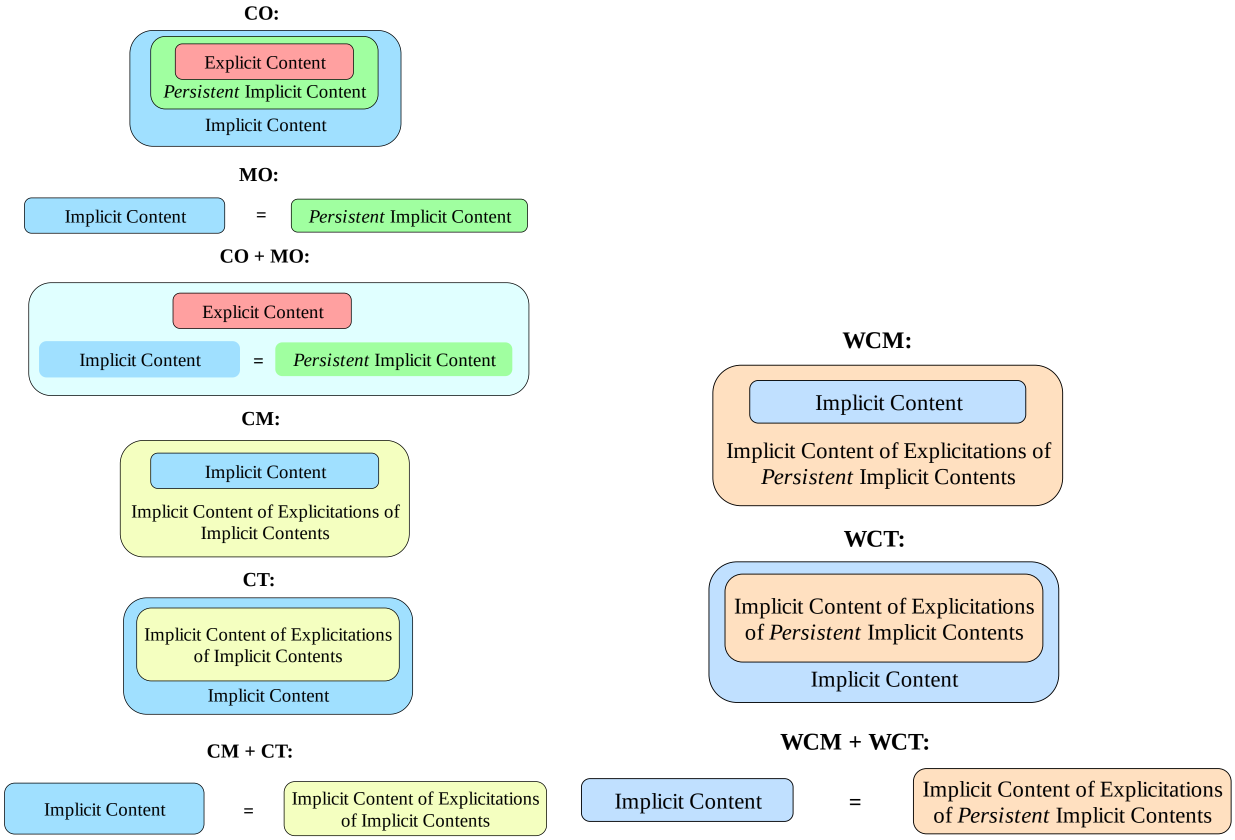
4. Weak Cautious Monotonicity (WCM) and Weak Cumulative Transitivity (WCT):

WCM: $$\frac{\Gamma|\sim^{\uparrow}A \quad \Gamma|\sim B}{\Gamma,A|\sim B.}$$

WCT: $$\frac{\Gamma|\sim^{\uparrow}A \quad \Gamma,A|\sim B}{\Gamma|\sim B.}$$

5. The members of the premise set Γ are its *explicit* content.
If $\Gamma|\sim A$ then A is part of Γ's *implicit* content, in the sense that it is *implied by* Γ.
Explicitation is making implicit content explicit, by using implied consequences as further explicitly accepted premises.
Various structural principles concerning reason relations stipulate relations between implicit and explicit contents.

Principles Relating
Explicit and Implicit Content



6. Transitivity principles can force stronger monotonicity structure.

Mixed Cut (MC): $$\frac{\Gamma|\sim A \quad \Delta,A|\sim B}{\Gamma,\Delta|\sim B.}$$

Monotonicity (MO): $$\frac{\Gamma|\sim A}{\Gamma,\Delta|\sim A}$$

Containment (CO): $$\frac{A\in\Gamma}{\Gamma, B|\sim A}$$

Dan Kaplan: In the context of CO, **MC** (Mixed Context Cut, a *strong* transitivity principle) forces MO:

Suppose $\Gamma|\sim A$, and C is some element of Γ.

Then $\Gamma,C|\sim A$, since $\Gamma\cup\{C\}=\Gamma$.

$\Delta,C|\sim C$, by CO.

By MC, we can then "cut" C from the premise-set of $\Gamma,C|\sim A$, and the conclusion of $\Delta,C|\sim C$, and "mix" what's left over on the premise side, to get $\Gamma,\Delta,C|\sim A$. Since by hypothesis $C\in\Gamma$ it follows that $\Gamma,\Delta|\sim A$. But then CO and MC have taken us from $\Gamma|\sim A$ to $\Gamma,\Delta|\sim A$ for arbitrary Δ. That is just MO.

Levels of Rational Structure	**Monotonicity Principle**	**Transitivity Principle**
Traditional Urestricted (Classical/Intuitionist)	MO	MC
Implication Restricted	CM	CT
Persistence Restricted	WCM	WCT
Membership Restricted	CO	Contraction

Cautious Monotonicity (CM):

$$\frac{\Gamma|\!\sim A \quad \Gamma|\!\sim B}{\Gamma, A|\!\sim B}$$

Cumulative Transitivity (CT):

$$\frac{\Gamma|\!\sim A \quad \Gamma, A|\!\sim B}{\Gamma|\!\sim B}$$

7. Ulf Hlobil: All we need to add to CO and **CT** (Shared Context Cut, a *weak* transitivity principle) to get MO is a conditional satisfying the Deduction-Detachment Principle (DD):

Deduction-Detachment (DD): $\mathbf{\Gamma|\!\sim A \rightarrow B}$ **iff** $\mathbf{\Gamma, A|\!\sim B}$

For we can argue as follows:

$\Gamma, A, B|\!\sim A$ by CO.

$\Gamma, A|\!\sim B \rightarrow A$ by DD (right to left).

Suppose $\Gamma|\!\sim A$.

Then $\Gamma|\!\sim B \rightarrow A$ by CT, from $\Gamma|\!\sim A$ and $\Gamma, A|\!\sim B \rightarrow A$.

So $\Gamma, B|\!\sim A$ by DD (left to right).

But that means that CO, CT, and DD imply MO, since they take us from the supposition that $\Gamma|\!\sim A$ to the conclusion that $\Gamma, B|\!\sim A$, for arbitrary B. And that is just MO.

8. If reason relations need not be strictly monotonic and transitive, they will not have topological *closure* structure.

Then it need not be that $Con(\Gamma) = Con(Con(\Gamma))$.

Extracting consequences from consequences might yield further, new results.

And it need not be that $Con(\Gamma) \subseteq Con(\Gamma \cup \Delta)$.

Extracting some consequences might yield premise sets that no longer have all the consequences of the earlier premises.

Instead of the process of rational explicitation (explicitly acknowledging and reasoning from consequences as further premises) converging on a single, pre-determined set of consequences, that process will exhibit radical path dependence: ***the hysteresis of rational explicitation***.

For if rational consequence does not globally satisfy CM and CT, *explicitation* is not *inconsequential*. That entails hysteresis.

That is why *reason* necessarily has a *history*.

9. Irreducibly triadic incoherence:

Sellars (EPM):

A) 'S senses red sense content x' entails 'S noninferentially believes (knows) that x is red.'
B) The ability to sense sense contents is unacquired.
C) The capacity to have classificatory beliefs of the form 'x is F' is acquired.

Any two of these are compatible, but the three of them are not.

A is a blackberry.

A is red.

A is ripe.

10. A recipe for turning nonmonotonic implications into nonmonotonic incompatibilities?

Pirmin is drinking a beer # Pirmin does not drink alcohol.

Pirmin drinks beer, and the beer Pirmin drinks is O'Doul's √# Pirmin does not drink alcohol.

(O'Doul's is a nonalcoholic brand of beer.)

And in this case

Pirmin drinks beer, and the beer Pirmin drinks is O'Doul's √|~ Pirmin does not drink alcohol.

(Maybe he drinks other kinds of alcohol.)

11. Conceptual primacy of incompatibility-incoherence over implication-consequence?

Pursuing our pragmatics-first order of explanation, we have seen a fundamental connection between implication and incompatibility-incoherence.

For our understanding of these two reason relations, we deepened and developed Restall and Ripley's *bilateral* understanding of what is expressed by sequent turnstiles.

That sort of bilateralism has two basic ideas:

i. The left-hand, premise side of the turnstile concerns practical attitudes of *acceptance* of claimables, expressed by speech acts of *assertion* of them,
   while the right-hand, conclusion side of the turnstile concerns practical attitudes of *rejection* of claimables, expressed by speech acts of *denial* of them.
ii. The normative significance of reason relations, paradigmatically implication, is to be understood in terms of the *incompatibility* or *incoherence* of the *position* (status, constellation of commitments) that is the *combination* of one's attitudes towards the premises and one's attitudes towards the conclusion.
   Accepting all the premises is *incompatible with*, *rules out* denying all the conclusions.
   Such a position is *out of bounds* or *incoherent*.

We saw that it is easy to extend this understanding of *implication* in terms of the *incoherence* of some acceptances with some rejections to an understanding of *incompatibility* in terms of the incoherence of a whole set of acceptances: of the union of the premises and the conclusion.

So bilateralism is a broadly *incoherence*-first approach to defining reason relations in normative pragmatic terms.

12. Explosion, *ex falso quodlibet* (EFQ):

$$\frac{\Gamma |\!\sim \bot}{\Gamma |\!\sim A.}$$ that is, Γ is incoherent: for any $A \in \Gamma$, $\Gamma \# A$.

Ex ***fixo*** *falso quodlibet* (EFFQ):

$$\frac{\Gamma |\!\sim^{\uparrow} \bot}{\Gamma |\!\sim A}$$

That is, if Γ is *persistently* incoherent, so for any $A \in \Gamma$, $\Gamma \#^{\uparrow} A$, then its implications explode.
EFFQ stands to EFQ as WCM stands to CM.

13. Incompatibility-incoherence is nonmonotonic (fails the analogue of global MO) iff it can be that:

$\Gamma \# A$ and *not* $\Gamma, B \# A$.

Example:
Wave behavior and particle behavior are incompatible in classical mechanics.
In quantum mechanics, with lots of other auxiliary hypotheses added, they become compatible.

a) Incompatibility-incoherence fails the analogue of global CM if it can happen that $\Gamma \# A$ and $\Gamma |\!\sim B$ and *not* $\Gamma, B \# A$.

Then $\Gamma \cup \{A\}$ is ***explicitly*** **incoherent, but** ***implicitly*** **coherent**.
For it can be turned into a coherent set by explicitation.

b) Dually, Incompatibility-incoherence that fails the analogue of global CM allows that *Not* $\Gamma \# A$ and $\Gamma |\!\sim B$ and $\Gamma, B \# A$.

Then $\Gamma \cup \{A\}$ is ***explicitly*** **coherent, but** ***implicitly in*****coherent**.
Example:
Probably most carefully argued philosophy articles you have ever read (besides those you haven't). It is one task of the reader-reviewer-referee to extract the consequences that, when made explicit, render the whole incoherent.

Logical *inconsistencies* are *persistently* incoherent.

That reasons and reason relations of consequence and incompatibility can intelligibly be understood to allow these possibilities is richly philosophically suggestive.
Assuming that reason relations have globally closed structures (are monotonic and transitive), closes off the possibility of thinking clearly and consecutively about these possibilities.