Some problems of Entailment—A Workshop on Relevance Logic

The Graduate Center, CUNY

Room 8203

Friday, October 3, 2025, 9:30 am – 5:30 pm

Speakers

Thomas Macaulay Ferguson (Rensselaer)

Kit Fine (NYU)

Shay Allen Logan (Kansas State)

Alexander Macswan (CUNY)

Shawn Standefer (NC State)

Yale Weiss (CUNY)

Daniel West (CUNY)

Program

Introduction	9:30 – 9:40 am
Talk 1. **The first degree fragment of BM: A starting point for multilateralism**, Thomas Macaulay Ferguson	9:40 – 10:40 am
Talk 2. **Are ultra-liberal attitudes relevant?**, Alexander Macswan	10:45 – 11:45 am
Break	11:45 – 11:55 am
Talk 3. **The disjunction property for operational relevance logics**, Daniel West and Yale Weiss	11:55 am – 12:55 pm
Lunch	12:55 – 2:05 pm
Talk 4. **The trivialization of exact entailment**, Kit Fine	2:05 – 3:05 pm
Talk 5. **Relevant and constructive logics**, Shawn Standefer	3:10 – 4:10 pm
Break	4:10 – 4:20 pm
Talk 6. **Against ternary relation semantics**, Shay Allen Logan	4:20 – 5:20 pm
Closing	5:20 – 5:30 pm

Abstracts

The first degree fragment of BM: A starting point for multilateralism (Thomas Macaulay Ferguson)

In this talk, I plan on discussing the first degree fragment of the weak relevant logic BM from the perspective of Wansing/Ayhan-style multilateralism. The first degree fragment of B (i.e., the first degree fragment of E and all intermediate systems) famously admits a bilateral semantics in which one gives truth values as pairs including coordinates for both truth and falsity. We will discuss how one might take a similar approach to give generalized tuple semantics for BM_{FDE} and systems intermediate between it and E_{FDE}. This (with some luck) points us in a direction of a general algebraic characterization of multilateralism as a product that bears a strong resemblance to Płonka sums. (This work is very much in progress, as the reader should guess from the qualification "with some luck".)

The trivialization of exact entailment (Kit Fine)

I show how exact entailments can be converted into classical entailments in a way that makes them unsuited to some of the purposes to which they have been put.

Against ternary relation semantics (Shay Allen Logan)

Semantic theories can be used to define logics. Almost always, it turns out that the resulting logic admits theories that correspond to nothing provided by the semantics. This presents a puzzle: Why should the space of logical possibilities admitted by a logic outstrip the space of semantic possibilities we used to define the logic in the first place? Quite often, this puzzle is easily resolved by reflecting on what the semantics is meant to do. In the case of the ternary relational semantics for relevance logics I think (and will in this talk argue) that such a resolution is untenable.

Are ultra-liberal attitudes relevant? (Alexander Macswan)

Ann thinks that every vegan has to supplement B12. Bob says to his vegan friend Carol, whom Ann has never met or heard of in any way: "Ann thinks you have to supplement B12." Ultra-liberal attitude reports (ULARs), like this one, have puzzled natural language semanticists of late. The paradigm cases, given that they involve attributing a belief to

someone who has likely never tokened it, are certainly difficult to incorporate into a semantics of belief. More importantly for present purposes, it has recently been found that assertability of ULARs obeys some systemic constraints which have been difficult to adequately model. I show that a model constructed using tools from the relevance logic E, appealing to the *use criterion* and *entailment restriction*, naturally predicts all known variations of the phenomenon. This is at least suggestive evidence that natural language users rely on a system of relevant entailment when determining the truth of ULARs. However, philosophical questions remain open as to the appropriate semantic interpretation of the model proposed.

Relevant and constructive logics (Shawn Standefer)

Relevant logics and constructive logics are generally viewed as two distinct areas. In this talk, we will highlight some ways in which some relevant logics exhibit features of constructive logics. We will use models and natural deduction systems to bring out these points of comparison. This is joint work with Yale Weiss.

The disjunction property for operational relevance logics (Daniel West and Yale Weiss)

A logic has the disjunction property just in case whenever a disjunction is valid, at least one of the disjuncts is valid. The disjunction property is important to constructivists and is a well-known feature of intuitionistic logic. In this talk, we use model-theoretic techniques to show that the disjunction property also holds in Urquhart's operational relevance logics. This is a known result in the case of the positive semilattice logic, but the proof is quite different, being proof-theoretic rather than semantic. These results suggest that operational relevance logics merit further attention from a constructivist perspective. Along the way, we also provide a novel proof that the disjunction property holds in intuitionistic logic.