An Abelization of connexive principles

Luis Estrada-González
Universidad Nacional Autonoma de Mexico, Mexico

This paper is an investigation of connexive principles through the ideas of Abelian logic. On one hand, connexive logics (cf. [3]) have a very interesting take on conditionals and negation, as they validate principles that involve them, such as

**Aristotle’s Thesis (AT)** \( \neg(A \supset \neg A) \)

**Boethius’ Thesis (BT)** \( (A \supset B) \supset \neg(A \supset \neg B) \)

**Abelard’s Principle (AP)** \( \neg((A \supset B) \land (A \supset \neg B)) \)

Accordingly, a connexive principle is **Aristotelian** if in all its conditional proper subformulas the antecedent is equivalent to some proper subformula of the consequent. Otherwise, the principle is **Boethian**. (AT) is Aristotelian, whereas (BT) and (AP) are Boethian.

On the other hand, one of the main ideas stressed in Abelian logic is that any conditional *If A then B* induces a negation of A, namely the negation of A relative to B (see [1]). Thus, connexive logic seems to be a good arena to further explore the Abelian idea connecting conditionals and negations. We do this using the notion of **Abelization**, which we define as a function \( A \) on a suitable formal language \( L \) that, roughly, transforms conditionals into negations, and vice versa. The results will take us to some laws abhorred by paraconsistent logicians.

References

