

Deductive analogy and admissibility

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Abstract: In his book, *By parallel reasoning, the construction and evolution of analogical arguments* (2010), Paul Bartha proposes an analysis of analogy that he calls "The articulation Model", a model which should include several types of analogy in different fields such as Mathematics and physics. The form of analogy proper of mathematics is called deductive. More precisely, the model presents a source domain (the domain which already exist) and a target domain (the domain for what we want establish analogy). In the source domain, Q is some proven proposition, P some set of hypotheses or premises and the proof of Q by P is presented by a vertical relation. Similarly in the target domain the demonstration of Q' by P' is also presented by a searched vertical relation. Moreover, in order to go from the source domain to the target domain, horizontal relation must be established. Those make it plausible that the same kind of demonstration of the source domain apply to the target domain.

The point of my contribution is to show that in formal reasoning especially in logic, the horizontal relation amounts to a proof of admissibility. I will develop my talk around an example which shows how to transform a dialogical strategy into a sequent calculus demonstration or a natural deduction demonstration in the context of Constructive types theory.

Selected References

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