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- Type:** Article in Journal
- Author:** Sun-Joo, Shin
- Title:** Reconstituting Beta Graphs into an Efficacious System
- Year:** 1999
- Journal:** Journal of Logic, Language and Information
- Volume:** 8
- Issue:** 3
- Pages:** 273-295
- Keywords:** Efficacy, Existential Graphs, Natural deductive system, Naturalness, Transformation rules, Visual features, Visual intuitiveness
- Abstract:** Logicians have strongly preferred first-order natural deductive systems over Peirce's Beta Graphs even though both are equivalent to each other. One of the main reasons for this preference, I claim, is that inference rules for Beta Graphs are hard to understand, and, therefore, hard to apply for deductions. This paper reformulates the Beta rules to show more fine-grained symmetries built around visual features of the Beta system, which makes the rules more natural and easier to use and understand. Noting that the rules of a natural deductive system are natural in a different sense, this case study shows that the naturalness and the intuitiveness of rules depends on the type of representation system to which they belong. In a diagrammatic system, when visual features are discovered and fully used, we have a more efficacious deductive system. I will also show that this project not only helps us to apply these rules more easily but to understand the validity of the system at a more intuitive level.
- DOI:** 10.1023/A:1008303204427
- Language:** English