Root Cause Analysis Notes

D. Gueorguiev, 6/18/23

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# Overview of modern approaches to probabilistic causal modeling

## David Hume

## An Enquiry Concerning Human Understanding, 1757

## Hans Reichenbach

### The Direction of Time, 1956

## Patrick Suppes

### Probabilistic Theory of Causality, 1968

## David Lewis

### Counterfactuals, 1973

### Causation, 1974

Hume defined Causation twice over. He wrote “we may define a cause to be an object followed by another, and where all objects, similar to the first, are followed by objects similar to the second”. Or, in other words, “where, if the first object had not been, the second never had existed”.

Descendants of Hume’s first definition still dominate the philosophy of causation (as of 1974)

Wesley Salmon

Probabilistic Causality, 1980

Richard Otte

Ellery Eells

Judea Pearl

Kevin Murphy

Dynamic Bayesian Networks: Representation, Inference, and Learning, 1992

Peter Spirtes

Causation, Prediction, and Search, PhD thesis, 1993

Samantha Kleinberg

Algorithmic Enquiry Concerning Causality, PhD thesis, 2010

Discussion on Structural Equation Modeling

Overview on advances in Structural Equation Modeling

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Susan Owicki, L. L. (1982). Proving Liveness Properties of Concurrent Programs. *ACM Transactions on Programming Languages and Systems*, 455-495.

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(Clarke & Schlingloff, 2001): [here](https://github.com/dimitarpg13/root_cause_analysis_and_model_checking/blob/main/literature/ModelChecking/ModelChecking_ClarkeSchlingloff1999.pdf)

(Eells, 1991): [here](https://github.com/dimitarpg13/root_cause_analysis_and_model_checking/blob/main/literature/books/eells_probabilistic_causality_1991.pdf)

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(Otte, 1982): [here](https://github.com/dimitarpg13/root_cause_analysis_and_model_checking/blob/main/literature/Probability_and_Causality_PhD_Thesis_Otte_1982.pdf)

(G.E. Hughes, 1996): [here](https://github.com/dimitarpg13/root_cause_analysis_and_model_checking/blob/main/literature/ModelChecking/huges_cresswell_modal_logic.pdf)

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(Lewis, Causation, 1974): [here](https://github.com/dimitarpg13/root_cause_analysis_and_model_checking/blob/main/literature/Lewis-Causation_1974.pdf)

(Susan Owicki, 1982)