Abstract: Causative relations in the *Palsgraf* v. *Long Island Railway Co.* (1928) 248 N.Y. 339; 162 N.E. 99. case are analysed using John Sowa’s conceptual graphs (cgs) and Harold Somers’s cases in order to contribute to our knowledge of conceptual relations for use in knowledge representation. The model of causative relations is intended to be adapted for use in other domains using cgs. Our long-term goal is to facilitate automatic extraction of knowledge for intelligent systems retrieving legal information.

1. Introduction

The most formidable barrier to achieving intelligent information retrieval is deriving knowledge from text automatically. Unfortunately, there is neither a clear way through the barrier, nor a quick way over it. Until one is found, we chip away at the problem by clarifying our ontological representations, and text analysis in order to identify generalizable relations and predictable patterns in the hope that they will be reused. Experiments in automatic text extraction add to our NLP (natural language processing) techniques, but the problem of constructing knowledge representations (Krs) brings us back to the need to represent meaning to enable machine reasoning.

This is an attempt to chip away at the representation problem by analyzing causal relationships occurring in legal text. Concepts of cause and effect are common to all domains. The patterns derived from legal text can be useful elsewhere. We do not promise a breakthrough in automatic extraction, but isolation of causal patterns whose occurrence may be anticipated in other texts in future. Most of all, by analyzing fundamental relationships we help uncover the meaning in the text in a way that will allow its accurate representation for use in reasoning.

1.1 Outline

The classic negligence case, *Palsgraf* v. *The Long Island Railway Co.* is used to test the capability of Sowa’s conceptual graphs (cgs) to represent causation. The exposition of the arguments in *Palsgraf* is incomplete here, although an explanation is given in order make the examples comprehensible. It is not possible in this space to deal with the principles of negligence in adequate depth.
In attempting the causal representation, we look first at the conceptual relations available in Sowa's writings. Next we proceed to analyse Somers's case system. Finally, we look at excerpts of the representation of the facts of *Palsgraf* to evaluate the causal elements and to arrive at conclusions about causes which will help us to predict their occurrence, to represent them accurately and ultimately to be able to extract them automatically.

2. The Palsgraf Case

The facts are that the Plaintiff (P), Helen Palsgraf,

"was standing on a platform of the defendant's railroad after buying a ticket to go to Rockaway Beach. A train stopped at the station bound for another place. Two men ran forward to catch it. One of the men reached the platform of the car without mishap, though the train was already moving. The other man, carrying a package, jumped aboard the car, but seemed unsteady as if about to fall. A guard on the car, who had held the door open, reached forward to help him in, and another guard on the platform pushed him from behind. In this act, the package was dislodged, and fell upon the rails. It was a package of small size, about fifteen inches long, and covered by a newspaper. In fact it contained fireworks, but there was nothing in its appearance to give notice of its contents. The fireworks when they fell exploded. The shock of the explosion threw down some scales at the other end of the platform, many feet away. The scales struck the plaintiff, causing injuries for which she sues."

In this appeal, the court dismissed the complaint. Cardozo's majority opinion turned on the decision that D owed no duty of care to P. Liability was limited by establishing the need for a duty rather than by looking at causes. The Railway was not held responsible for the injury done, because the duty was not extant. The majority judges (four of six) begged the question of what causation. The facts provide a pattern of a situation that is judged not causative.

In the dissenting opinion of Andrews, J., the guard's action was the proximate cause of P's injury. The general duty of care involving the security of any person is enough to establish liability. The injury to the P can be adjudged to have happened as a consequence of the negligent accident of the package falling, caused by the guard's action. The injury would not have happened had the package not fallen. There are no collateral or contributory causes.

*Palsgraf* is a classic cockeyed case. That is to say, the events are highly improbable. It is the pattern of facts which, given the dearth of reasons for judgment, later courts look to for knowledge of what is causation. We will need to be able to show the relationship between the push and the injury, between the explosion and the injury, and so on. Furthermore, we shall have to represent facts clearly enough to support discussions of the foreseeability events. The point of the decision is to place some limitation on liability for freak accidents. The question is how are we to represent conceptual relations in a case where the facts are eminently significant in determining liability.

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4 Ibid., 99, as recounted by Cardozo, C.J.
5 Prosser 1953, 19.