

# Beyond Surface Event Representation

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## Abstract

The Knowledge Representation community has developed sufficient know-how to represent basic action events effectively for a wide variety of applications. The next step beyond this, we argue, is the representation of symbolic events, especially the underlying motivations and the event valuations. This task is vitally connected to reasoning about real world situations in a global discourse centered around identity politics. We discuss some of the concrete issues of representing “collective memories” as targets for symbolic allusion and sketch an event corpus suitable for representation testing.

## 1 Introduction

On November 10, 2018, Angela Merkel and Emmanuel Macron visited a railroad museum and signed the guestbook [16]. The event sounds banal, but it was important. And this significance hails not from the actions that these leaders took, but from prior significant events that the actions alluded to.

Specifically, Merkel and Macron were visiting the museum of the so-called Compiègne wagon, the locale for signing the armistice between Germany and France, which ended World War I in 1918. As the place where the armistice signing occurred at, the wagon became a cultural memorabilium, though its meaning was dependent on the point of view. In France, where the wagon was an allusion to the hard-won victory, it was glorified by receiving its own museum. In the anti-Republican rhetoric of 1930s Germany, especially of the rising National Socialist Workers’ Party (NSDAP) and its leader, Adolf Hitler, the wagon alluded to a “humiliating peace”.

Therefore, when the German occupying army returned to France, the cart was dragged from its museum and made the place for the French armistice delegation in turn to sign their surrender papers [14]. Thus converted in its valence, the cart was hitched to a train bound for Berlin, a trophy of the German victory now.

When seeing the visit to the Compiègne wagon museum in this light, the absence of news becomes the message, the tourist-like visit of the leaders of France and Germany a political symbol for normalized Franco-German relations.

## 2 Capturing the Allusions dignifying Events

Since the 1970s, the Knowledge Representation community has sussed out how to capture events in terms of actions, scripts, plans and goals [11] and developed flexible representations [6] for dealing with the fluctuating levels of detail [2] real world events provide. Doing so has supported applications ranging from indexing and search to event comparison [7], from case-based reasoning [9] to modus-operandi applications [17] and abductive simulations of the “what-if” type [13] [3].

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But as Schank argued [12], for some events, there is meaning for the actors in terms of stories alluded to; meaning that is a key aspect of the individual event. Such meaning cashes out as the motivation for undertaking the event in the first place; as reasons for remembering or forgetting an event; or as valence judgments of the event as “appropriate”, “insulting”, “encouraging”, “demeaning”, or similar.

Capturing the motivations and the valence of symbolic actions, we argue, is the next frontier for event knowledge representation. Developing that representation would allow the construction of a new suite of comparable applications, dealing with indexing and retrieval of documents mentioning symbolic events, as well as case-based comparison and modus-operandi reasoning, but this time both at the level of the symbolic message intended with the events as well as the surface description.

The key problem, representationally, is to model the target of the allusions, what Cultural Studies term the “collective memory” or “cultural remembrance” [1], i.e. collections of narratives that imbue events with meaning for social groups. Drawing out the connections from the public events that make the allusions to the elements of “collective memories” referenced is vital for appreciating why these events occurred. It also makes it possible to track their influence in the public discourse.

After all, symbolic communications are interpretation offers [10, 27–34] only. Different “collective memories” structure the same events into incommensurate narratives. In an age of identity politics, the opposition voters, such as the French voters of Marine Le Pen and the German voters of the “New Right” parties, will not receive the message of the Compiègne wagon visit as intended by the advisors of Merkel and Macron who planned the visit.

### 3 Challenges of Modeling Historical Allusions

We are under no illusion as to the difficulties of the modeling task at hand. Unlike scripts, which describe habitual events, allusions are exemplar-based and therefore require appropriate scoping of applicable relations: which aspects of the exemplar are carried over, which ones are reshaped or even suppressed.

Structurally, allusion is a two-way mapping task, with reduction and alignment problems, raising issues similar to entity-matching in database merging.

Taken individually, the commemorated events do conform to the basic actor-role models of standard knowledge representation practice. However, in the process of becoming adopted into the “collective memory”, events are often simplified or even distorted to the point of historical falsehood.<sup>1</sup>

In addition, some forms of group-narratives depend on trans-personal actors and entities—“the Nordic Race”, “international Capitalism” and its twin “international Communism”, etc.—without clear referents in present-day discourse. Such actors are themselves gross simplifications, or even personifications of social processes, and usually viewed disadvantageously by the group’s members. Reasoning about the behaviors of such actors may require counter-factual reasoning, a challenging problem in most knowledge representation systems.

Furthermore, this means that, taken together, the entirety of the “collective memory” of any particular group may be contradictory if pressed hard enough. This argues for care when unifying the elemental events into a single knowledge graph.

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<sup>1</sup>This holds for many “collective memories”; for example, for modern biology, consider the discrepancy between what proto-geneticist Mendel is credited with and the actual motivations underpinning his (explicitly anti-Darwinian) research; cf. [15].

## 4 Some Implementation Considerations

As an implementation choice, we are developing our representation in ResearchCYC.<sup>2</sup> Taking a cue from Davidson [6], we reify the allusion directly as a relation between events; notice that we are not reifying an interpretation event! Within the ResearchCYC ontology, an allusion is best captured as an **AspatialInformationStore**, a broad collection that includes proverbs and cliches. For modeling event valences, we have a base set of eighty emotions available in ResearchCYC to extend as needed.

As far as a contents base is concerned, modern mass media report almost daily on symbolic actions for our representation investigation. Such occurrences range from the economic (yellow-jacket fuel protests in Paris) to the political (the assassination of critics of despotic regimes) to the athletic (the kneeling of the US football players of African-American descent) to the cultural (establishing of the Alma Roseé exhibit on the Women Orchestra of Auschwitz in Vienna).

We counter presentist biases with historical cases of symbolic communication, such as the reign of Tudor monarch Henry VII [4], who underwent enormous efforts to reconcile his nobles symbolically after a gruesome civil war. These efforts included naming his first-born son Arthur, as a promise of a regency as peaceful, just and prosperous as the Arthurian past was then imagined to have been.<sup>3</sup>

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<sup>2</sup>This is KB 7168 from May 2018 [5]. In addition to the rich ontology, we leverage the conveniences of CYC's HOL extensions, while expecting that most of the theory will readily down-compile to FOPL and thus be usable on a variety of FO theorem proving systems; cf. [8].

<sup>3</sup>Prince Arthur's death at fifteen allowed his brother to become king as Henry VIII.

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