Chapter 18
A Conceptual Methodology for Dealing with Terrorism "Narratives"

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ABSTRACT

This paper concerns the use of in-depth analytical/conceptual techniques pertaining to the Artificial Intelligence domain to deal with narrative information (or "narratives") in the terrorism- and crime-related areas. More precisely, the authors supply details about NKRL (Narrative Knowledge Representation Language), a representation and querying/inferencing environment especially created for an advanced exploitation of all types of narrative information. This description will be integrated with concrete examples that illustrate the use of NKRL tools in two recent 'defence' applications, the first dealing with a corpus of "Southern Philippines terrorism" news stories used in an R&D European project, the second, carried out in collaboration with the French "Délégation Générale pour l'Armement" (DGA, Central Bureau for Armament), which handles news stories about Afghanistan's war.

INTRODUCTION

'Narrative' information concerns in general the account of some real-life or fictional story (a "narrative") involving concrete or imaginary 'characters': these try to attain a specific result, experience particular situations, manipulate concrete or abstract materials, send or receive mes-

sages, buy, sell, deliver etc. Narratives are formed of *temporally ordered sequences of 'elementary events'*, and this diachronic aspect represents one of their most important characteristics. Some important properties of narratives/elementary events are listed below – see Zarri (2009, pp. 2-13) for more details:

• Each elementary event of the stream corresponds to (is recognized through) the

presence of a single 'predicate' ("buy", "kill", "send"…) in the natural language (NL) description of the narrative under examination. According to the so-called 'neo-Davidsonian approach' – see, e.g., Higginbotham (1985, 2000), Parson (1990), etc. – a 'predicate' may correspond here not only to verbs in general but also to adjectives, nouns and preposition when they have a 'predicative' function.

- Besides time, 'space' is also very important from a narrative point of view, given that the elementary events of the stream occur generally in well-defined 'locations', real or imaginary ones. The connected events that make up a narrative are then both temporally and spatially bounded. Bakhtin (1982) speaks about "chronotopes" when drawing attention on the fact that time and spaces in narratives are strictly interrelated.

- As already stated, the elementary/monadic events of the stream must be logically correlated: this means that simple chronological successions of elementary events that take place in given locations cannot be defined as a unique 'narrative' without some sort of 'semantic coherence' and 'uniqueness of the theme' that characterise the different events of the stream. If this logical coherence is lacking, the events pertain to different complex events/narratives: a narrative can also be represented by a single elementary event.

- When the constitutive elementary events of the narrative are verbalized in NL terms, their logical/semantic coherence is normally expressed through syntactic constructions like causality, goal, indirect speech, co-ordination and subordination, etc. In this paper, we will systematically make use of the terms '*connectivity phenomena*' to denote the existence of this sort of clues, i.e., to denote what, in a stream of events, i) leads to a 'global meaning'

that goes beyond the simple addition of the 'meanings' conveyed by a single elementary event; ii) defines the influence of the context in which a particular event is used on the meaning of this individual event, or part of it.

- The characters involved in the elementary events/narratives are not necessarily human beings; we can have elementary events/narratives concerning, e.g., the vicissitudes in the journey of a nuclear submarine (the 'actor', 'character' etc.), the various avatars in the life of a commercial product, the transition of a given industrial machine from an 'idle' to a 'running' state, etc.

- Eventually, even if the narratives are often included within natural language (NL) texts, this is *not* necessarily true. A photo representing a situation that, verbalized, could be expressed as "The US President is addressing the Congress" is not an NL document, yet it surely represents a narrative.

A common differentiation carried out in the narrative domain concerns the separation between *fictional* and *non-fictional* narrative, see, e.g., Jahn (2005). 'Fictional' narratives have principally an entertainment value, and represent a narrator's account of a story that happened in an imaginary world: a novel is a typical example of fictional narrative. 'Non-fictional' narratives have, very often, some sort of intrinsic economic value, which means in practice that people could be willing to pay for a system able to process in an 'intelligent' way this sort of information and/or for the results of the processing. This sort of narratives are embodied, in fact, into corporate memory documents (memos, policy statements, reports, minutes etc.), news stories, normative and legal texts, medical records, many intelligence messages, surveillance videos, actuality photos for newspapers and magazines, material (text, image, video, sound…) for eLearning, Cultural

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