

# Automated Extraction of Weighted Semantic Maps From Texts to Study Cultural Differences

M. Afzal Upal

Effects & Influence Research Group Socio-cognitive Systems Section Defence Research & Development Canada-Toronto

**Abstract:** Semantic maps are a graphical knowledge representation scheme in which nodes represent concepts and edges between them represent connections between concepts. Weighted semantic maps are semantic maps that have weights assigned to edges to correspond to the strength of the connection between two concepts. The objective of the work reported here was to investigate the feasibility of automatically extracting weighted semantic maps of various concepts from writings of two different cultural groups to see if they can help in understanding cross-cultural differences. We used a modified version of ICAN algorithm to create weighted semantic graphs of concepts such as Jihad and God from Quran and Hamas postings on the web. We found interesting differences between the semantic maps extracted from the two sources. The Quranic concept of Jihad was tied to concepts of "striving", "cause" and "attacked," while the Hamas concept was most closely related to "confront", "command" and "require."