# **Computational Solutions for analyzing public discourse**

**Deep analysis of news and its consequences**

Prof. Tamir Sheafer |Prof. Shaul Shenhav |Yair Fogel-Dror

### Highlights

* Advanced state-of- the-art computational text analysis methods for analysing and understanding complex and multi-layered public discourse around the world
* Sophisticated deep learning algorithm that mimics human reading of texts—understanding what is the text about
* Fast, stable and highly accurate identification of hundreds of topics within texts
* Capacities: Monitoring—tracking hot issues over time and space; Strategy; Prediction
* In a sentence: bringing deep public and political expertise into data science

**Added Values**

* A combination of an algorithm with a sophisticated human reading of complex and multi-layered public discourse, by experts of political rhetoric, allow us to create unlimited number of labelled sentences in a very high resolution, and rather quickly
* Ability to work with the most sophisticated public discourse, with simpler public texts like short social media posts, and with much simpler commercial and corporate texts
* Our current dataset is based on more than 300,000,000 news items over a period of 20 years. Each sentence in this data is automatically identified as representing one of the hundreds of high-resolution topics that our system has generated
* Validity tests result in (most cases much) higher values than 70%—results which are dramatically higher compare with other methods we know
* Syntactic-based analysis is also used for specific tasks (e.g., identifying the roles of different actors in the text, and associating them with the sentiment or activity that is described in the text accordingly) [US Patent]

**Applications**

**Monitoring**

**Smart, sensitive and fast:** Real-time monitoring system that tracks media or any other textual source, based on an innovative technology. Traces topics, themes, actors and associations between the three. Allows a quick and highly-accurate adoption to new and unexpected challenges, such as following an unexpected crisis.

**Strategy**

A smart and sophisticated tool for assisting strategic decision-making at the micro and macro levels.

**Relevant Publications**

Segev, E., Shenhav, S., & Sheafer, T.(2013). Is the world getting flatter? A new method for examining structural trends in the news. *Journal of the American Society for Information Science and Technology, 64*(12), 2537-2547.

Sheafer, T., Shenhav, S., Takens, J., & van Atteveldt, W.(2014). Relative political and value proximity in mediated public diplomacy: The effect of state-level homophily on international frame building. *Political Communication, 31*(1), 149-167.

Van Atteveldt, W., Sheafer, T., Shenhav, S., & Fogel-Dror, Y. (2017). Clause analysis: Using syntactic information to automatically extract source, subject, and predicate from texts with an application to the 2008-2009 Gaza War. *Political Analysis, 25*(2), 207-222.

Fogel-Dror, Y., Shenhav, S. R., Sheafer, T., & Van Atteveldt, W. (forthcoming). Role-based Association of verbs, actions, and sentiments with entities in political discourse. *Media Methods and Measures*.