Neural Language Models as Social Analysis Tools

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This work aims to research the linguistic capabilities of Neural Language Models (NLMs) by studying autobiographical narrative coherence. The ability of NLMs to understand and produce human language has made them useful in a broader range of research and are also beginning to play their part in the social sciences (Aher, 2023). We decided to exploit the linguistic representation capacity of NLMs to investigate one of the most profound and individual aspects of human language: the narrative coherence. Studying this aspect from a social point of view is very challenging since autobiographical narratives are linked to the psychological dimension and identity construction of the individual. This opportunity is interesting because the artificial narrative production passes through a "Social Simulacra" (Park, 2022), a statistical representation of a vast overlap of individuals peculiarly condensed into a single prompt, becoming more precise the more specific the prompt request (Argyle, 2023). For this work has been took as reference the sample used for the standardization of the Narrative Coherence Coding Scheme (NaCCS) (Reese et al., 2011), a method commonly used for multidimensional analysis of narrative coherence. Following a proper induction NLMs were tasked with generating autobiographical stories about "personally" significant events. The results of the analyses demonstrated the varying consistency of the coherence dimensions along the variables introduced and analyzed through NaCCS. This study is limited to focusing on a representative sample of the American middle class, further studies can examine other specific socio-cultural factors through targeted prompt induction as used in the present work.

Keywords: Neural Language Models; Narrative Coherence; Social Simulacra; Prompt Induction; Content Analysis

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