Open Information Extraction (OpenIE) is an NLP task that involves extracting entities and the relationship between them in an unsupervised, domain-agnostic manner. OpenIE has benefited from the use of Large Language Models (LLMs) and one such system that leverages the power of LLMs for OpenIE is DeepEx (Wang et al., 2022). DeepEx generates triples using the attention mechanism and then ranks them using a contrastive ranking model that uses 6.2M sentences in its training phase. The aim of this thesis is to study the effects of replacing the contrastive ranking model with a lighter, linguistic acceptability model that would rank the triples based on their acceptability. Upon analysis of different types of models that have been fine-tuned on varying amounts of data (relevant to the linguistic acceptability task), it is found that even the base bert-large model (not trained on any data) is capable of competing with DeepEx. Upon using a dataset of 8500 samples, the proposed system surpassed the DeepEx system by 0.5 points on the OIE2016 benchmark (Stanovsky, G. and Dagan, I., 2016). The performance on other evaluation benchmarks is equally impressive. A thorough analysis of the results, followed by ablation studies that provide insight into the performance of the proposed system, is performed, leading to new insights as to the quality of the proposed method.