

word for ‘thrilling’ or ‘thrilled’, depending on context. However, this and other adjectives ending -ful are better expressed by means of the locution “full of *noun*” (“lleno/a de *sustantivo*”); e.g., thrilling: “lleno de emoción”. Another example is the word ‘gloomful’, which we will probably translate into Spanish as ‘gloomy’ or as a locution.

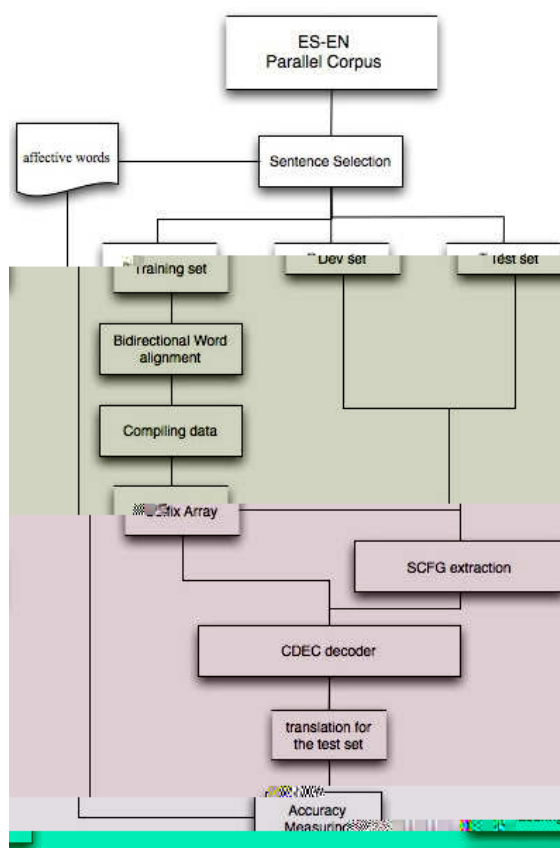
Some English words had an affective meaning for which multiple Spanish words had the same meaning. For example, ‘stunning’ (in the sense of “surprise”) corresponds to meanings of ‘asombroso’, ‘increíble’, and ‘sorprendente’. All these words have the potential to be used as translations, but the context or the register would determine which is best suited: ‘asombroso’ combines the idea of “surprise” with “admiration/awe”; ‘increíble’ (literally “unbelievable”) probably focuses more on the “surprise” notion, although it may be positive or negative. The most neutral of all is probably ‘sorprendente’ (literally, “surprising”); however, this is the one we consider the least likely to be used as a translation for ‘stunning’.

Equally, some Spanish words had an affective meaning for which multiple English words had the same meaning. The noun ‘asombro’ in Spanish combines the idea of “surprise” with “admiration/awe”. Depending on the context, this word can be used to translate the words ‘astonishment’, ‘awe’, or ‘wonder’.

Statistical Machine Translation

In order to study how SMT systems translate such affective words, we used the CDEC software as our MT system trained on both Europarl and subtitle corpora. CDEC is an implementation of a lexicalized synchronous content-free grammar (SCFG) model which is often referred to as Hiero. (SCFGs are a generalization of context-free grammars to generate strings in two languages.)

The flowchart presents the main elements of our MT system. For developing and testing the system we exclude two subset of training sentences that contain at least one affective word. Our development set contains 2000 and test set contains 1000 sentences.



Results

For testing, we first calculated the BLEU score: 0.31 on the development set and 0.30 on the test set. These results are comparable to other Spanish-English SMT systems. We also conducted a preliminary experiment designed to check how successful an SMT system can be in the translation of affective words. We matched the exact affective word from our reference English translation in our MT translation output for each Spanish test sentence. Accuracy is defined as number of words that appears on the MT translation of each sentence divided by the total number of affective words in the reference translation. Number of affective words in the test set is 1699 of which 1030 appear correctly in the output. For simplicity, we consider this preliminary experiment as the first step of designing new types of machine translation metrics that are able to consider affective words. One might

Discussion

This is ongoing work and we aim to introduce features specific to the translation of affective words and a new metric for evaluating quality of translation, that can be used for tuning.

Of particular interest is relating our affective MT work to what is been reported in the literature about disparities between the number of affective terms in different languages (cf. Pavlenko, 2008, p. 147), and developing solutions to this anticipated difficulty with translating affective words. Our manual translation of the English affect seed words confirms that Spanish has few-