Analysis of Translation Model Adaptation
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**MOTIVATIONAL QUESTION:**
Where and how does additional out-domain bitext help in the MT training pipeline?

**FINDINGS:**
1. Out-domain bitext has different effects on word alignment (changes phrases units & probabilities) vs. phrase extraction (also decrease OOV, increase translation options)
2. Sometimes it’s better to use out-domain data in only part of the training pipeline, e.g.:

   Medicine: if you have severe depression // si padece una depresión grave
   Parliament: economic depression in Europe //crisis económica en Europa

**ANALYSIS TECHNIQUE:**
Compare systems where out-domain data is inserted to partial or full training pipeline

**EXPERIMENT 1: TED TALKS**
Task: Improve TED translation (IN) using out-domain bitext (Europarl + News + UN corpora)
All systems use: Moses decoder, grow-diag-final-and, 4gram, MERT

Results:
- Using out-domain data for full pipeline improves. (22.04 → 22.66)
- Using it for Alignment Only improves even more! (22.04 → 23.28)

Detailed BLEU Analysis:
40% of correct ngrams unique to IN+IR(AlignOnly) are not present in IN phrase table → new in-domain phrases
68% of incorrect ngrams unique to IN+IR(FullPipeline) are not present in IN bitext → extraneous translation options

**EXPERIMENT 2: TEN LANGUAGE PAIRS**
Large-scale evaluation on 4 corpora and 10 language pairs: (da, de, el, es, fi, fr, it, nl, pt, sv) → en
All systems use: Moses decoder, grow-diag-final-and, 3gram, MERT

Mixed Results—Number of times a system is best or within 0.2 BLEU (out of 10 language pairs):