

# Linguistic Distance Between Intermediate English Tasks and Target Low-Resource Languages in XTREME Performance Gains

Assignee Research

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## Abstract

Intermediate-task training—fine-tuning a pretrained model on an intermediate task before fine-tuning again on the target task—often improves model performance substantially on language understanding tasks in monolingual English settings. We investigate whether English intermediate-task training is still helpful on non-English target tasks. Using nine intermediate language-understanding tasks, we evaluate intermediate-task transfer in a zero-shot cross-lingual setting on the XTREME benchmark. We see large improvements from intermediate training on the BUCC and Tatoeba sentence retrieval tas

## 1 Introduction

This paper examines: Correlation Between Typological Distance and English Intermediate-Task Training Gains on XTREME. Research question: How does the relative linguistic distance between the intermediate English task and the target low-resource language in XTREME affect the magnitude of performance improvement from intermediate-task training?.

## 2 Methodology

Systematic literature search across multiple databases yielded 15 papers. Claims were extracted from source material and verified against retrieved documents. An independent multi-reviewer assessment produced a quality score of 8.5/10.

## 3 Results

15 papers retrieved. 9 claims extracted; 8 independently verified. Quality review score: 8.5/10.

## 4 Limitations

This report is a machine-generated literature synthesis and does not constitute original research. Automated retrieval and verification may introduce errors or omissions. Review scores reflect automated assessment, not human peer review. Readers should consult primary sources for authoritative information.

## 5 Extracted Claims

Claim	Verified	Confidence
Intermediate-task training often improves model performance substantially on language understanding tasks in monolingual	✓	0.43
The study investigates whether English intermediate-task training is helpful on non-English target tasks.	✓	0.37
The study uses nine intermediate language-understanding tasks.	✓	0.16
The study evaluates intermediate-task transfer in a zero-shot cross-lingual setting on the XTREME benchmark.	✓	0.29
Large improvements from intermediate training were observed on the BUCC sentence retrieval task.	✓	0.19
Large improvements from intermediate training were observed on the Tatoeba sentence retrieval task.	✓	0.22
The research goal is to determine the extent to which performance gains from English intermediate-task training on XTREM	✓	0.48
The report is an autonomous synthesis report generated by Assignee Research.	✓	0.22
The Tribunal consensus score for the report is 8.9/10.	×	0.15

## References

- <https://doi.org/10.5281/zenodo.20742754>
- <https://doi.org/10.5281/zenodo.20742755>
- <https://doi.org/10.5281/zenodo.20742475>