NTCIR-15 We Want Web with CENTRE (WWW-3) Task Definition

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Introduction

- WWW-3 is an adhoc web search task for Chinese and English.
- All WWW-3 participating systems will process both WWW-2 (80) and WWW-3 (80) topic sets.
- Three run types for the English subtask:

REV (revived) runs: a top team from the WWW-2 task rerun two of their systems.

REP (replicated/reproduced) runs: other teams try to copy the above two WWW-2 systems.

NEW runs: regular adhoc and any other runs.

- The Chinese subtask will probably have NEW runs only (not finalised).

Why are we still doing web search?

- Web search is not a solved problem! Queries are poor representations of information needs; we're still doing keyword matching! We don't know what's NOT retrieved! We need to know what works and what doesn't, and keep improving!
- With the advent of deep learning approaches, we have even more open questions in web search than before!
- Progress should be monitored across years! WWW-3 will be directly compared to WWW-2!

What is CENTRE?

- Replicability: Team A reports results on Data D; Team B obtains the same results on D.
- Reproducibility: Team A reports results on Data D; Team B obtains similar results on another data D'.
- In reality, the above are hard to achieve. CENTRE = CLEF/NTCIR/TREC Reproduciblity was a meta-conference effort to address this.
- We had a CENTRE at TREC 2018, CLEF 2018, 2019, and NTCIR-14. It lives on as part of NTCIR-15 WWW-3.

Chinese subtask

- Input: 80 WWW-2 topics + 80 new WWW-3 topics
- Target corpus: SogouT-16 (same as WWW-2)
- Output: A TREC-style run file
- Researchers can also participate without indexing the corpus, by reranking the baseline runs provided by the organisers.
- As an external resource, a large query log Sogou-QCL can be utilised so that researchers can try intensive machine learning approaches
- For more info on the corpora and resources, see the WWW-2 overview paper:

http://research.nii.ac.jp/ntcir/workshop/OnlineProceedings14/pdf/ntcir/01-NTCIR14-OV-WWW-MaoJ.pdf

English subtask

- Input: 80 WWW-2 topics + 80 new WWW-3 topics
- Target corpus: clueweb12-B13 (same as WWW-2)
- Output: A TREC-style run file
- Researchers can also participate without indexing the corpus, by reranking the baseline runs provided by the organisers.
- Three run types: REV runs (Tsinghua University only), REP runs (any teams that want to try replicating/reproducing the Tsinghua runs), NEW runs (for those who want to try their own algorithms).

Target runs

- At NTCIR, CENTRE focuses on replicating/reproducing the effect of a method over another. At NTCIR-15, we chose the following pair to address a simple question: does a SOTA learning-to-rank run outperform BM25 regardless of experimental conditions (i.e., people and data)?
- A-run (advanced run)

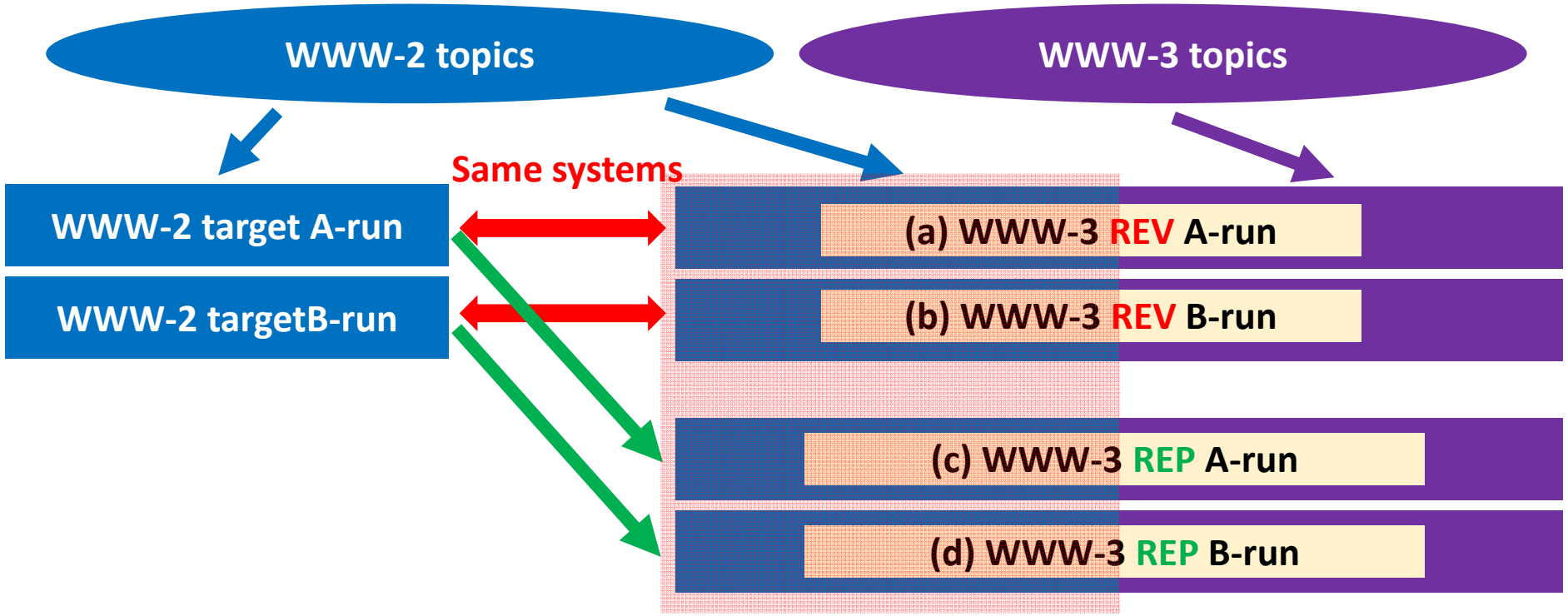
THUIR-E-CO-MAN-Base-2 (LambdaMART)

- B-run (baseline run)

THUIR-E-CO-PU-Base-4 (BM25)

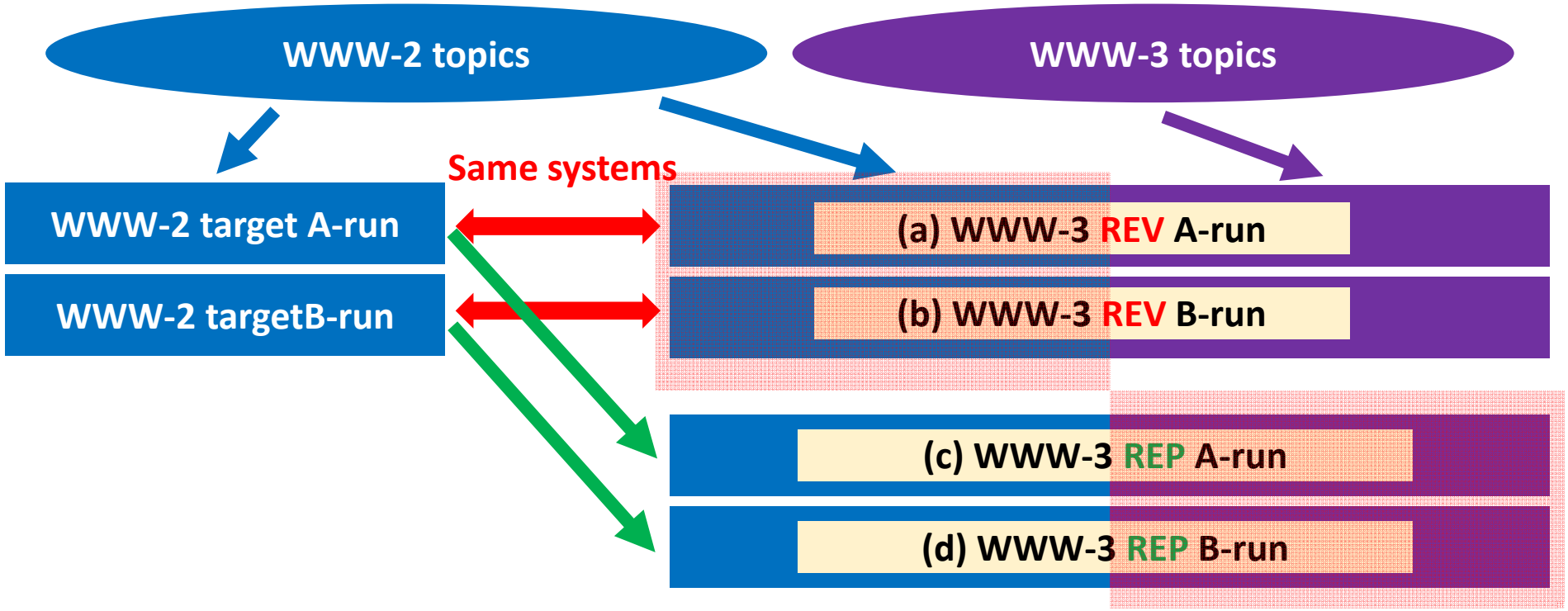
Details of these Tsinghua runs can be found in their NTCIR-14 paper:
http://research.nii.ac.jp/ntcir/workshop/OnlineProceedings14/pdf/ntcir/03-NTCIR14-WWW-ZhengY.pdf

Testing replicability



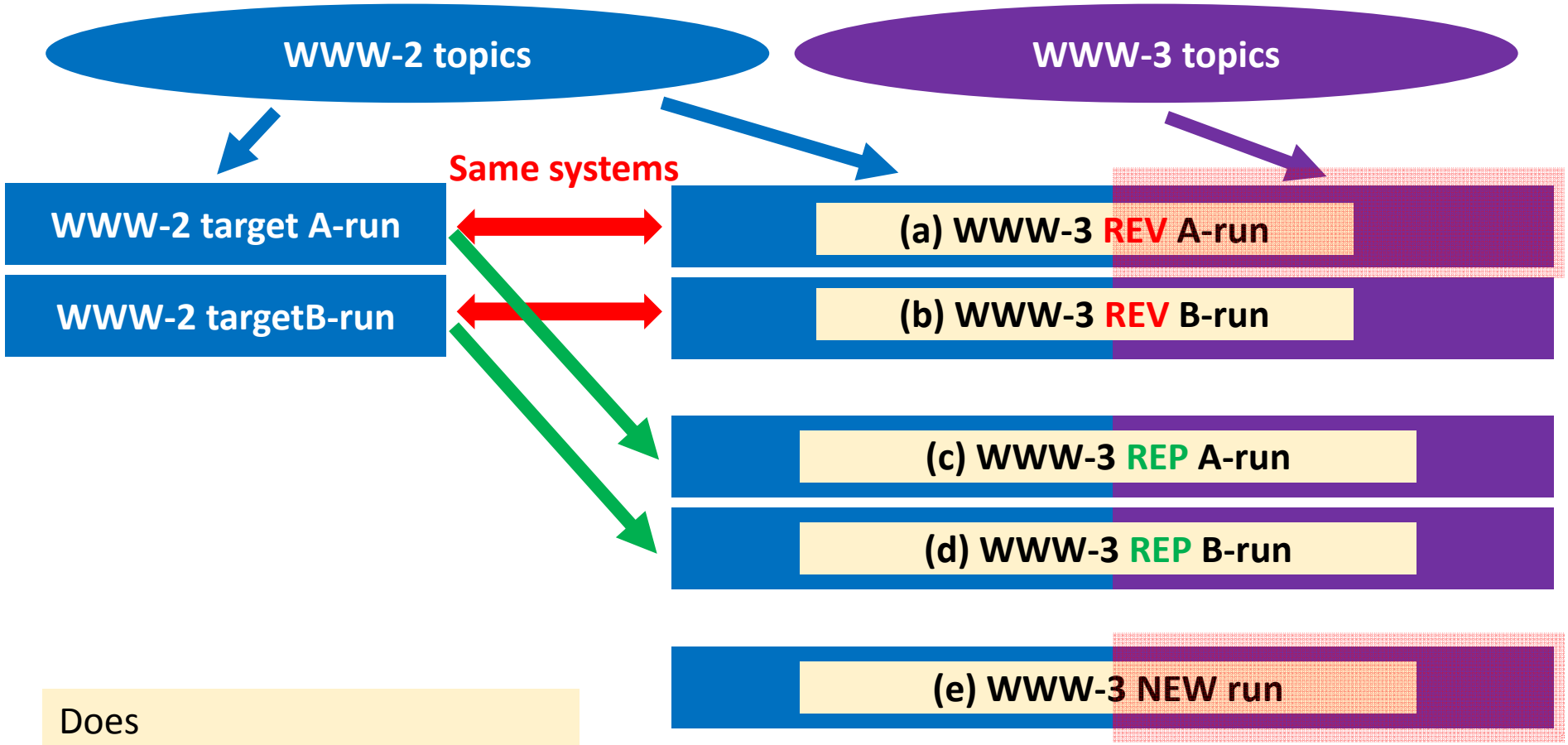
Does
(a)>(b) ⇒ (c)>(d)
hold on the WWW-2 topic set?

Testing reproducibility



Does
(a)>(b) on the WWW-2 topic set
⇒ (c)>(d) on the WWW-3 topic set
hold?

Measuring progress



Does
(e) > (a)
hold on the WWW-3 topic set?

Note that (e) had access to WWW-2 qrels, unlike (a)

Evaluation measures

- Retrieval effectiveness: nDCG@10, Q@10, ERR@10
- Replicability and reproducibility:

- Effect Ratio (for replicability and reproducibility)
- Correlation of per-topic Δ's (replicability)
- RMSE of per-topic Δ's (replicability)

For details, see the NTCIR-14 CENTRE overview:

http://research.nii.ac.jp/ntcir/workshop/OnlineProceedings14/pdf/ntcir/01-NTCIR14-OV-CENTRE-SakaiT.pdf

https://www.slideshare.net/TetsuyaSakai/ntcir14centreoverview