Comparing User-assisted and Automatic Query Translation

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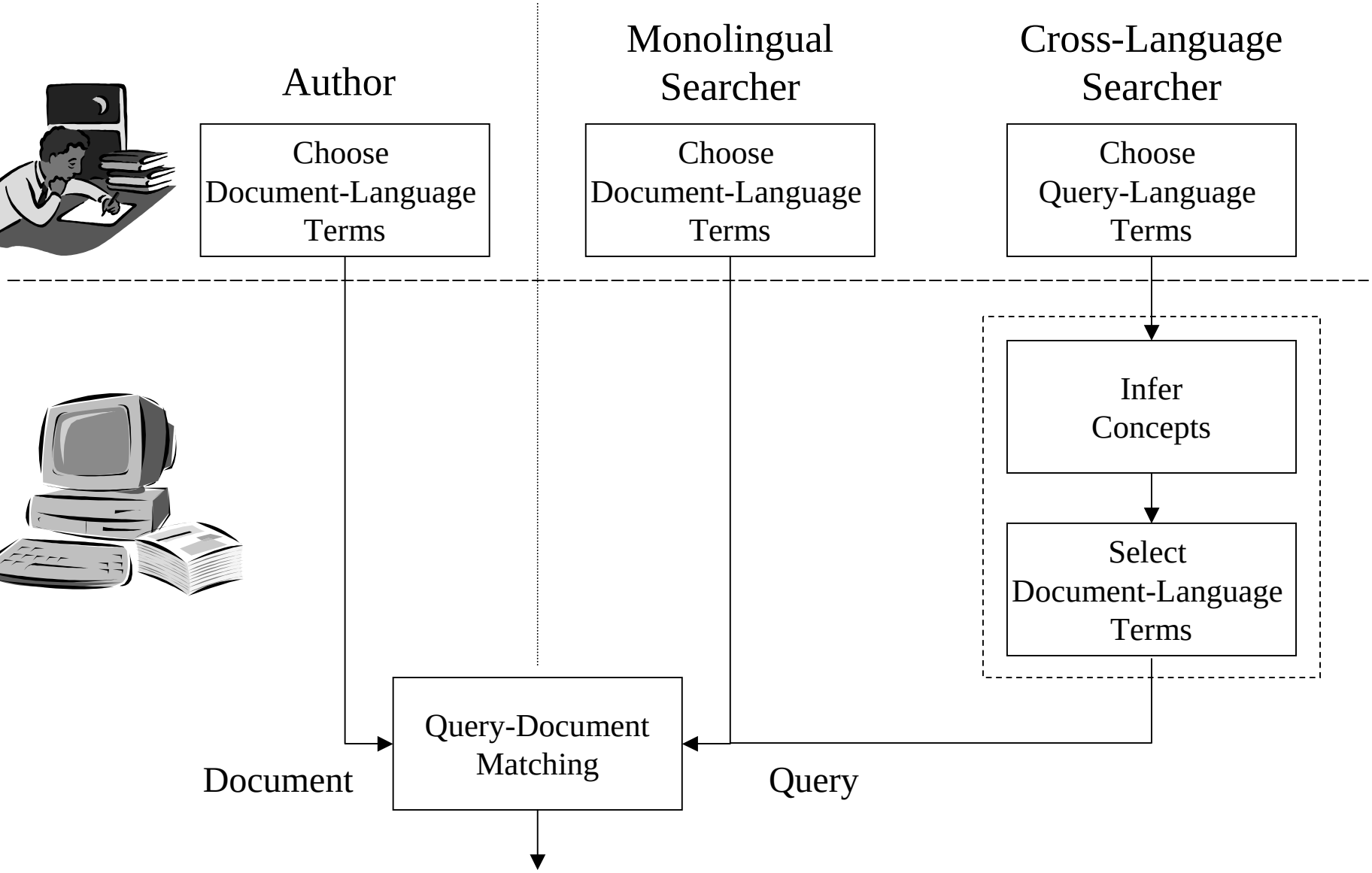
Maryland iCLEF 2002 Experiments

- 48 trials (12 participants)
  - Half with automatic query translation
  - Half with semi-automatic query translation
- 4 subjects searched Der Spiegel and SDA
  - 20-60 relevant documents for **4 topics**
- 8 subjects searched only Der Spiegel
  - 8-20 relevant documents for **3 topics**
    - Topic 3 had no relevant documents!

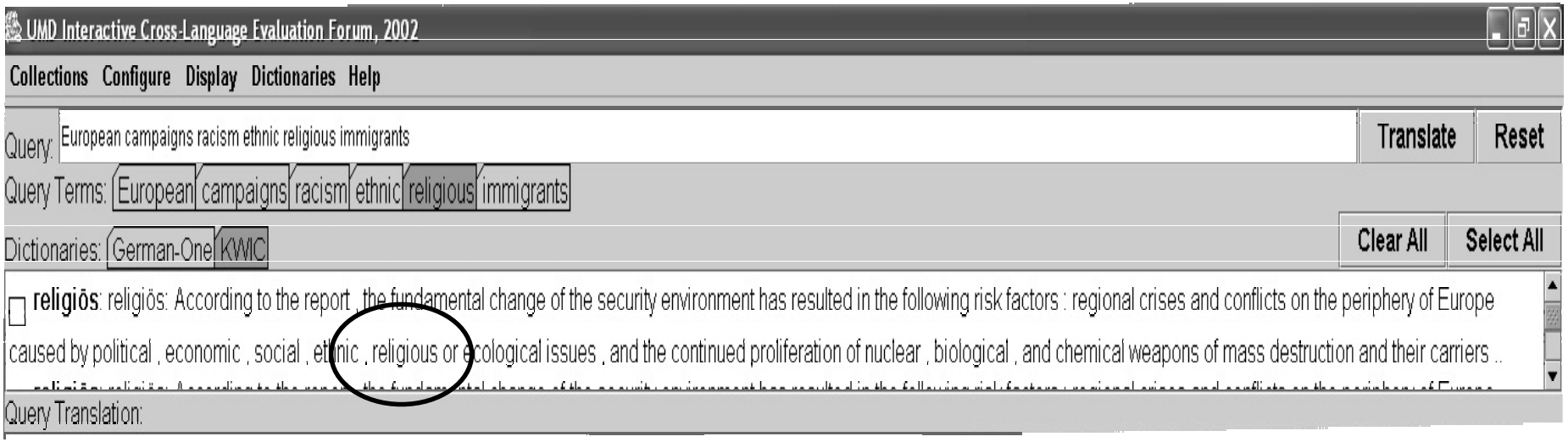
Supporting Query Formulation

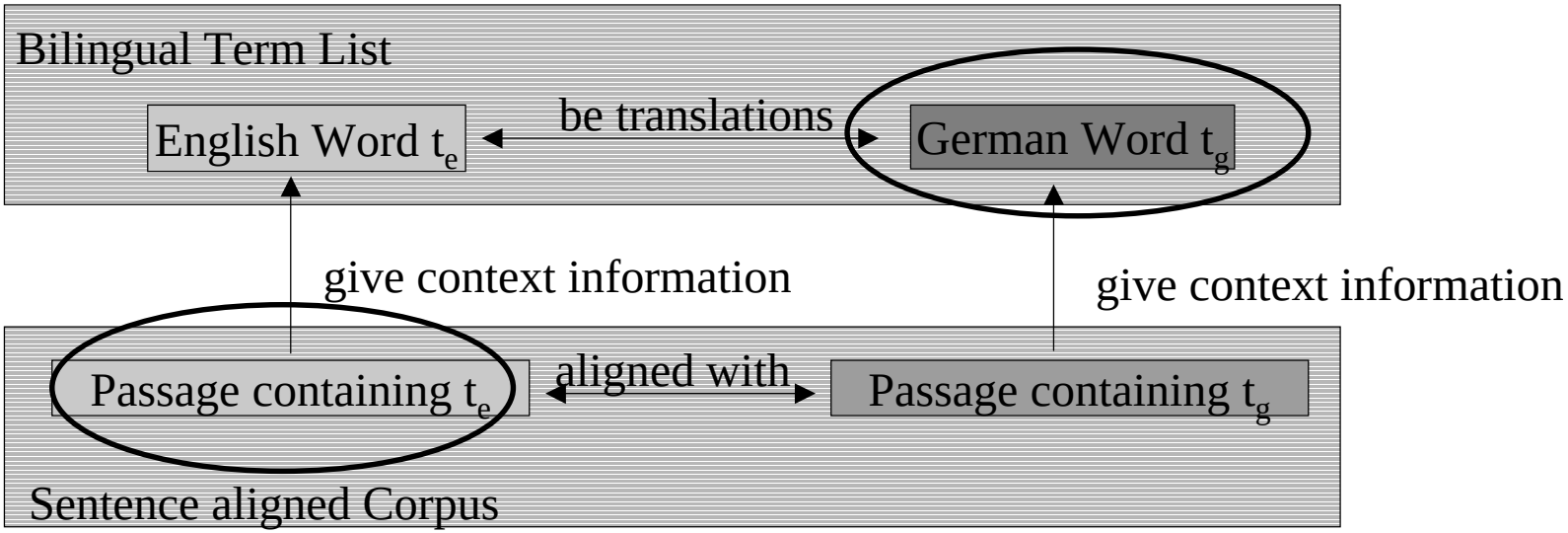


Back Translation

Words sharing a common translation (synonyms?)

KeyWord In Context (KWIC)





UMD Interactive Cross-Language Evaluation Forum, 2002

Collections Configure Display Dictionaries Help

Query: European campaigns racism ethnic religious immigrants | Translate | Reset

Query Terms: European campaigns racism ethnic religious immigrants

Dictionaries: German-One KWIC | Clear All | Select All

- gläubig: believer, believers, creditor, more religious, most religious
- religiös: religiously
- religiös: religiously
- religös:
- fromm: godly, pious, piously, piously, godlier
- gewissenhaft: sedulous, precise, conscientious, faithful, conscientiousness

Query Translation:

ethnic[(ethnisch: ethnical)]
religious[]
immigrants[(einwanderer: immigrant)]

Search

Search Results

1 Berne, 25 Ma Council of Eu
2 In the small ur sport B. V. St
3 Islamabad, 2 affairs of Pak
4 Berne, 31 Jar all parties are
5 Berne, 7 Sep intolerance. It
6 Geneva, 9 Ma the racingism
7 Zurich, 26 Oc imported, like
8 Yes. Allenspa couch pin (VS
9 St. Gallen, 26 walter Fischb
10 St. Gallen, 26 walter Fischb

1: Berne, 25 May (sda) the Upper House of Parliament supports the objectives that national campaign against racingism. It is ready, all possibilities too examine, like he Council of Europe the action of the working group that Youth

Rel: ? N S H
Con: ? L M H

Berne, 25 May (sda) the Upper House of Parliament supports the objectives that national campaign against racingism. It is ready, all possibilities too examine, like he Council of Europe the action of the working group that Youth federations (SAJV) and the forum against racingism financially support can, it means in the answer to inquiries of Nationalraetin Rosmarie Dormann (CVP/LU) and condition advice Fritz Schiesser (FDP/GL).

Hide

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committee " to the anti-racingism law " presented. Nearly
the European youth campaign against racingism and
st the racingism generally as well as the Antisemitismus,
dency have one in the statutes Incompatability rule
evallaz (VD), Cincera (ZH), Comby (VS), Cornaz (BS),
of physician and opponent of the Anti racingism of law
of physician and opponent of the Anti racingism of law

Previous | Next

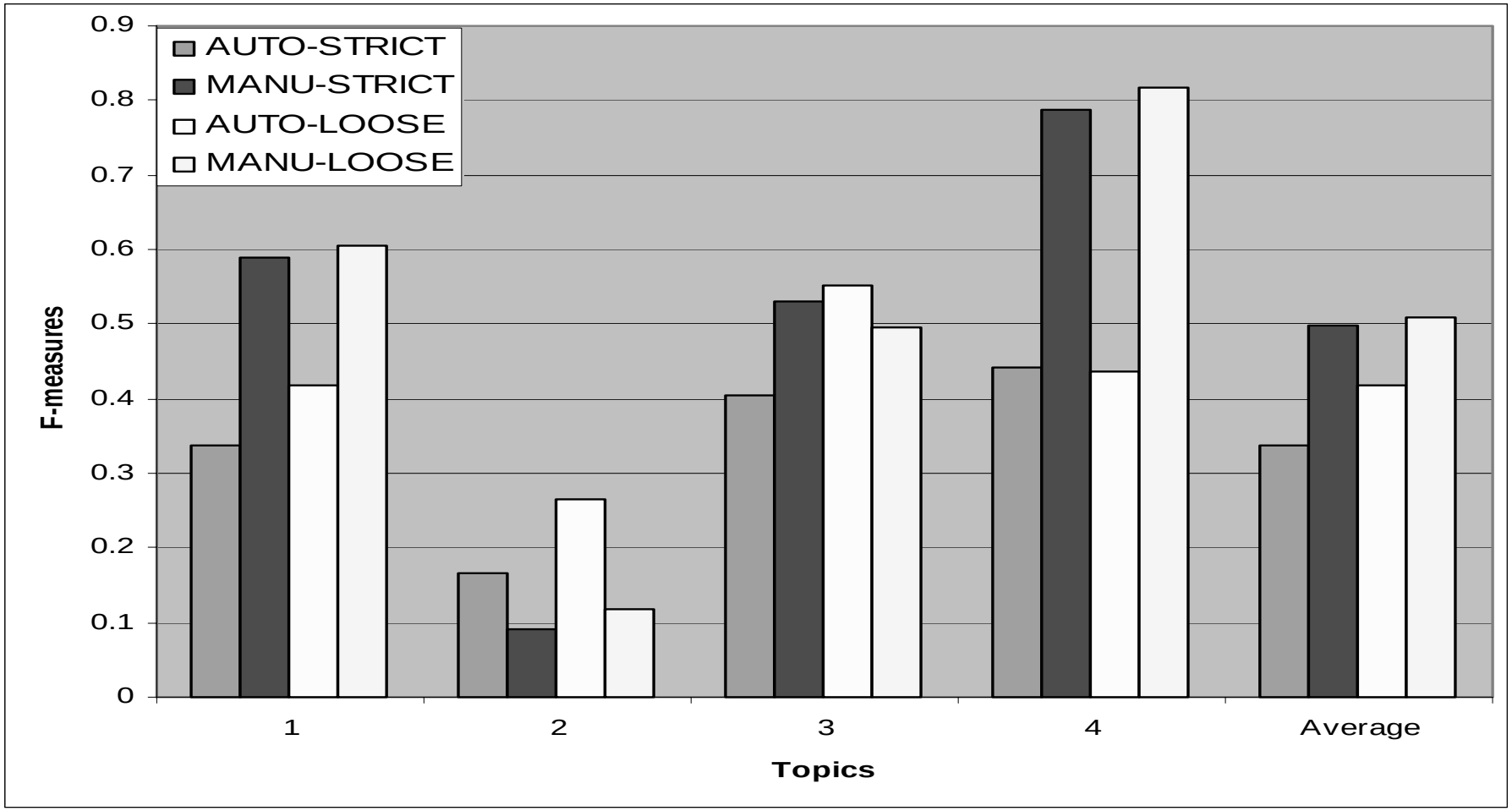
Searcher Profile

- Highly educated 10 held at least a masters degree
- Mature Average 31 years old (19 to 43)
- Mostly female 9 (3 males)

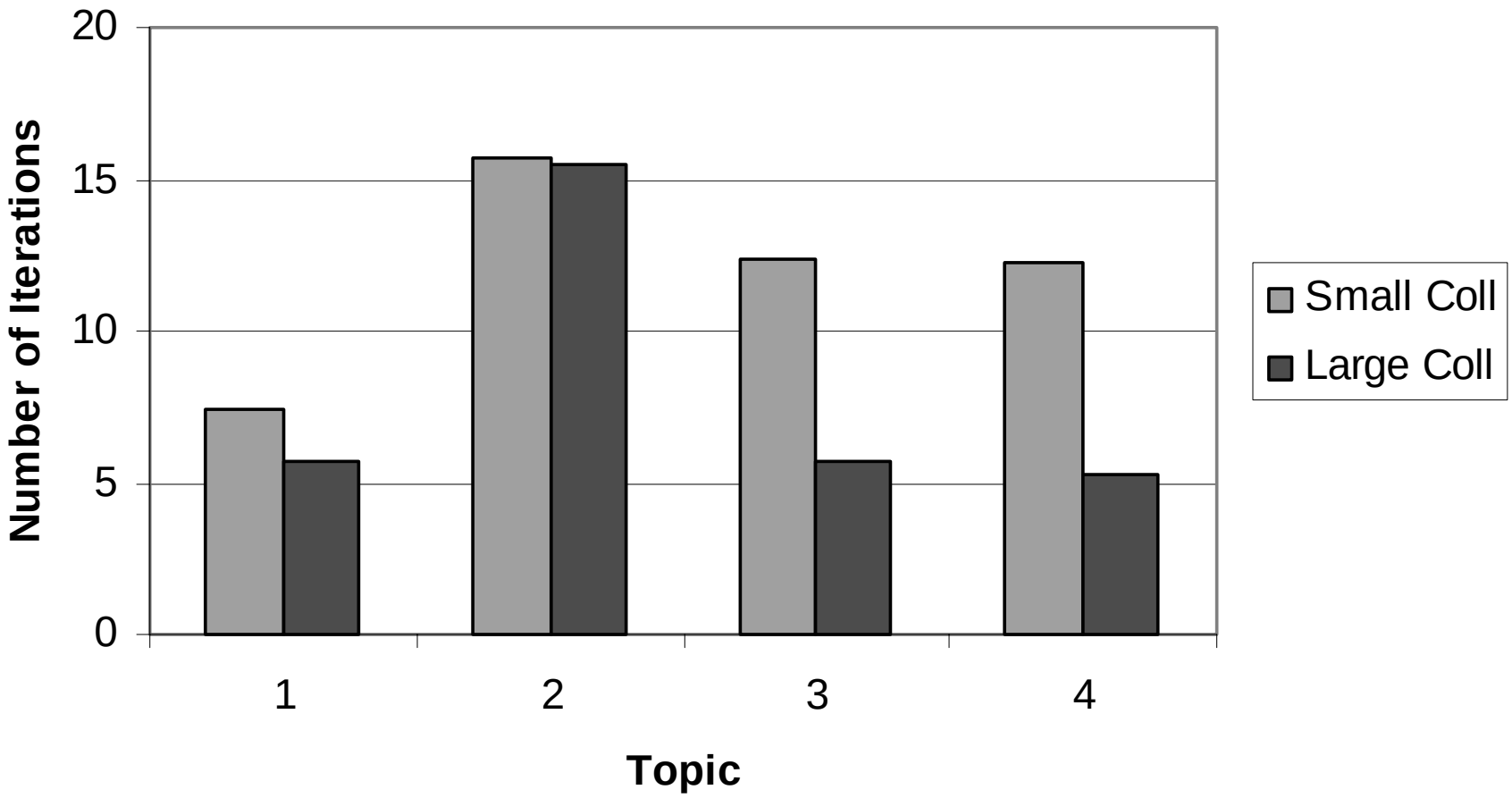
- Experienced searchers Average of 6 years experience

- Native English speaker All
- Poor German skills: 11 poor/none (1 good)

Large Collection: Official Results

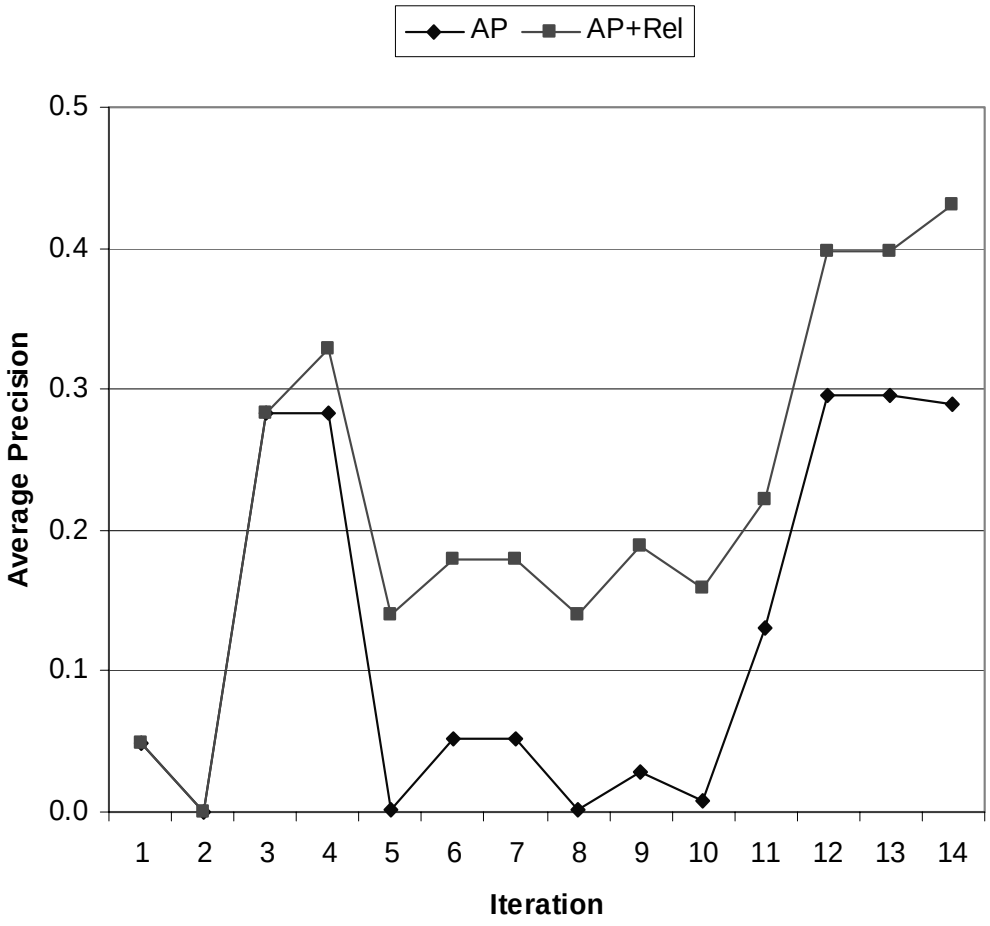


Query Reformulation



A Query Trajectory

1: defective genes
2: genetic diseases
3: gene diseases
4: (change translation selection)
5: genetic diseases
6: genetic diseases chromosome
7: (change translation selection)
8: (change translation selection)
9: (change translation selection)
10: genetic illness
11: chromosome illness
12: gene illness
13: (change translation selection)
14: defective gene



Subjective Evaluation

- Semi-automatic system:
  - Ability to select translations
- Automatic system:
  - Simpler / less user-involvement needed
  - Few functions / easier to learn and use
  - No control over translations
- Both systems:
  - Highlighting keywords helps
  - Untranslated/poorly-translated words
  - No Boolean or proximity operator

Next Steps

- Strategy-Action-Outcome model
  - Identify a strategy inventory
  - Develop a coding scheme for actions
  - Construct suitable outcome measures

- System development
  - Translation selection: Integrating multiple cues
  - Query reformulation: Transparent doc translation

Available Resources

- Instrumented interactive system
  - Java 2 server and client
  - Built to work with Inquery (Pirkola's method)
- Translation-based indexing
  - Dictionary-based translation at indexing time
  - Inline code integrated with MG

http://tides.umiacs.umd.edu