Investigating User Control to Mitigate Bias when Searching African Historical Data

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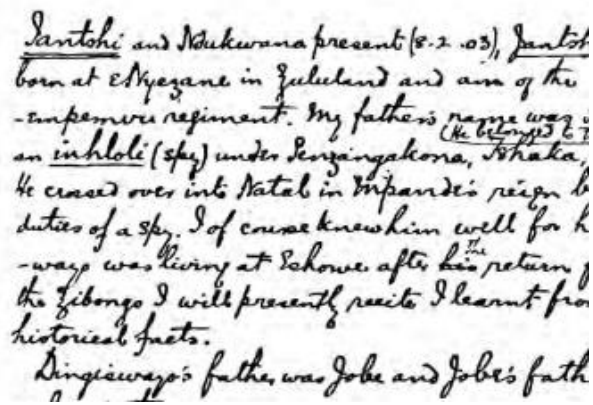
Slide count:

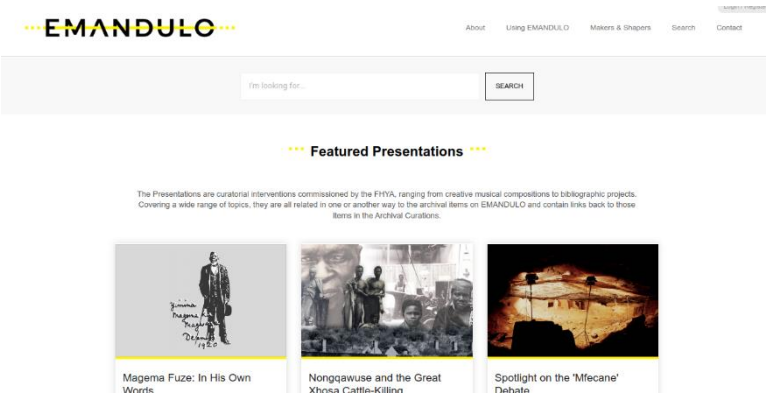
African Historical Data

- Southern African history/archaeology has more attention in recent years.
  - Post-colonization, post-Apartheid
- Early records from external parties (with inconsistencies/bias).
- Many new and ongoing archaeological/historical projects, leading to new archives.


Santshé and Ndukwana present (8.2.03), Santsh
born at eNyezane in Zululand and am of the
-mpemvu regiment. My father's name was
an inhlolí (spy) under Senzangakona, Shaka,
He crossed over into Natal in Mpande's reign
duties of a spy. I of course knew him well for
-ways was living at Ekowe after his return
the Zibongo I will presently recite I learnt fro
historical facts.
Dingiswayo's father was Jobe and Jobe's fath

Questions on Historical Data

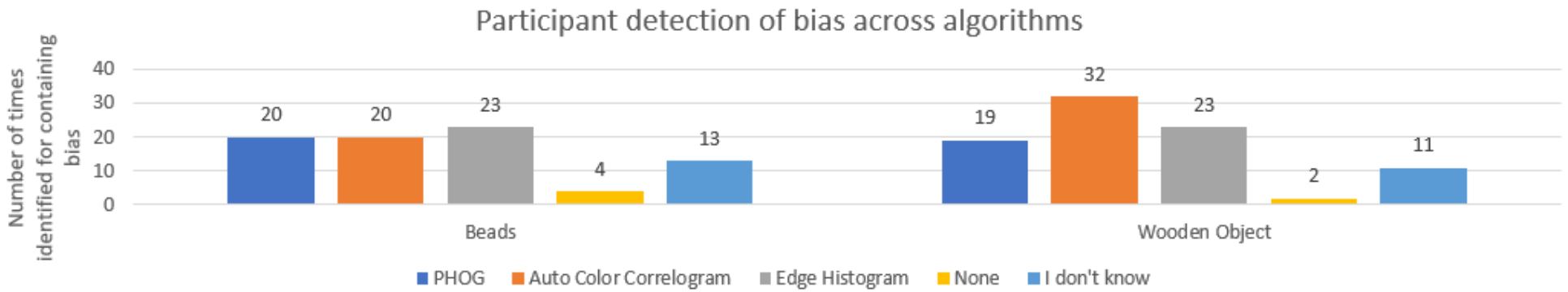
- Questions about Search:
  - Can users detect different levels of bias using different algorithms? 3 text processing, 3 image matching
  - Which algorithms do users prefer for controlling bias?
  - Can users control bias by controlling search algorithms?
- Dataset:
  - Five Hundred Year Archive
  - 1345 text documents, 5708 images

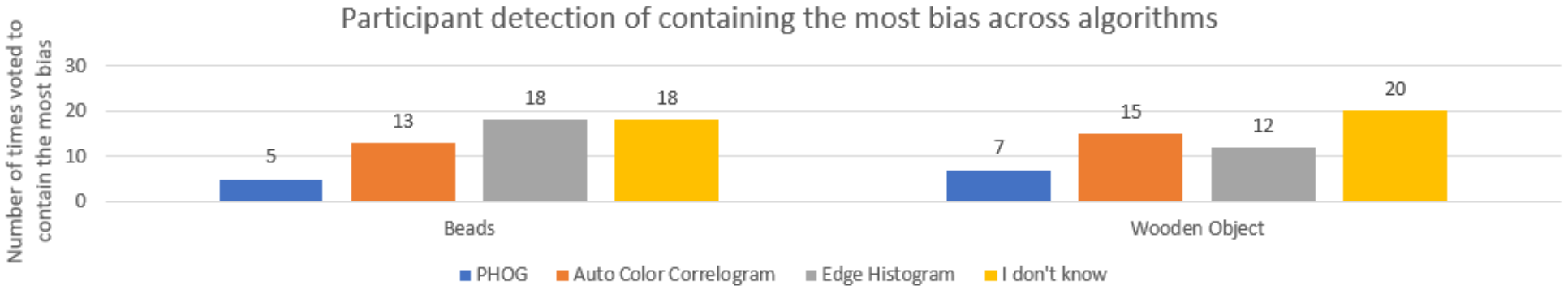


Experimental Procedure

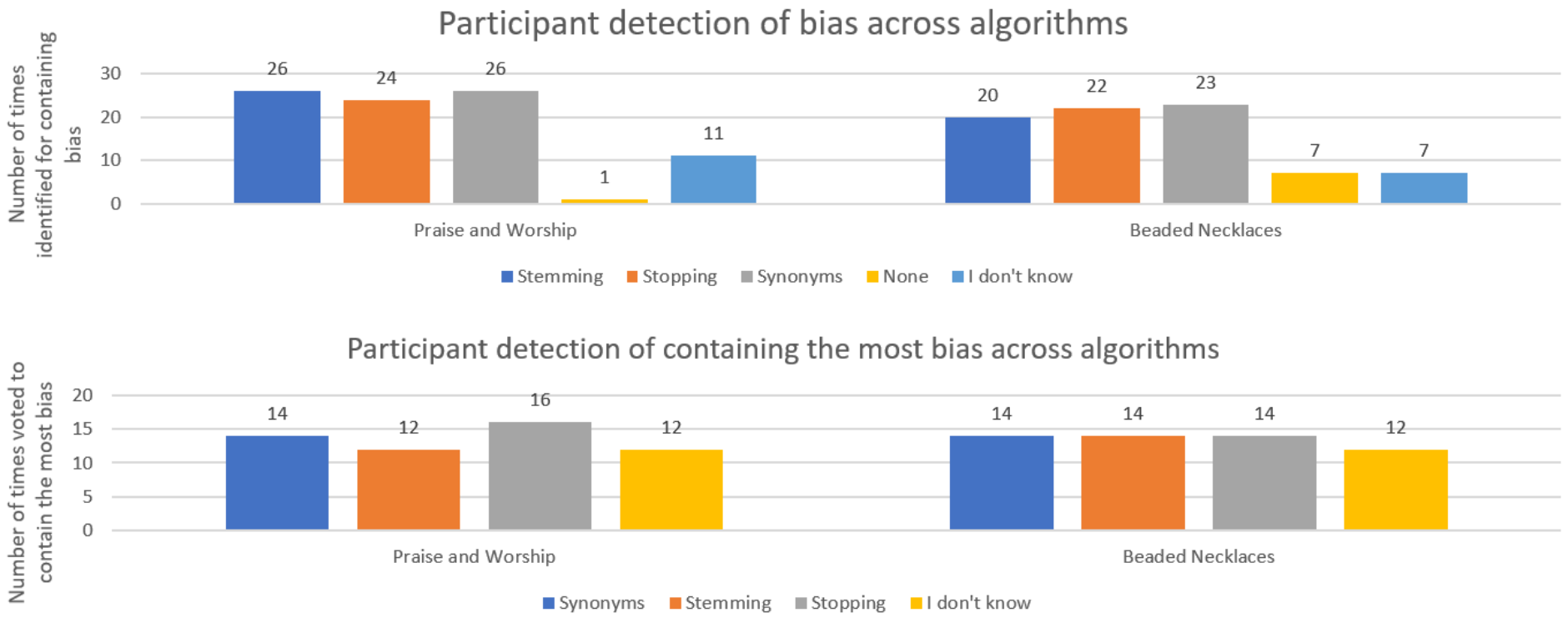
- Custom interface to compare pairwise results from algorithms, and state preferences.
- 54 participants, using blocked design.
- 2 text queries
  - “Praise and Worship”, “Beaded Necklace”
- 2 image queries
  - Picture of wooden object, Picture of beads
- 3 result formats
  - text, image, multimodal

Results – Detecting Bias in Image Algorithms

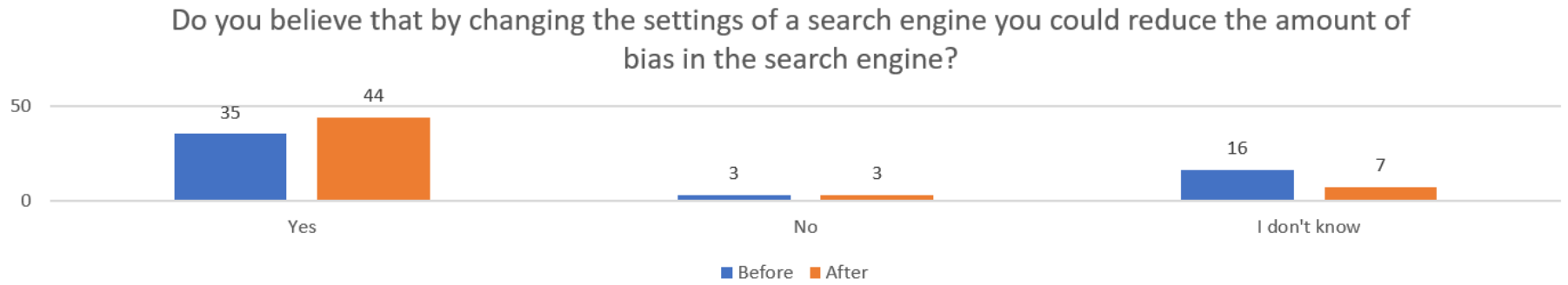


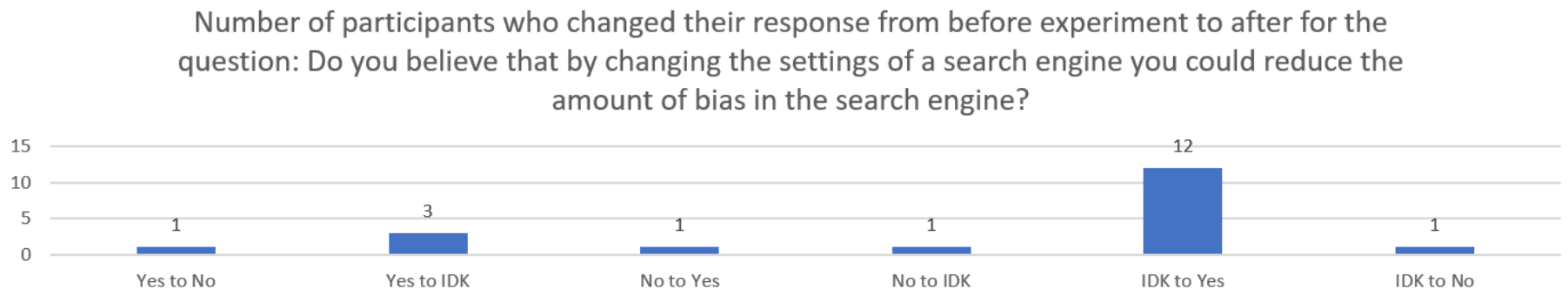


Results – Detecting Bias in Text Algorithms



Results – Controlling Bias





Conclusions

- Users did not have strong preferences for specific algorithms as the means to detect/reduce bias.

- Users preferred multimodal results.
- Users preferred image results for concrete queries and text results for abstract queries.

- After using the experimental system, more users believed algorithmic control of bias was possible!

Questions / Comments / Discussion

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