Vox Populi Annotation: Measuring Intensity of Ideological Perspectives by Aggregating Group Judgments

LREC, Marrakech, Morocco, May 28-30, 2008

Wei-Hao Lin and Alexander Hauptmann
Language Technologies Institute
School of Computer Science
Carnegie Mellon University
Goal: Annotating Intensity of Expressing Ideology at the Sentence Level
Sentence of High Intensity

- In the first weeks of the Intifada, for example, Palestinian public protests and civilian demonstrations were answered brutally by Israel, which killed tens of unarmed protesters.
Sentence of Low Intensity

- The Rhodes agreements of 1949 set them as the ceasefire lines between Israel and the Arab states.
Annotating Intensity is Hard

• Hard to define Strong, Medium, and Weak
• Hard to train annotators
• Hard to achieve high inter-rater agreement
Solution: Vox Populi Annotation

- Aggregate group judgments on a simple, forced binary question
- “Which side do you think the sentence was written from?”
Two Problems

- How many annotators are needed?
- Are these group judgments random?
Number of Annotators

• A statistical testing problem
• The more annotators, the finer difference in intensity we can discern.
Number of Annotators

![Graph showing the relationship between sample size and p value for different annotation rates. The graph includes data points for 0.6, 0.75, and 0.9 annotation rates. The x-axis represents the sample size, while the y-axis represents the p value. The graph demonstrates how the p value decreases with increasing sample size.]
Reliability

- Reliable = two groups agree with each other
- Measure Pearson’s correlation coefficient
Annotation Study

- 250 sentences from editorials on the Israeli-Palestinian conflict
- 18 participants
- “Do you think the sentence is written from the Israeli or Palestinian perspective?”
Distribution of Intensity
Reliability Assessment

![Graph showing correlation against group size with different markers representing Vox Populi, random 0.5, and random 0.99.](image-url)
Where to recruit many annotators?

- Amazon Mechanical Turk
- The ESP Game
- del.icio.us
- Google Image Labeler
Conclusion

• Vox Populi Annotation for hard annotation tasks
• Solution to two problems in VPA
• Positive correlation observed in an empirical annotation study