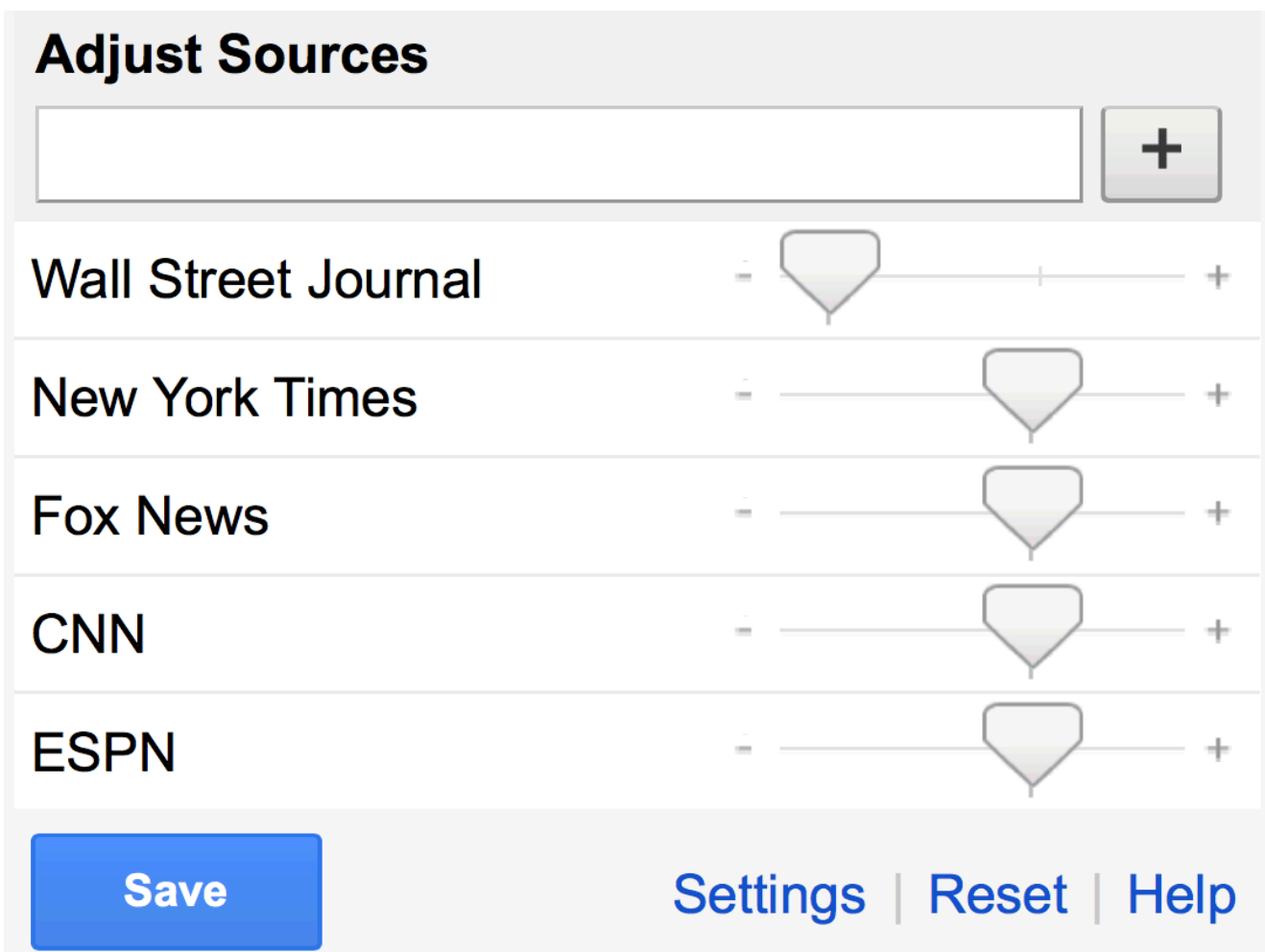


# Information Flow Experiments to detect News Personalization

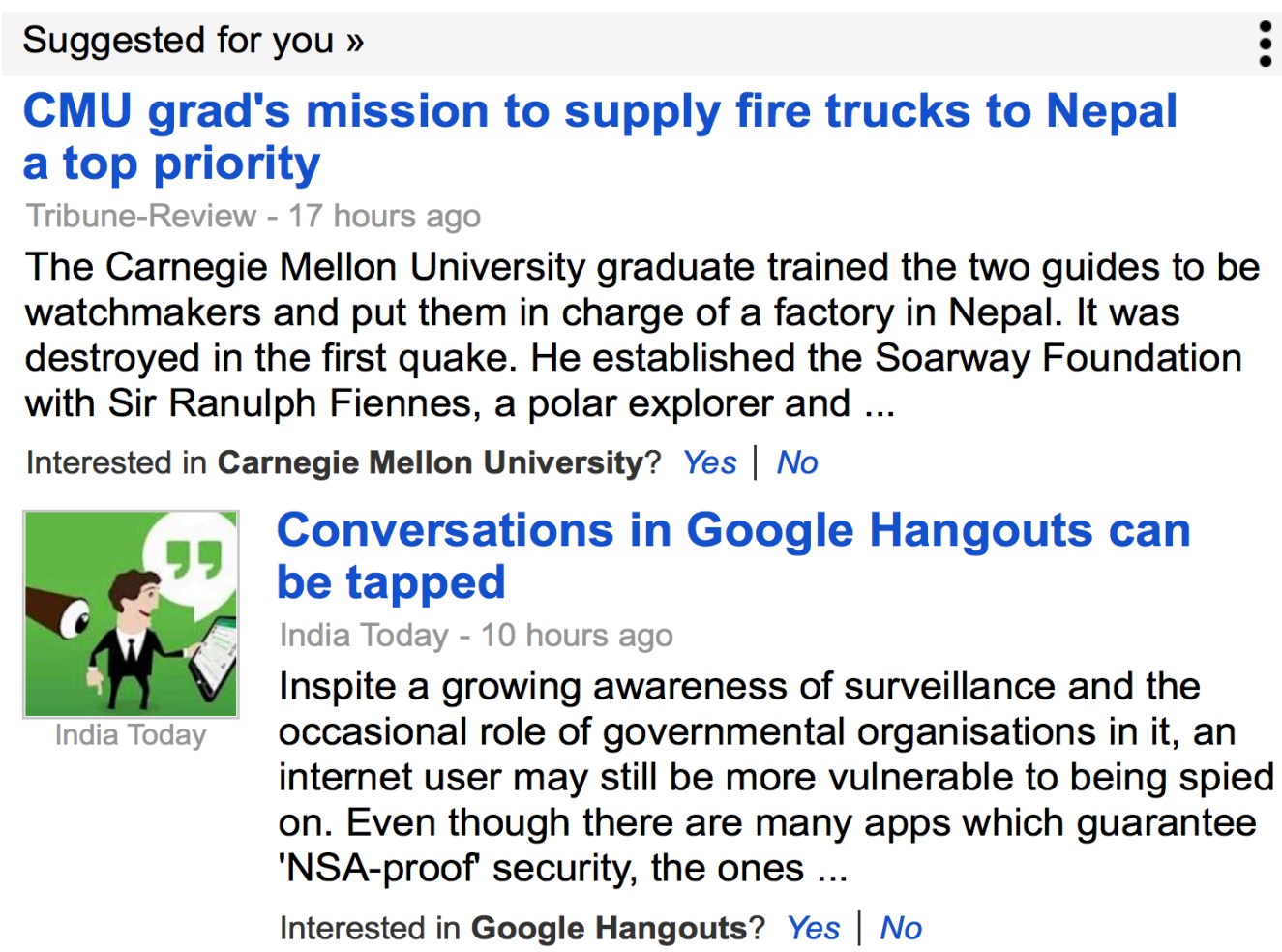
Amit Datta, Anupam Datta, Suman Jana<sup>1</sup>, Michael Tschantz\*

Carnegie Mellon University, <sup>1</sup>Stanford University, \*International Computer Science Institute

## News Personalization



Active Personalization:  
News personalization settings

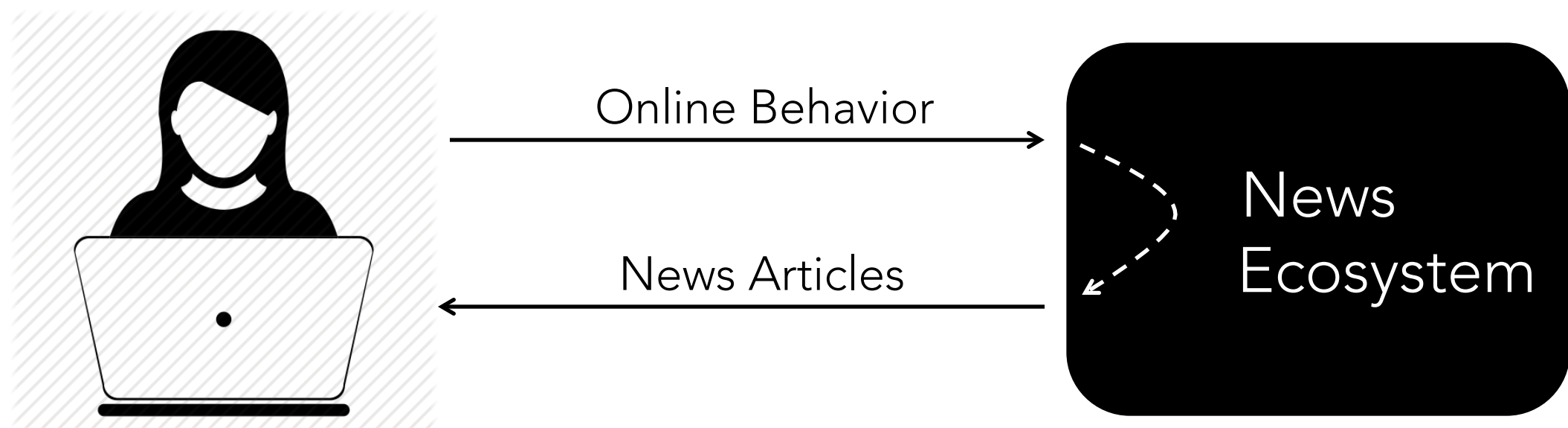


Expected Passive Personalization:  
Suggested Stories



Unexpected Passive Personalization:  
Filter Bubbles

## Information Flow Experiments

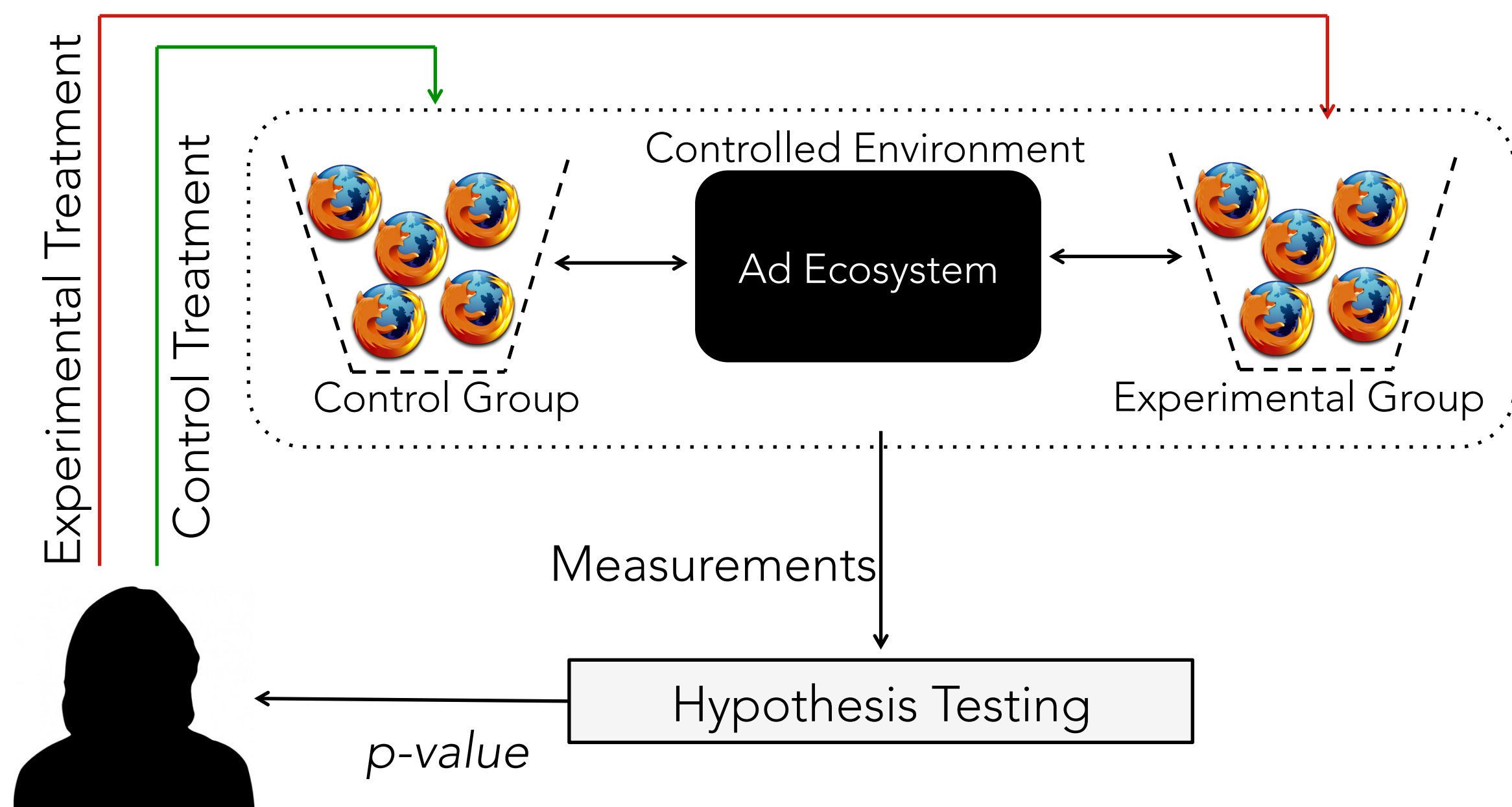


## Experiments

| Experiment                                | Length  | Articles | Effect |
|---|---------|----------|--------|
| Edit news personalization settings        | 14 hrs  | 145,542  | Yes    |
| Read news and perform search              | 164 hrs | -        | Yes    |
| Visit websites                            | 28 hrs  | 147,296  | No     |
| Visit websites while signed in            | 28 hrs  | 148,861  | No     |
| Edit interests on Ad Settings             | 22 hrs  | 145,055  | No     |
| Edit interests while signed in            | 30 hrs  | 110,704  | No     |
| Sign in to a fresh account                | 21 hrs  | 146,534  | No     |
| Sign in to an existing account            | 55 hrs  | 141,539  | No     |
| Sign in to separate existing accounts     | 15 hrs  | 146,224  | No     |
| Read news from an agency                  | 28 hrs  | 29,261   | No     |
| Read news from an agency while signed in  | 26 hrs  | 135,308  | No     |
| Read news from a category                 | 34 hrs  | 131,404  | No     |
| Read news from a category while signed in | 31 hrs  | 129,784  | No     |

## Methodology

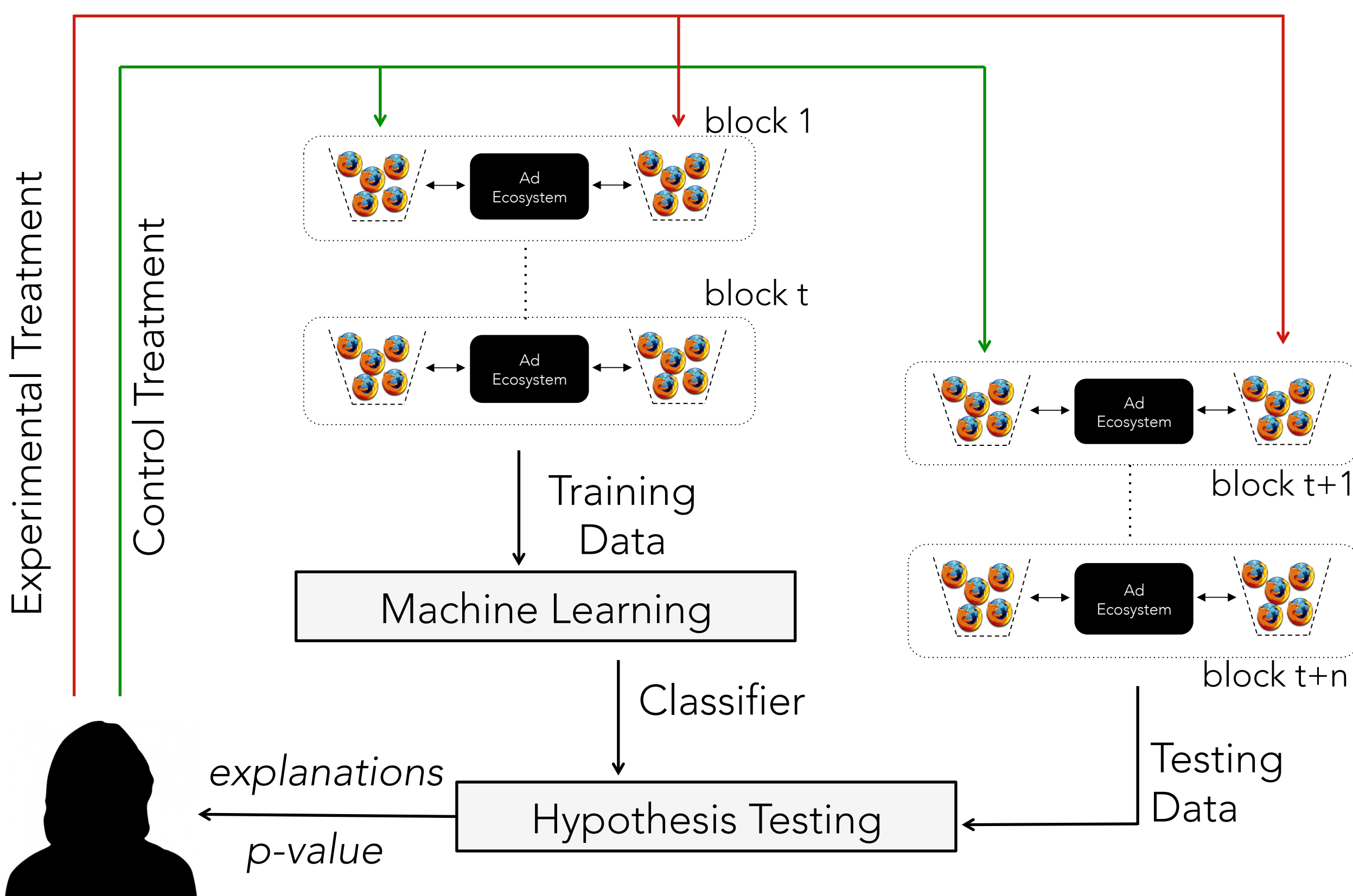
### Randomized Controlled Trials



## Conclusions

- We find active personalization.
- We find expected passive personalization.
- We do not find unexpected passive personalization.

### Blocked Randomized Controlled Trials



## References

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- S. Englehardt, C. Eubank, P. Zimmerman, D. Reisman, and A. Narayanan, "Web privacy measurement: Scientific principles, engi- neering platform, and new results," Preprint, 2014.