



Incentives in Human Computation & Crowdsourcing

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People are "lazy" and strategic

Report outcome of a private coin flip [Rob Miller, CI 2012]

70 heads, 29 tails, 1 other

Report outcome of a private die roll [Fischbacher & Heusi 2008]

Pay 1, 2, 3, 4, 5, or 0 CHF

One-shot: 27% 4, 35% 5, 6.5% 6

Repeated: 52% 5

ESP game

Game-theoretic analysis: players choose easy words [Jain & Parkes 2008,2012]



Incentives

Increasing payment improves participation but generally not quality [Ariely, 2009; Mason & Watts, 2009]

A result of fixed payment

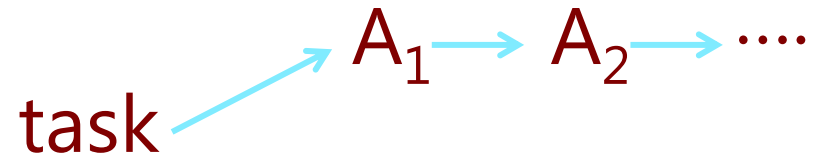
Anchoring effect

Shaw, Horton, D. Chen (2011) experimented with 14 different incentives in Mturk

Only two affected performance: Punishment Agreement and Bayesian Truth Serum

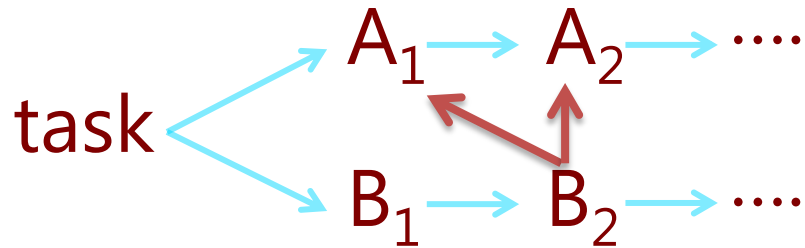
Iterative Workflow

Iterative workflow was proposed by Little, Chilton, Goldman, and Miller (2010).



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[Liem, Zhang, Chen 2011]

score by similarity
to recent answers
on other path

Result: 96.6% word accuracy for speech-to-text transcription



Challenges and Opportunities

Understanding incentives

A theory of design for human computation and crowdsourcing



Managing Programmers

Two important goals:

- Encourage employees to work hard
- Get accurate predictions about how long projects will take



Getting Employees to Work Hard

Principal-Agent Problem



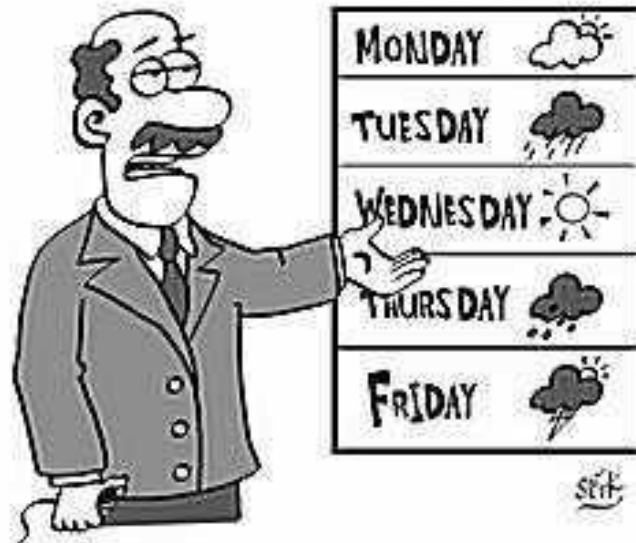
Effort cannot be directly observed
What do optimal contracts look like?

Getting Accurate Predictions

Proper Scoring Rules

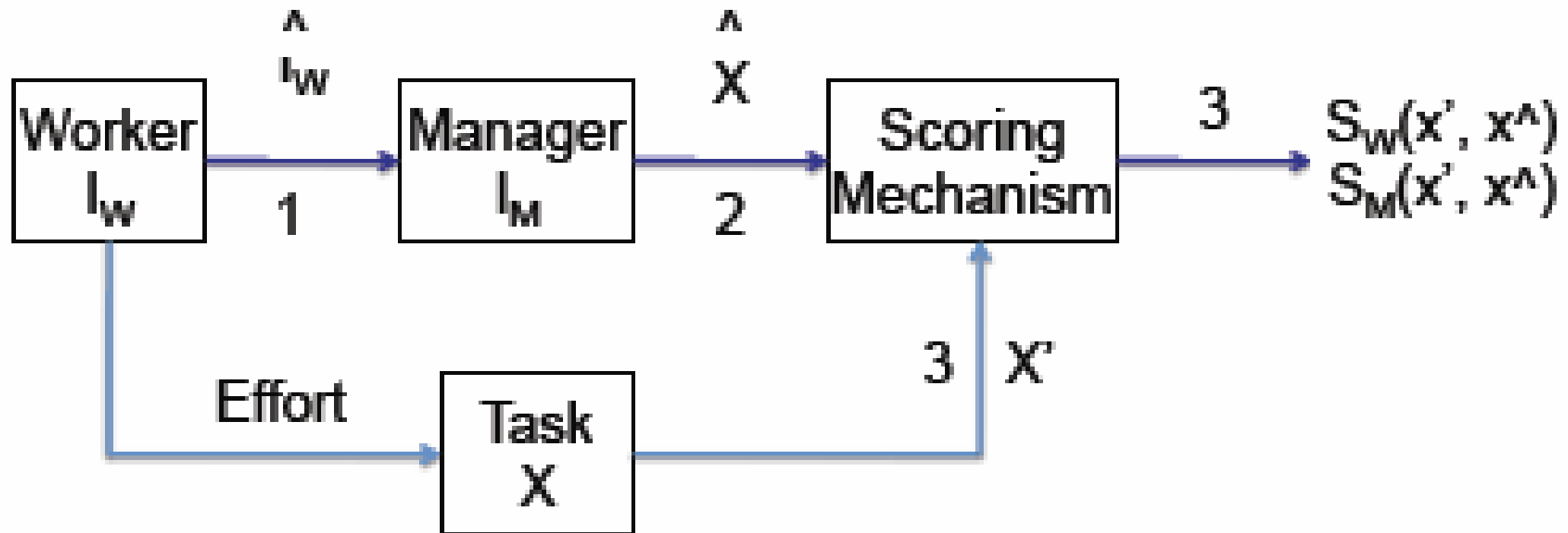
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Here's the 5 day forecast. To be honest, after tomorrow, your guess is as good as mine!



Characterized all scoring mechanisms that can achieve both. [Bacon, Chen, Kash, Parkes, Rao, and Sridharan, 2012]



Eliciting preference / information →
Eliciting effort / actions

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