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Eliciting Ratings

SI583: Recommender Systems

Business Models

- How is the recommendation site supported?

Business Models

- How is the recommendation site supported?
  - Value-addition attached to a purchase/circulation etc. service
  - Advertisements
  - Paid for by content owners
- Related question: How are raters reimbursed/motivated?

Recap: Sources of information

- Explicit ratings on a numeric/ 5-star/3-star etc. scale
- Explicit binary ratings (like/dislike)
- Implicit information, e.g.,
  - who bookmarked/linked to the item?
  - how many times was it viewed?
  - how many units were sold?
  - how long did users read the page?
- Item descriptions/features
- User profiles/preferences

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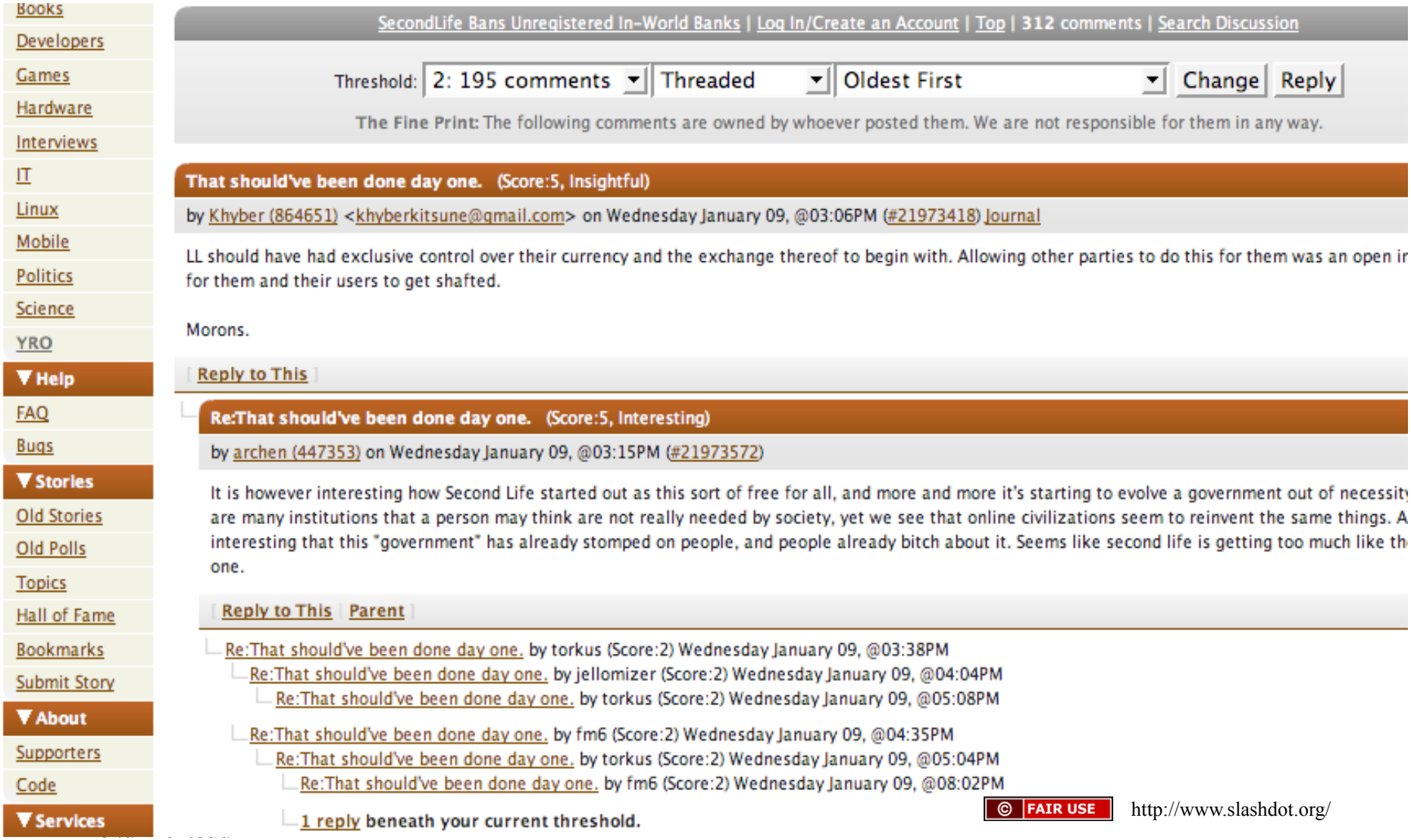
This class: Eliciting Contribution of Ratings/Feedback

Goal: Get users to rate items, *and rate the most useful items*

- Learning goals:
  - What factors seem to matter
  - How these are identified
  - Design implications of these results.

- Two sets of studies:
  - Slashdot commenting
  - MovieLens research on movie rating contribution

Slashdot Recommendations [Lampe and Resnick]



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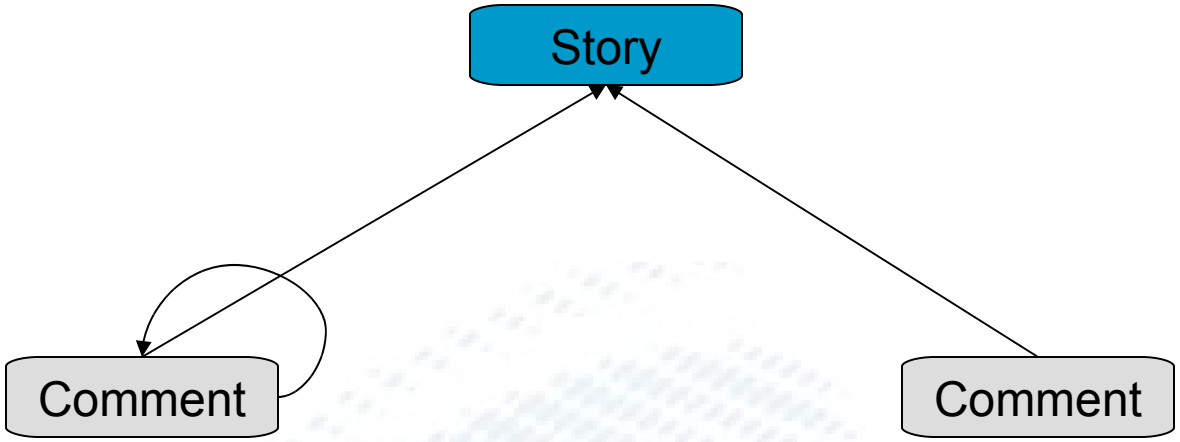
Slashdot Recommendations [Lampe and Resnick]

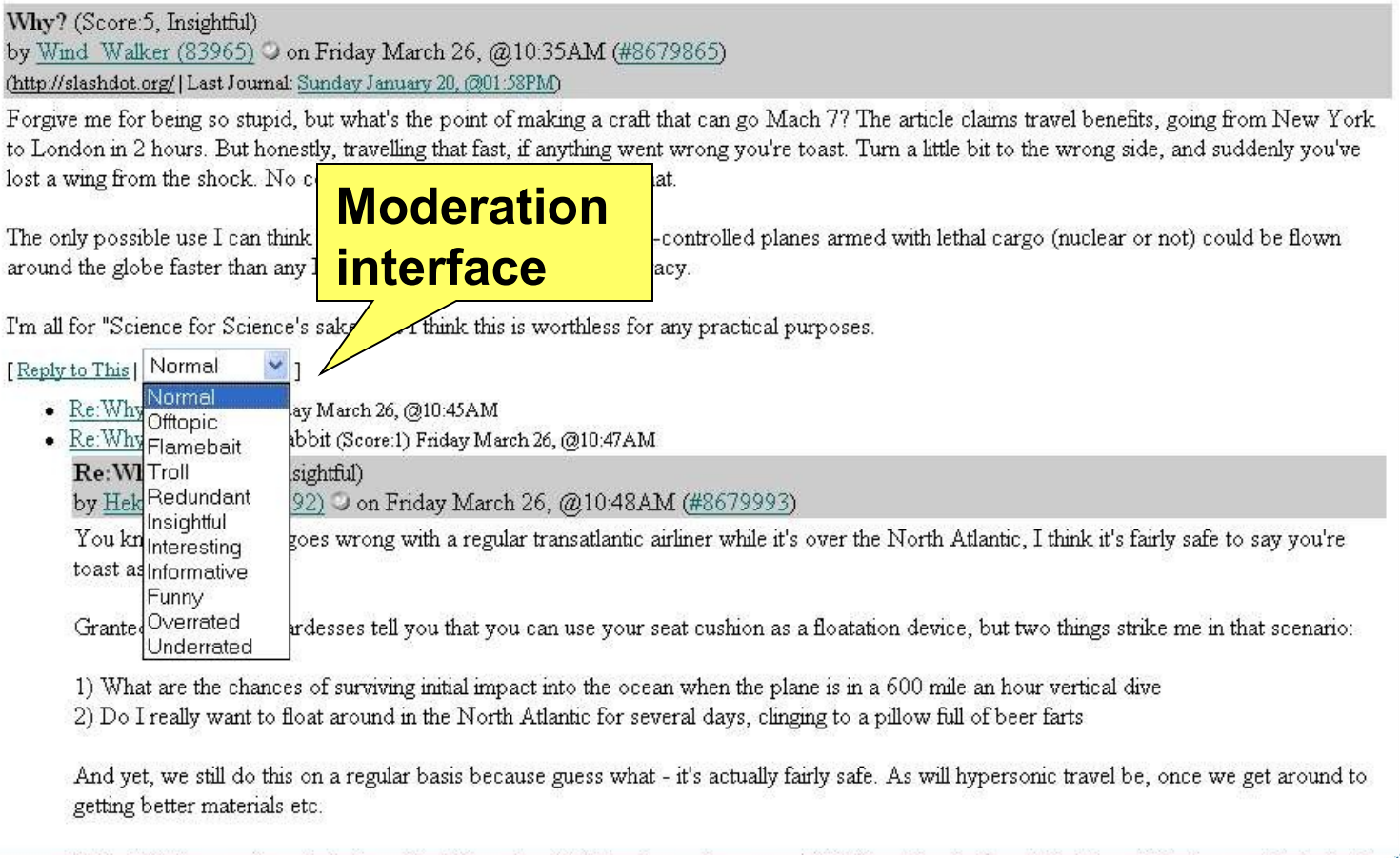
- What are the recommended items?
  What explicit feedback input is used?


Story
Comment
Comment

Evolution of Distributed Moderation

- Why?
  - Workload of the moderator (and delay)
  - Power of the moderator

Slashdot - moderation



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Slashdot – meta-moderation

Re:It's about time.
by - on Thursday March 18, @12:35PM (#8600408)

If the law were set up properly, you could sue a corporation and still deny it the rights of a person. Next.
"Cats think we are crazy because to them it looks like we put our fur on every morning". - G.G. Miller

Original Discussion: Microsoft and EU Talks End
Rating: **Interesting**.
This rating is **Unfair** ○ ◉ ○ **Fair** | See Context

Re:Uh oh
by - on Sunday March 21, @10:30PM (#8630970)

I don't see you charging money for that?

Which is a key difference... There are iTunes skins for windoze music players, and iPod skins as well.... they don't go after them because they don't charge. (Of course there's always a good chance you're just trying to get some free linkage, but I'll give you the benefit of the doubt....)

That said, I wonder how WinPLOSION (formerly called WinExpose) has survived this long.

Original Discussion: Apple Quashes pBop
Rating: **Informative**.
This rating is **Unfair** ○ ◉ ○ **Fair** | See Context

MacDailyNews?
by - on Sunday March 21, @10:56PM (#8631126)

What business does a Macintosh fan site have reporting on Windows viruses?

Bunch of children over there celebrating it.

Original Discussion: Nasty New Virus Variants
Rating: **Insightful**.
This rating is **Unfair** ○ ◉ ○ **Fair** | See Context

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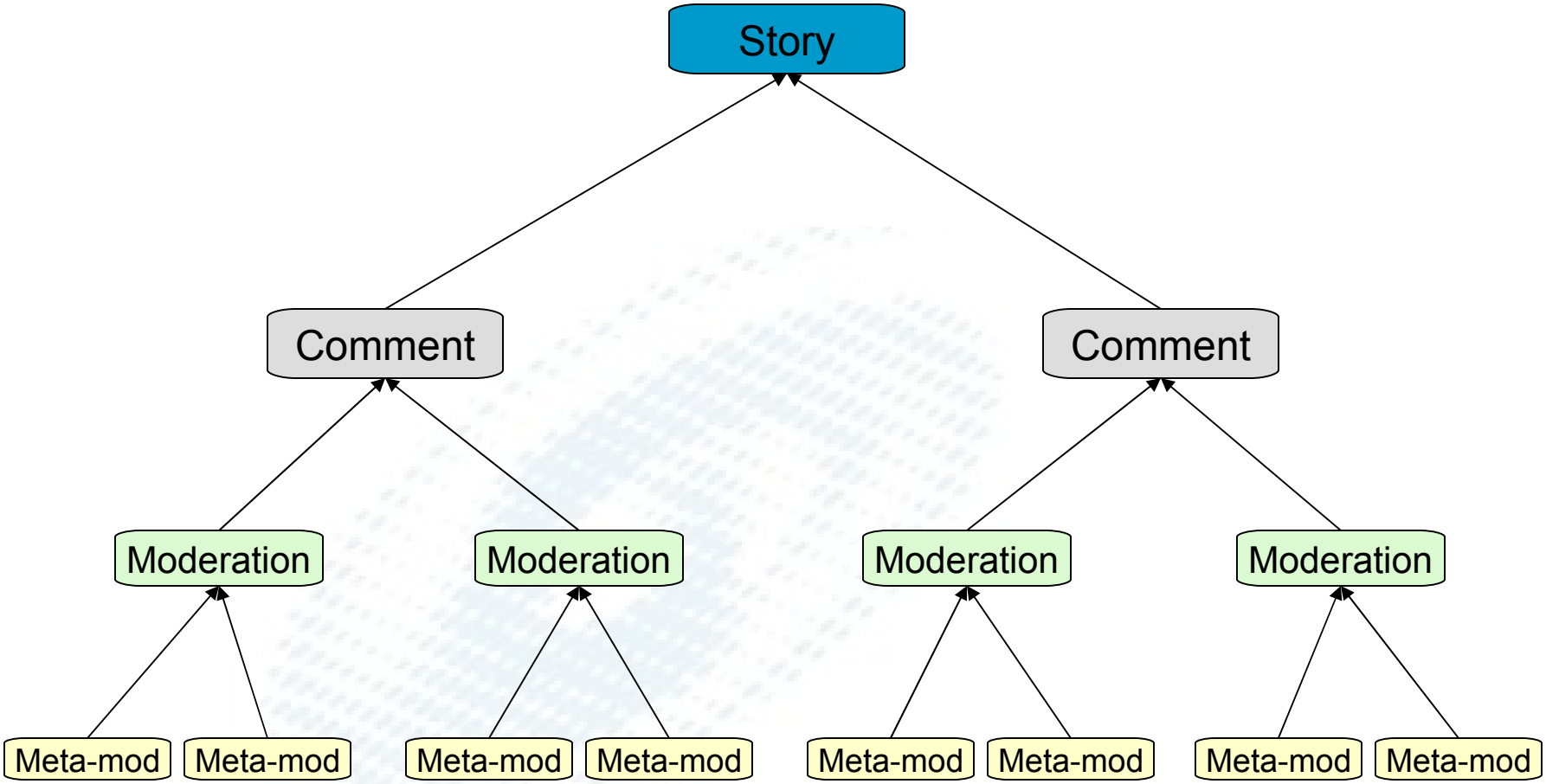
Story
Comment
Comment
Moderation
Moderation
Moderation
Moderation
Meta-mod
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The Workload is Distributed

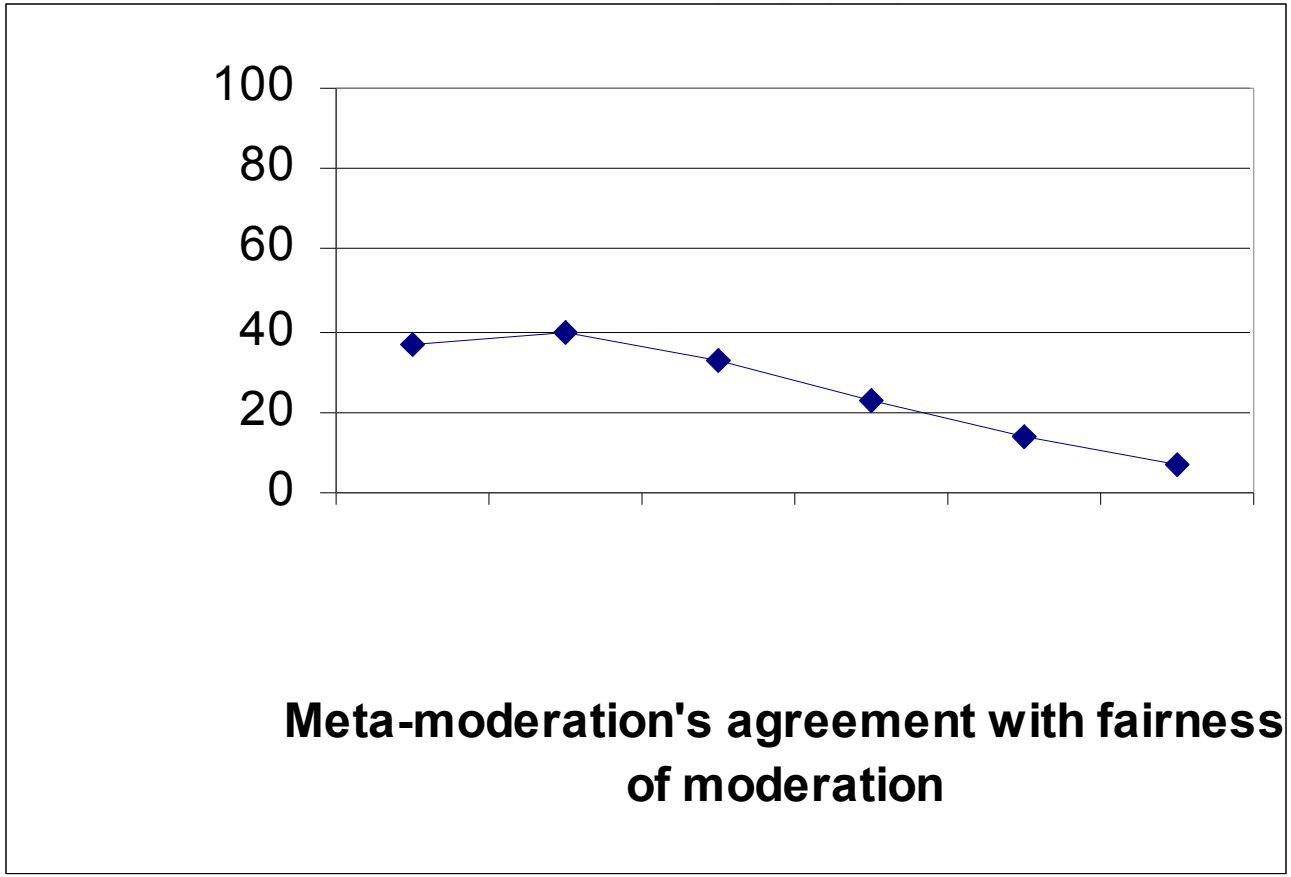
	Commented	Didn't
Moderated	16,286	7,783
Didn't	23,670	

Percentile	Time in minutes to reach a score >= 4 (n=47,474)	Time in minutes to reach a score <=0 (n=28,277)
10	19	2
20	37	5
30	61	9
40	98	16
50	148	28
60	227	49
70	350	90
80	554	190
90	932	517

Table 1: Time to reach benchmark scores.

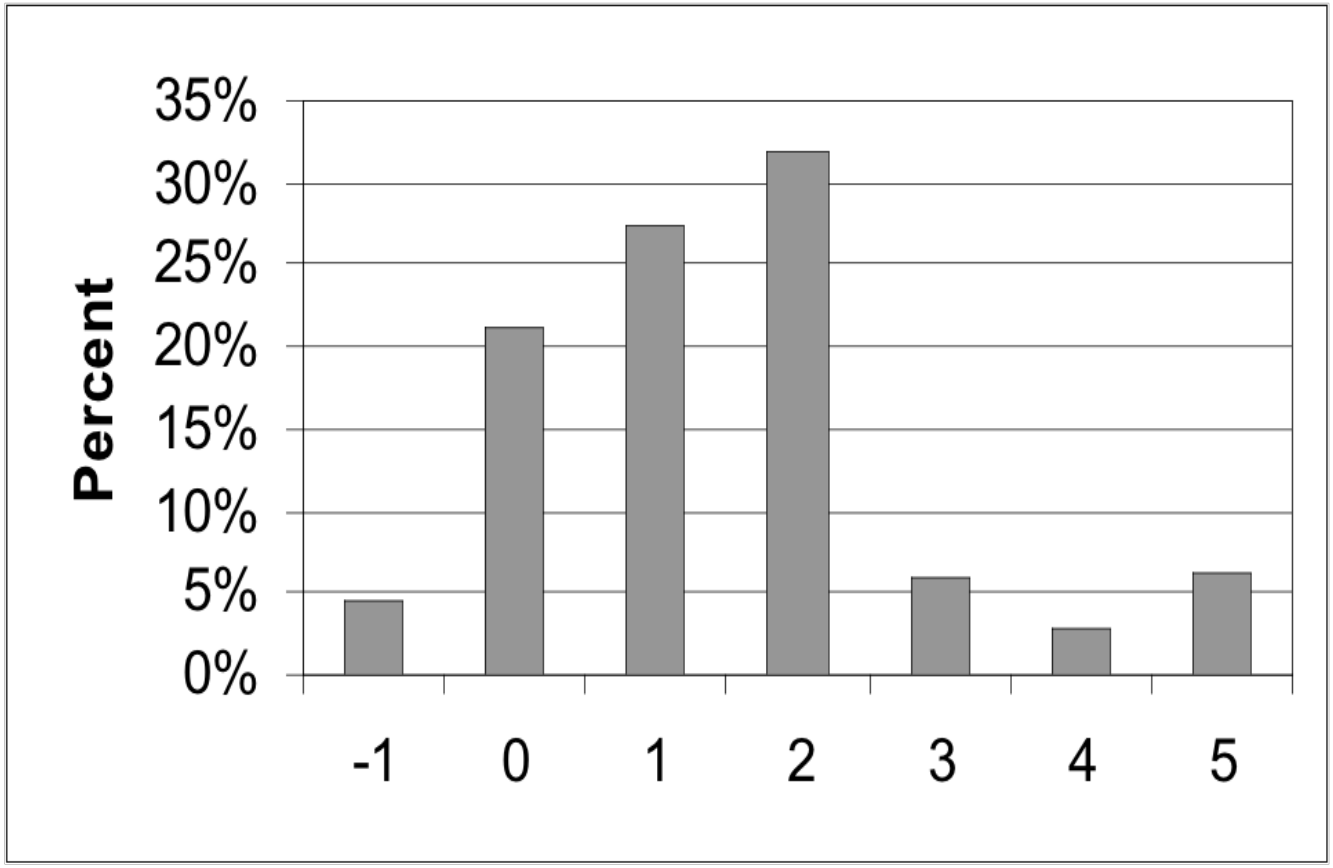
PD-INEL Source: Undetermined

Unfair Moderations Often Not Reversed



PD-INEL Source: Undetermined

Final Scores Distribution



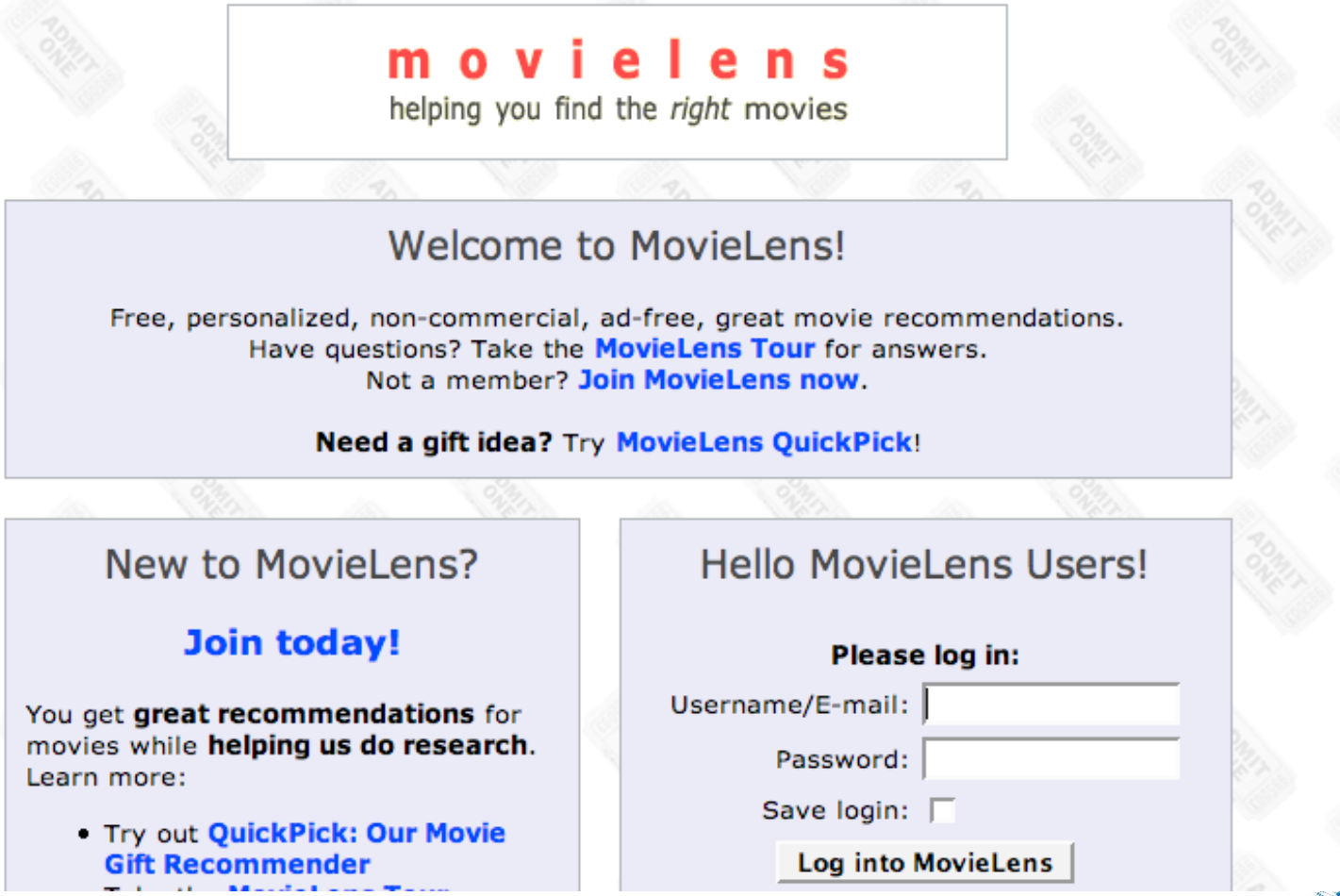
PD-INEL Source: Undetermined

Design Implications

- Useful “recommendations” can be very quickly be reached in a large community with similar norms
- Moderators exhibit selection biases which might cause “buried treasures”
- Significant contribution without any explicit incentive to contribute

Rating contribution on MovieLens

- Would you rate movies? Why?



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Modelling users' incentives to rate

- "An Economic Model of User Rating in an Online Recommender System", Harper, Li, Chen, and Konstan, Proceedings of User Modelling 2005.

- Potential reasons to rate:
  - Get better recommendations yourself
  - Rating fun
  - Non-rating fun (searching, browsing)

Methodology overview

- Use surveys and rating behavior measurements
- Find numeric "proxies" for qualitative ideas, e.g.,
  - a "fun score" derived from number of sessions per month, freq. of rating just-seen movies
  - a measure of "rareness of tastes"
- Construct a model that expresses overall benefit in terms of these attributes

  $rating\ benefit = a_1 * rec_quality + a_2 * fun_score + \ldots$

- Regression: Find best-fitting coefficients to match reported/estimated benefit

Some results of the regression

- Entering additional ratings has a significant cost
- Rating benefits through recommendation quality are not significant
- Fun is a significant factor influencing rating volume

Insights for Eliciting Ratings

- Making rating more entertaining/less costly could be most useful
- Users have different characteristics, so *personalized interfaces* might be helpful.

Impact of Social Information

- [Social Comparisons to Motivate Contributions to an Online Community, Harper, Lin, Chen, and Konstan]
- Starting point: how do users decide how much to rate?
- Social comparison theory asserts that decisions are often made by comparing to others
  - experimentally, making social norms visible can increase contributions

Experimental design

- An opt-in experiment on MovieLens
- Half the group gets a personalized email newsletter with social comparison information:
  - "You have rated __ movies; compared to others who joined at the same time, you have rated [less/more/about the same]..."
- Other half, control group, gets non-social information
- Measure changes in rating behavior after newsletter

Experiment Results

- All three types in the experimental group rated more than the control group – especially the below-average group.
- This suggests that social information about ratings can influence users' rating behavior
- Surveys report that most subjects did not mind receiving comparison information

Summary: Eliciting Ratings

- Fun/Intrinsic enjoyment often enough
- Social information useful
- Also potentially useful:
  - rewards in terms of a reputation, privilege, e.g. "karma points"
  - monetary rewards for contribution

    e.g., ePinions revenue shares