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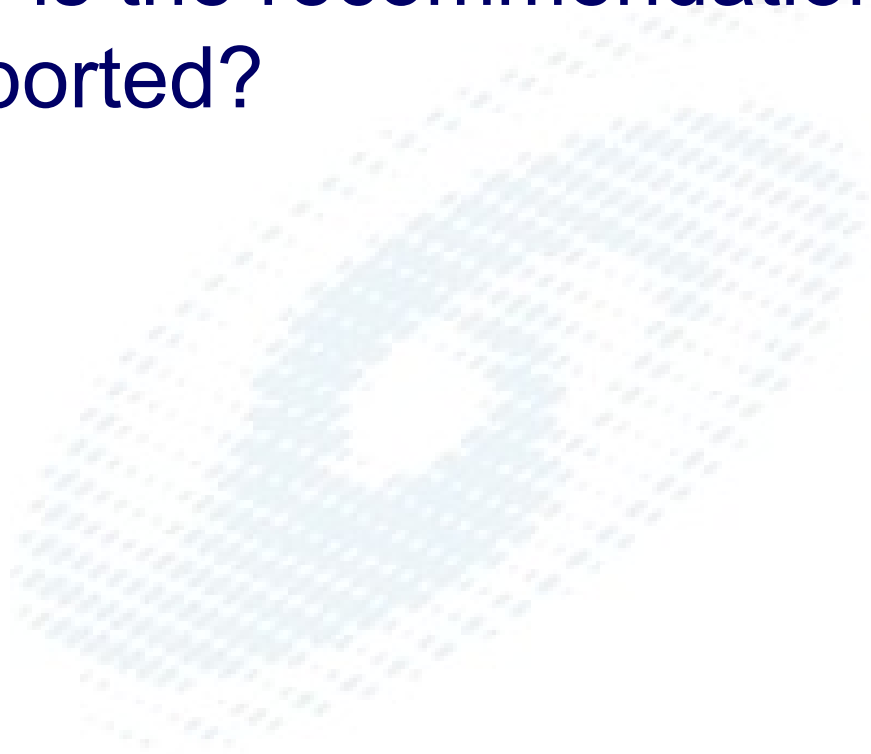
Eliciting Ratings

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]

[Books](#)
[Developers](#)
[Games](#)
[Hardware](#)
[Interviews](#)
[IT](#)
[Linux](#)
[Mobile](#)
[Politics](#)
[Science](#)
[YRO](#)
[▼ Help](#)
[FAQ](#)
[Bugs](#)
[▼ Stories](#)
[Old Stories](#)
[Old Polls](#)
[Topics](#)
[Hall of Fame](#)
[Bookmarks](#)
[Submit Story](#)
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[Supporters](#)
[Code](#)
[▼ Services](#)

[SecondLife Bans Unregistered In-World Banks](#) | [Log In/Create an Account](#) | [Top](#) | [312 comments](#) | [Search Discussion](#)

Threshold: | | | |

The Fine Print: The following comments are owned by whoever posted them. We are not responsible for them in any way.

That should've been done day one. (Score:5, Insightful)

by [Khyber \(864651\)](#) <khyberkitsune@gmail.com> on Wednesday January 09, @03:06PM (#21973418) [Journal](#)

LL should have had exclusive control over their currency and the exchange thereof to begin with. Allowing other parties to do this for them was an open ir for them and their users to get shafted.

Morons.

[Reply to This](#)

Re:That should've been done day one. (Score:5, Interesting)

by [archen \(447353\)](#) on Wednesday January 09, @03:15PM (#21973572)

It is however interesting how Second Life started out as this sort of free for all, and more and more it's starting to evolve a government out of necessity are many institutions that a person may think are not really needed by society, yet we see that online civilizations seem to reinvent the same things. A interesting that this "government" has already stomped on people, and people already bitch about it. Seems like second life is getting too much like th one.

[Reply to This](#) | [Parent](#)

↳ [Re:That should've been done day one.](#) by [torkus](#) (Score:2) Wednesday January 09, @03:38PM

↳ [Re:That should've been done day one.](#) by [jellomizer](#) (Score:2) Wednesday January 09, @04:04PM

↳ [Re:That should've been done day one.](#) by [torkus](#) (Score:2) Wednesday January 09, @05:08PM

↳ [Re:That should've been done day one.](#) by [fm6](#) (Score:2) Wednesday January 09, @04:35PM

↳ [Re:That should've been done day one.](#) by [torkus](#) (Score:2) Wednesday January 09, @05:04PM

↳ [Re:That should've been done day one.](#) by [fm6](#) (Score:2) Wednesday January 09, @08:02PM

↳ [1 reply](#) beneath your current threshold.

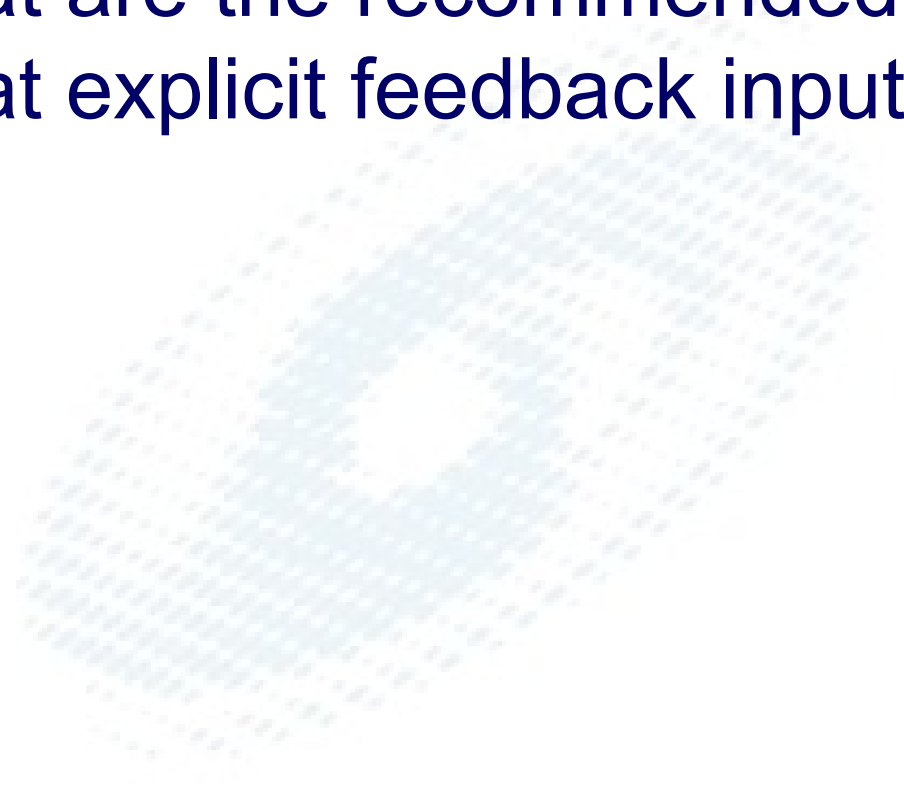


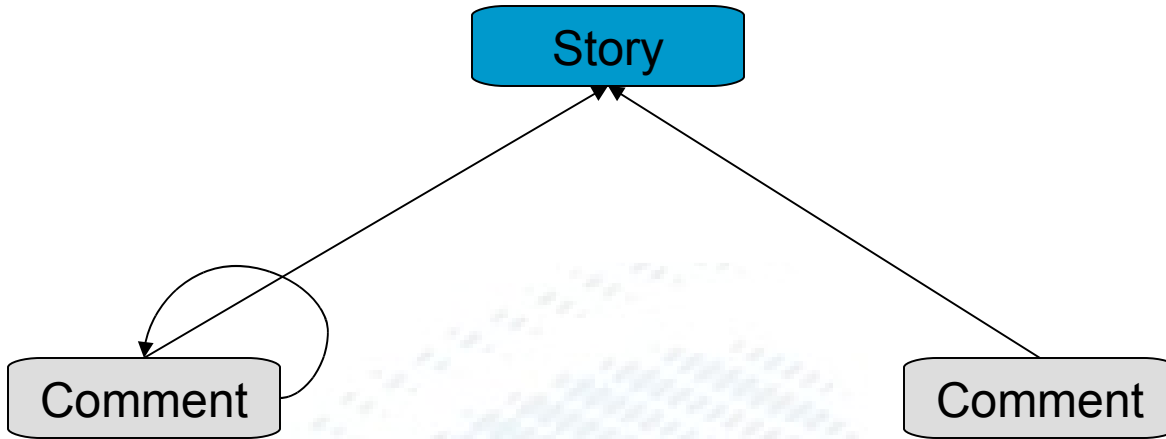
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<http://www.slashdot.org/>

Slashdot Recommendations [Lampe and Resnick]

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

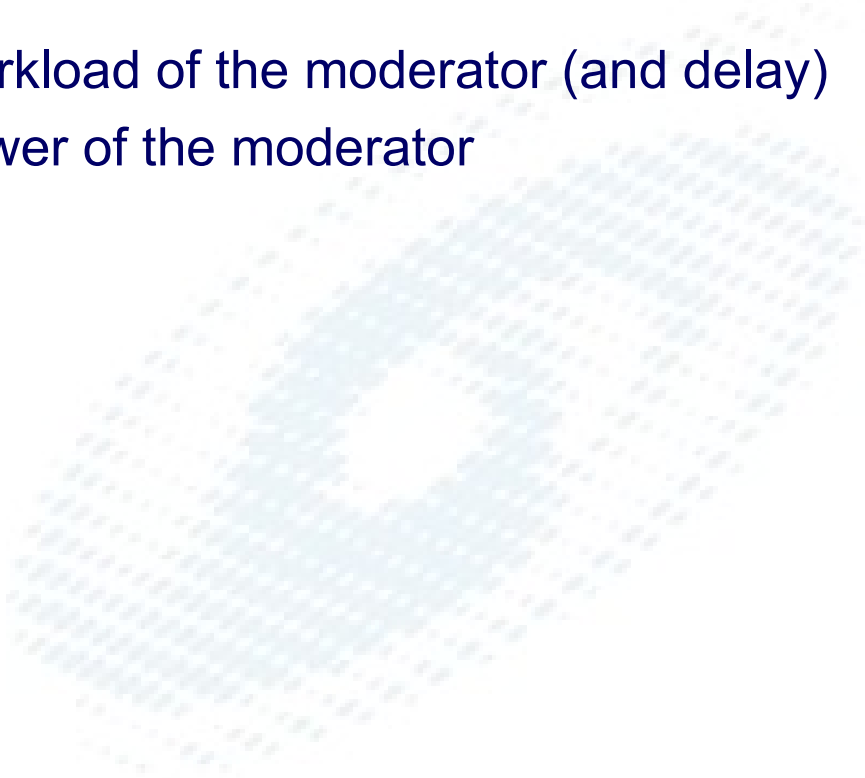




Evolution of Distributed Moderation

■ Why?

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



Slashdot - moderation

Why? (Score:5, Insightful)

by [Wind Walker \(83965\)](#) on Friday March 26, @10:35AM (#8679865)

(<http://slashdot.org/>) Last Journal: [Sunday January 20, @01:58PM](#)

Forgive me for being so stupid, but what's the point of making a craft that can go Mach 7? The article claims travel benefits, going from New York to London in 2 hours. But honestly, travelling that fast, if anything went wrong you're toast. Turn a little bit to the wrong side, and suddenly you've lost a wing from the shock. No c

The only possible use I can think around the globe faster than any

Moderation interface

-controlled planes armed with lethal cargo (nuclear or not) could be flown acy.

I'm all for "Science for Science's sake" but I think this is worthless for any practical purposes.

[[Reply to This](#)]

- | | |
|-------------|---|
| Normal | ay March 26, @10:45AM |
| Offtopic | abbit (Score:1) Friday March 26, @10:47AM |
| Flamebait | |
| Troll | sightful) |
| Redundant | 92) on Friday March 26, @10:48AM (#8679993) |
| Insightful | |
| Interesting | goes wrong with a regular transatlantic airliner while it's over the North Atlantic, I think it's fairly safe to say you're |
| Informative | |
| Funny | |
| Overrated | ardesses tell you that you can use your seat cushion as a floatation device, but two things strike me in that scenario: |
| Underrated | |

- 1) What are the chances of surviving initial impact into the ocean when the plane is in a 600 mile an hour vertical dive
- 2) Do I really want to float around in the North Atlantic for several days, clinging to a pillow full of beer farts

And yet, we still do this on a regular basis because guess what - it's actually fairly safe. As will hypersonic travel be, once we get around to getting better materials etc.



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](#)

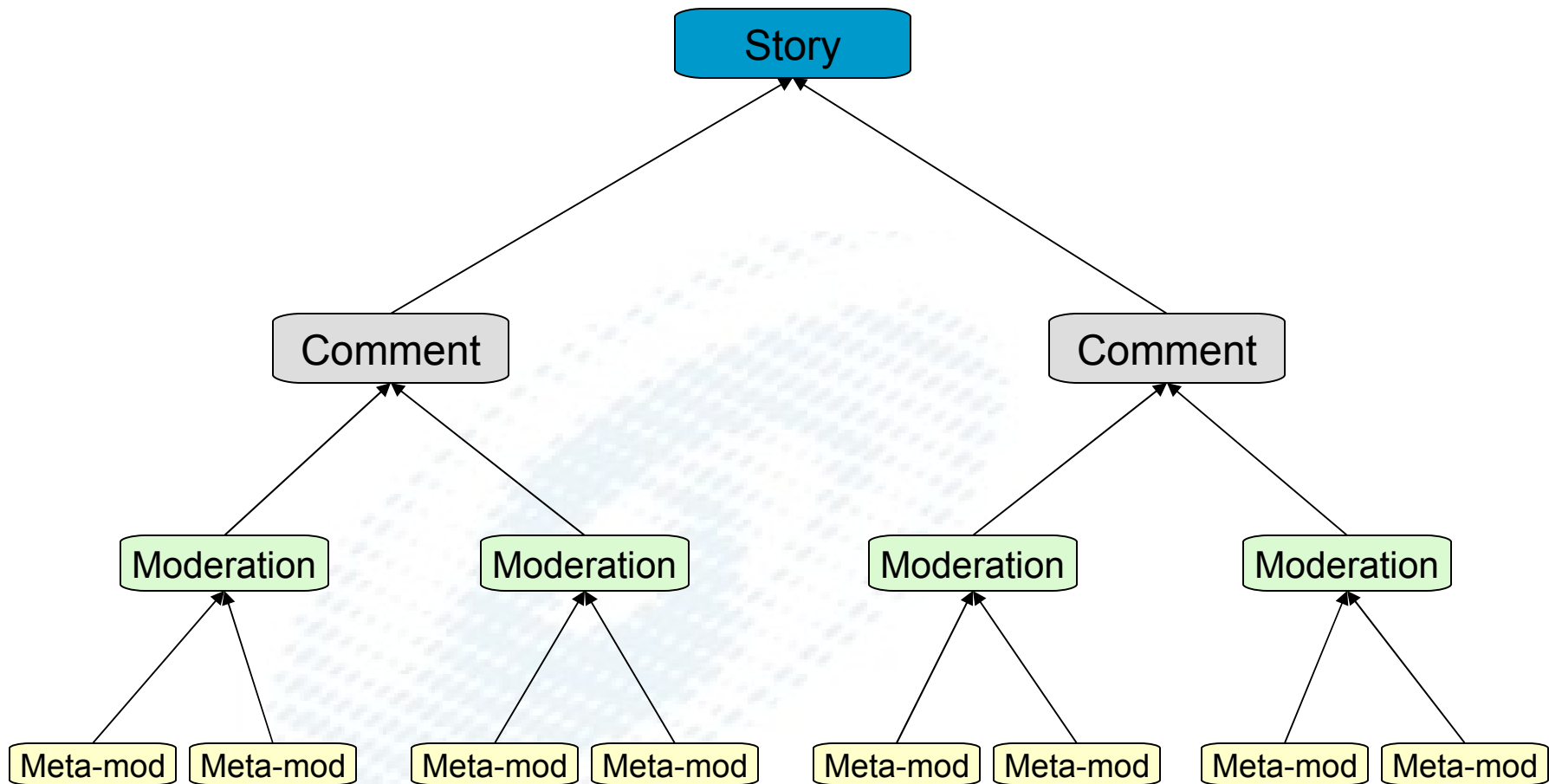
Rating: **Insightful**

This rating is **Unfair** **Fair** | [See Context](#)



<http://www.slashdot.org/>





The Workload is Distributed

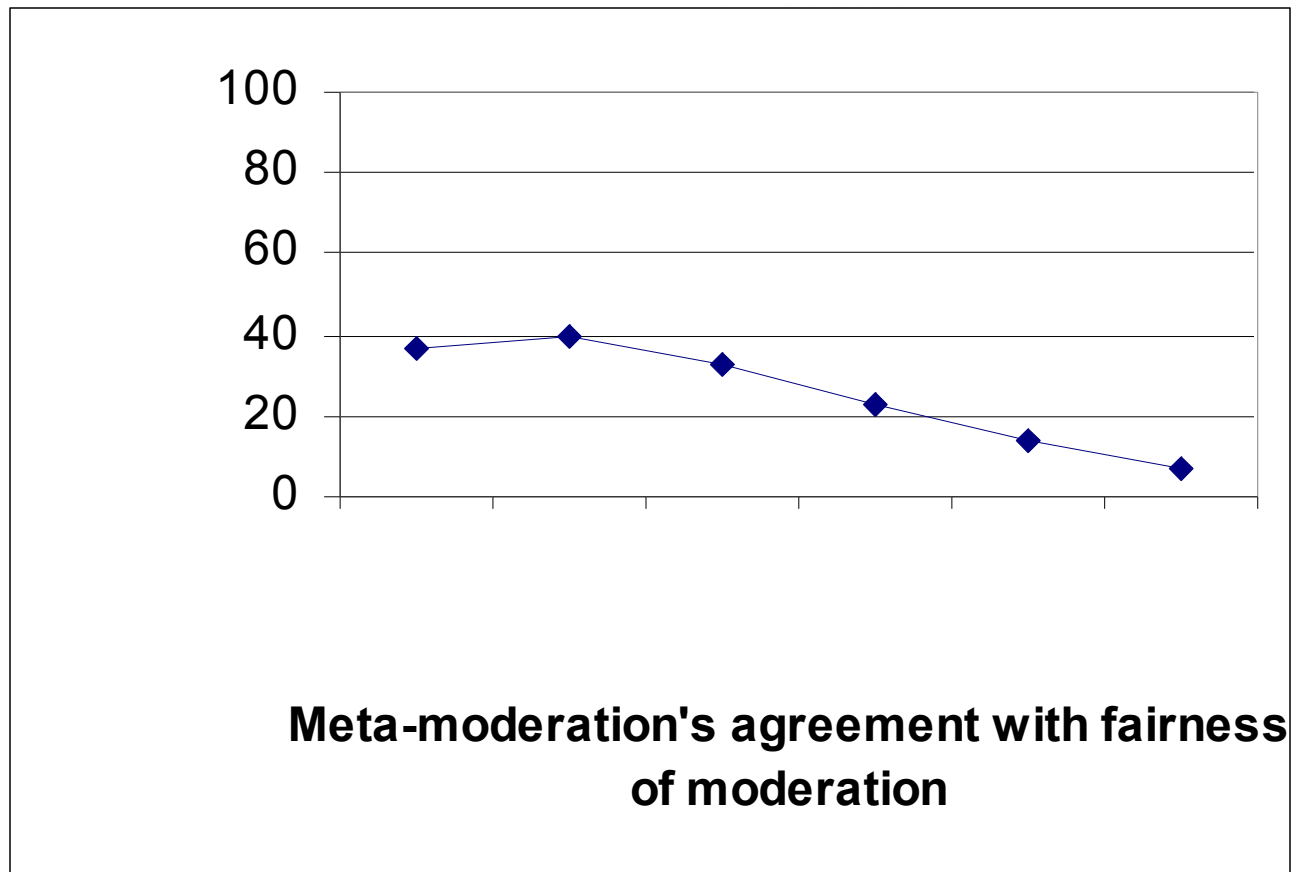
	Commented	Didn't
Moderated	16,286	7,783
Didn't	23,670	



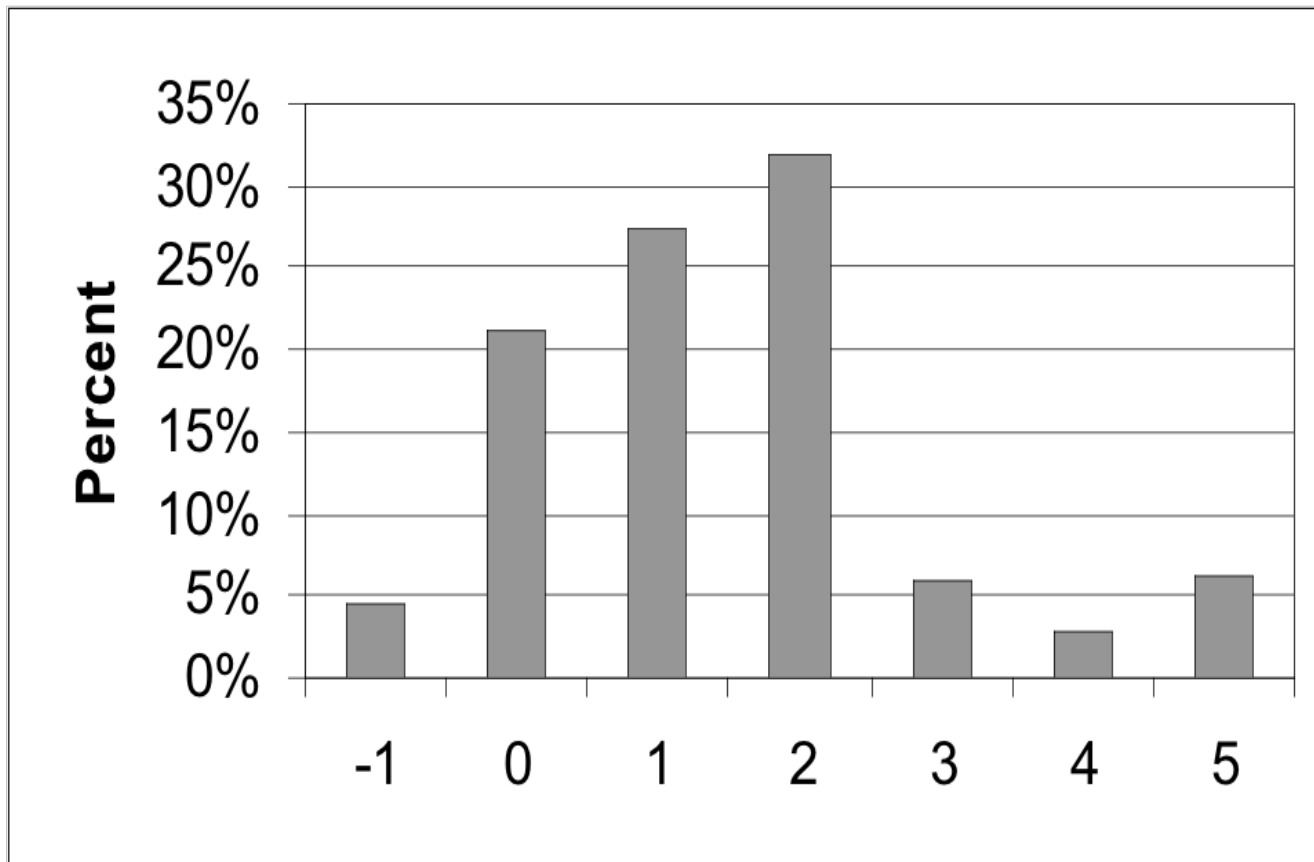
Percentile	Time in minutes	
	to reach a score ≥ 4 (n=47,474)	to reach a score ≤ 0 (n=28,277)
10	19	2
20	37	5
30	61	9
40	96	16
50	148	28
60	227	49
70	350	90
80	554	190
90	932	517

Table 1: Time to reach benchmark scores.

Unfair Moderations Often Not Reversed



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?

m o v i e l e n s
helping you find the *right* movies

Welcome to MovieLens!

Free, personalized, non-commercial, ad-free, great movie recommendations.
Have questions? Take the [MovieLens Tour](#) for answers.
Not a member? [Join MovieLens now](#).

Need a gift idea? Try [MovieLens QuickPick!](#)

New to MovieLens?

Join today!

You get **great recommendations** for movies while **helping us do research**.
Learn more:

- Try out [QuickPick: Our Movie Gift Recommender](#)

Hello MovieLens Users!

Please log in:

Username/E-mail:

Password:

Save login:

Log into MovieLens



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
$$rating\ benefit = a_1 * rec_quality + a_2 * fun_score + \dots$$
- 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

