

# How Argumentation can Enhance Dialogues in Social Networks

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“

- ✦ Information discovery is changing from solitary to social
- ✦ The way we share is changing from active to passive, separating access from notification (publish then filter)
- ✦ The concept of Social Network as sites where “one goes to be social” is a transitory phenomenon
  - ✦ in a whole *Social Web*, social network relations should be usable and portable to any other site on the web
  - ✦ Lots of “speciality” sites: it would be nice if one could actually have social interactions with people on those sites without those sites having to become a social network

”

Google’s Director of Product Management Joe Kraus talking at the Supernova Conference in San Francisco in 2008 on the topic of “social computing”

# Social Networks?

- ✦ Currently, many websites allow social networking among users
- ✦ Leisure Oriented - Business Oriented
- ✦ In these communities on-line discussions arise
- ✦ Individual views are mixed in the tangle of user-generated content
- ✦ ... though there are typically no mechanisms to structure this information and to elicit knowledge from it (semi)automatically



flickr



orkut beta

twitter

amazon.com

ebay



Epinions.com  
a Shopping.com company

# Social Network Model

- ✦ Social Network: abstraction to represent social structures that link individuals or organisations
- ✦ Types:
  - ✦ Explicit: openly represent users and links between them
  - ✦ Implicit: do not make social information accessible to users
- ✦ Features:
  - ✦ Overall Purpose
  - ✦ Permitted Tasks
  - ✦ Nodes
  - ✦ Roles
  - ✦ Knowledge databases
  - ✦ Ties
  - ✦ Social network analysis measures
  - ✦ Types of argumentative dialogues

Activity	Persuasion	Negotiation	Inquiry	Deliberation	Information Seeking and Sharing	Eristics	Examples
Blogs	X				X		Pingback, trackback, Slashdot, LiveJournal, BlogSpot
Collaborative RT Editors					X		SubEthaEdit, SynchroEdit, ACE, Moonedit, Google Docs & Spreadsheets and Zoho
Commercial Sites with Social Networking features	X		X	X	X	X	Amazon and eBay
Commercial Social Networks		X			X		Dell IdeaStorm
Consumer Review Sites with Social Networking features	X		X	X	X	X	TripAdvisor and ePinions
Deliberative Social Networks	X			X		X	Webs of discussion and debate for decision-making purposes between individuals and government
Ethical and Social help Sites	X		X	X	X	X	Kiva and Ethicaleconomy
Forums	X			X	X	X	Yahoo! Groups and Google Groups
Instant Messaging					X		Gtalk, Skype, ICQ, Yahoo! Messenger, MSN, Pidgin AOL and Jabber
Prediction Markets			X		X		
Social Cataloguing			X		X		CiteULike, Connotea, BibSonomy and rebase
Social Guides					X		WikiTravel
Social Libraries			X		X		discogs.com, imdb.com and LibraryThing
Social Network Search Engines					X		Newstrove
Social Networking Sites	X			X	X	X	Facebook, Flickr, MySpace, Orkut and Twitter
Social On-line Storage					X		Using servers or P2P technology
Text Chat					X		IRC and other technologies
Virtual Worlds	X	X	X	X	X	X	Dotsoul, SecondLife, Active Worlds, the Sims on-line, There, Planeshift, Croquet project, VOS, Solipsis, Everquest and World of Warcraft
Wikis			X		X		Wikipedia, Wikisource

# Amazon Study Case

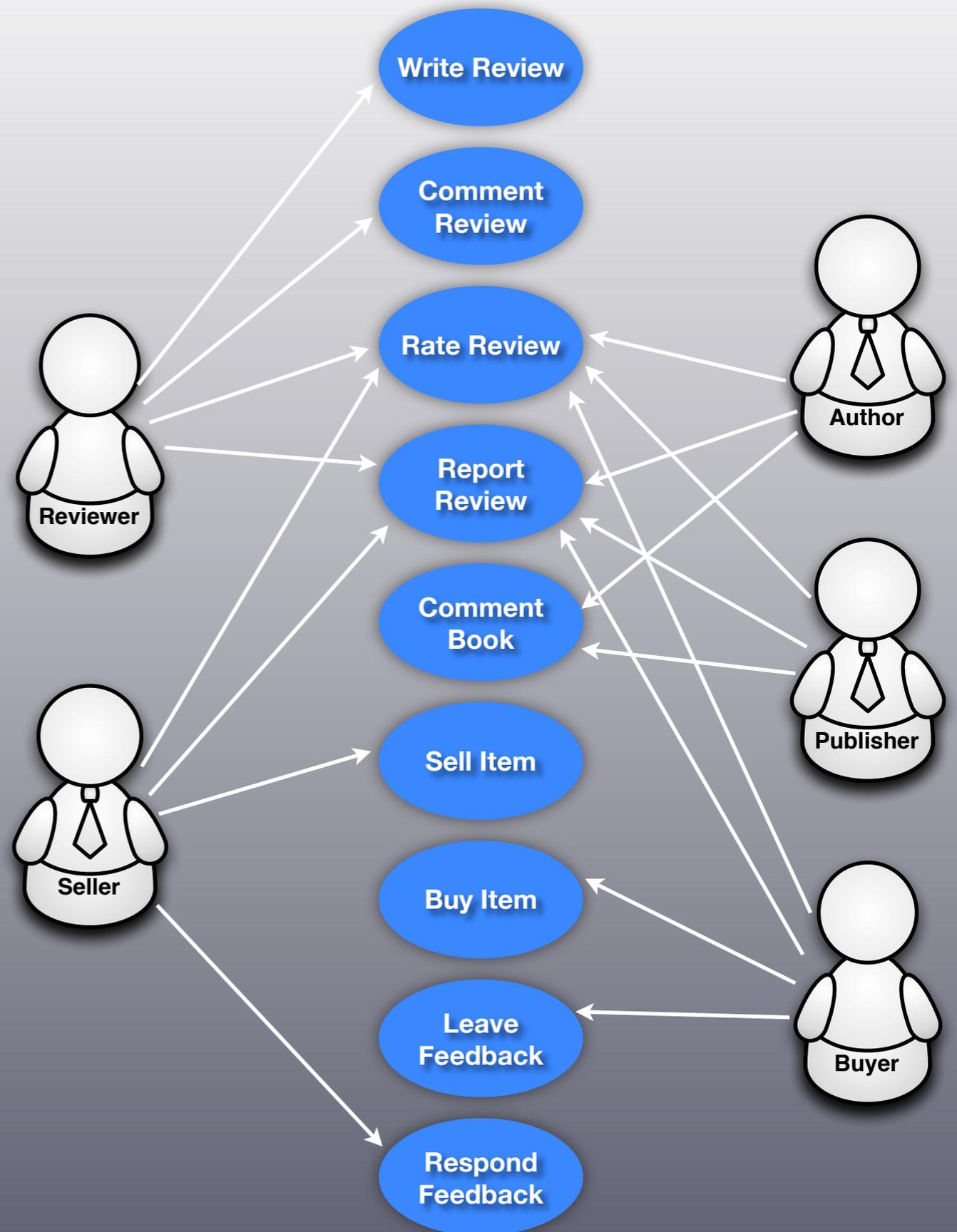
## Social Networking Features

- ✦ Write reviews about products
  - ✦ Reviewer rank
  - ✦ Other users: comment, rate and report reviews
- ✦ Leave feedback and comments about marketplace sellers after a purchase
  - ✦ Seller ratings
  - ✦ Sellers can respond to the comment/rating but cannot rate buyers
- ✦ Join customer communities
  - ✦ Listmania lists, Wish lists, tag products, So you'd like guides...
  - ✦ Post can be replied, rated and reported...but do not rate users

# Amazon Study Case Use Case Diagram

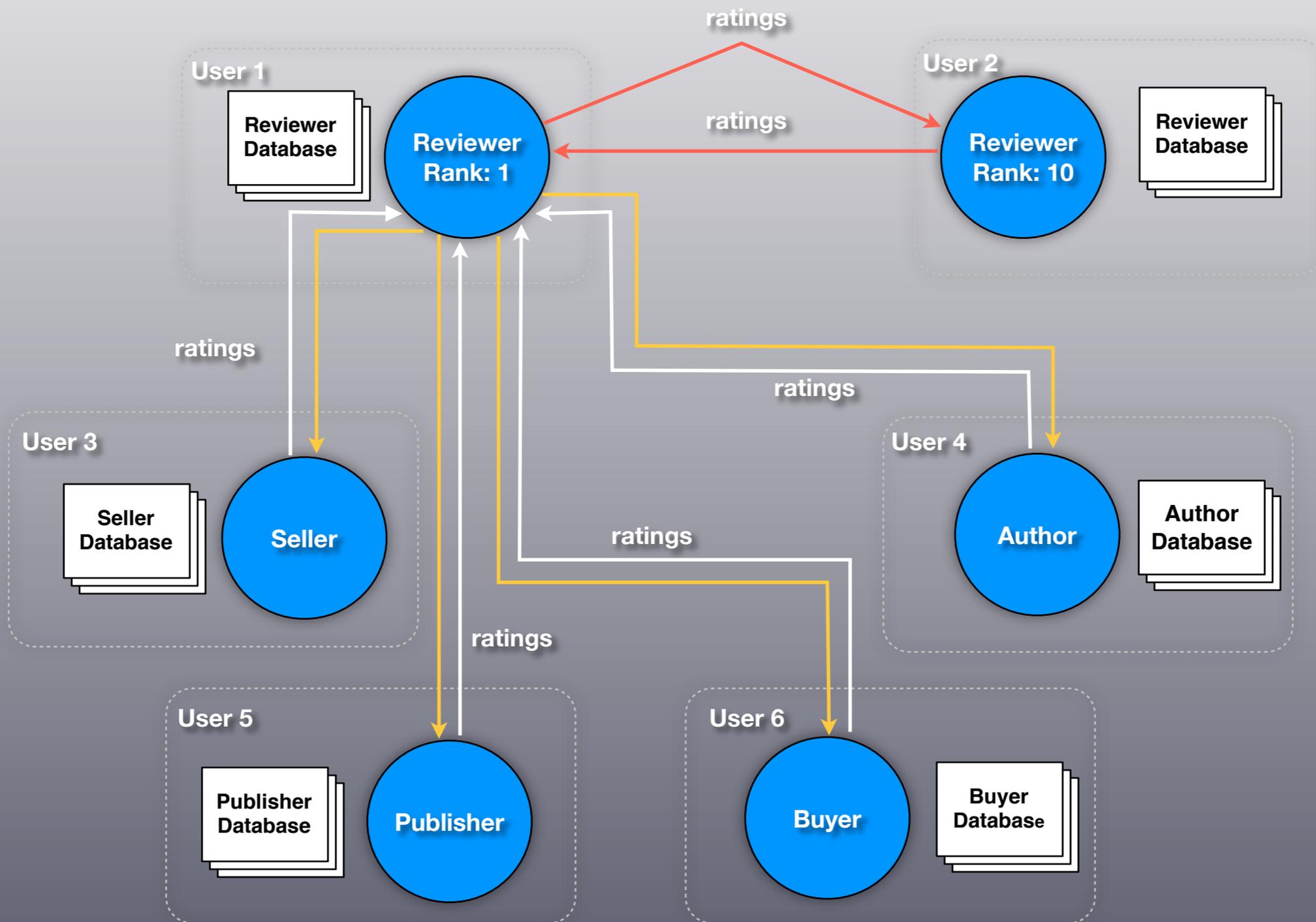
## ✦ Roles

- ✦ Buyer
- ✦ Seller
- ✦ Author
- ✦ Publisher
- ✦ Reviewer

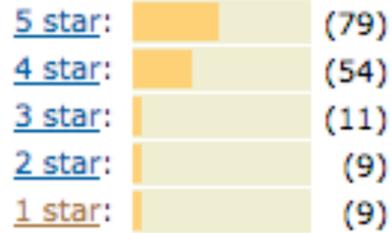


# Amazon Study Case

## Social Network of Reviews



### 162 Reviews



### Average Customer Review

★★★★☆ (162 customer reviews)

Share your thoughts with other customers

[Create your own review](#)

### Search Customer Reviews

GO!

Only search this product's reviews

### The most helpful favourable review

299 of 299 people found the following review helpful:

★★★★☆ **So far, so good!**

I looked at, and tried, lots of the better reviewed kettles before finally buying this one. I previously had a Breville JK115 Lightning, which to be fair was an excellent kettle and lasted almost 5 years before starting to leak (plastic seemed to be disintegrating and it was taking longer to boil!). The Philips HD4671/20 looks smart (for a kettle) and the handle is...

[Read the full review >](#)

Published 11 months ago by mm13

> See more [5 star](#), [4 star](#) reviews

### The most helpful critical review

60 of 63 people found the following review helpful:

★★★☆☆ **Good while it lasted**

We've had this product for less than a month and all of a sudden it stopped working. Maybe we're just unlucky, especially with kettles recently. Otherwise whilst in use we found it easy to operate and liked the fact you could limit the amount of water boiled for 1/2 cups etc. We now have to go through the inconvenience of having the kettle replaced but will go for the...

[Read the full review >](#)

Published 16 months ago by Anna Tolley

> See more [3 star](#), [2 star](#), [1 star](#) reviews

Vs.

< Previous | **1** | 2 ... 17 | Next >

**Most Helpful First** | [Newest First](#)

299 of 299 people found the following review helpful:

★★★★☆ **So far, so good!**, 25 Sep 2009

By [mm13](#) (UK) - [See all my reviews](#)

4 of 5 people found the following review helpful:

☆☆☆☆☆ **smell of plastic**, 2 Feb 2010

By [Prana](#)  - [See all my reviews](#)

**This review is from:** Philips HD4671/20 Energy Efficient Kettle Brushed Metal 3.0KW 1.7L (Kitchen & Home)

boiled twice and sending back

1/ lined with plastic inside which makes it smell and probably taste wrong

2/ energy efficient in the sense that "if you use the right amount of water you reduce the consumption" - this is applicable to any kettle

Help other customers find the most helpful reviews

Was this review helpful to you?

[Report this](#) | [Permalink](#)

 [Comment](#)

3 of 4 people found the following review helpful:

☆☆☆☆☆ **Faulty**, 1 Feb 2010

By [Jabba](#)  - [See all my reviews](#)

**This review is from:** Philips HD4671/20 Energy Efficient Kettle Brushed Metal 3.0KW 1.7L (Kitchen & Home)

Not good...wife persuaded me not to return. Lid doesn't close so instead of quick efficient boil have slow boil with steam spewing out - usually have to hold lid down for the kettle to switch off :(

Help other customers find the most helpful reviews

Was this review helpful to you?

[Report this](#) | [Permalink](#)

 [Comments \(2\)](#)

☆☆☆☆☆ **Leaking kettle**, 11 Jun 2010

By [Bwbe Brownnutt](#)  - [See all my reviews](#)

.....  
REAL NAME  
.....

**This review is from:** Philips HD4671/20 Energy Efficient Kettle Brushed Metal 3.0KW 1.7L (Kitchen & Home)

This kettle started to leak quite dramatically through the level display panel on our very first attempt to boil water. Very poorly manufactured goods which were obviously returned immediately.

## Comments

Track comments by e-mail

Showing 1-2 of 2 posts in this discussion

Sort: **Oldest first** | Newest first

Initial post: 22 Feb 2010 21:36 GMT

M. BERNARD says:

What is the point of reviewing, what is obviously, a faulty item from new?  
Given all the other good reviews this one is obviously spurious.  
It would have been more useful to have reported how the return had been handled.

[Reply to this post](#)

[Permalink](#) | [Report abuse](#) | [Ignore this customer](#)

0 of 1 people think this post adds to the discussion. Do you?

In reply to an earlier post on 10 April 2010 14:34 BST

B. Al says:

Looks like someone earns a living at PHILIPS :D ... <sic> "\*\*\*OBVIOUSLY\*\*\*" spurious" - lucky you with your powers of ESP!

There are plenty of NEGATIVE reviews of both this and the (honest) plastic version, no different or unique from many of the Modern Kettles from all variety of manufacturers produced today including around the price range of this 'energy efficient' model eg they frequently leak for a significant number of reviewers SOONER rather than later - whether these collections of reviews represent a balanced indication for the majority of owners in the real world is another matter entirely...

[Reply to this post](#)

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Do you think this post adds to the discussion?

< Previous **1** Next >

# Social Discovery - problems

- ✦ Opinions = reviews and guides to give advice to users
  - ✦ Reasons may be implicit in the text
  - ✦ Non-expert users have difficulties to understand implications
  - ✦ Collaboratively written: individual opinions blurred as the number of posts grows
- ✦ Evaluation methods: trust and reputation
  - ✦ Not usual on leisure oriented social networking sites
  - ✦ Do not provide an objective way of assessing opinions by looking reasoning patterns to come up with specific conclusions
  - ✦ Opinions can be misunderstood and rated low

# Argumentation Schemes to Support On-line Dialogues in

- ✦ To provide a formal structure to opinions and recommendations
- ✦ To provide a way of evaluating user opinions and recommendations
- ✦ To provide a formal structure to the dialogue as a whole
- ✦ To complement/enhance recommendation systems output

# Amazon Argumentation Schemes Example

## Customer Review

255 of 282 people found the following review helpful:

★★★★☆ A must in your Argumentation bibliography, September 18, 2009

By User1  
New Reviewer Rank: 2,525,408

...

...this book is an excellent reading. It's the third book that I've read from this author and it's as good or better than the last two. Any student or researcher on Argumentation in AI will enjoy the reading, which starts with some introductory chapters in the area and nicely flows to more specific topics. As a scholar in AI, I strongly recommend it...

...

[Permalink](#) | Was this review helpful to you?   ([Report this](#))

[Add a comment](#)

### Comments

[Track comments by e-mail](#)

Showing 1-2 of 2 posts in this discussion

User2 says:  
New Reviewer Rank: 1,326,523

...so I'm still not sure about the quality of the book, since I read the 2nd of this series and I found it quite difficult to follow. What confuses me the most are what you (*i.e. User1*) said on your review of this 2nd book, where you wrote a hard criticism and strongly discourage the reading. Up to my knowledge, this could be a hard reading...

...

[Reply to this post](#)

[Permalink](#) | [Report abuse](#) | [Ignore this customer](#)

10 of 17 people think this post adds to the discussion. Do you?

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User3 says:  
New Reviewer Rank: 15,782

...I totally agree with User1. I haven't read other books on the series, but looking to this one, I guess they are also good. Moreover, although User1 discourage the reading of the 2nd book of the series for the non-scholars, he does so because its contents assume previous expertise on the area. This does not necessarily mean that the 2nd book is a bad reading...

...

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5 of 6 people think this post adds to the discussion. Do you?

# Amazon Argumentation Schemes

## Arguments

- ✦ User 1 provides an argument in favour of the book:
  - ✦ *A1: 'I am an scholar in the Area of AI; I strongly recommend the reading of B; THEREFORE this is a good reading'*
- ✦ User 2 replies with two arguments: an opinion about the topic and an attack to A1:
  - ✦ *A2: 'I have read the 2nd book of the series of B; This wasn't a good reading; THEREFORE book B couldn't be a good reading either'*
  - ✦ *A3: 'User 1 says that B and its series are good; but discouraged the reading of B in a previous review; THEREFORE the review of User 1 is inconsistent with what he said before'*
- ✦ Finally, User 3 replies to User 2 supporting User 1:
  - ✦ *A4: 'User 1 is a scholar in AI; User 1 discouraged the reading for non-scholars of the 2nd book of the series of B; THEREFORE the 2nd book isn't a good reading for non-scholars'*

# Amazon Argumentation Schemes

## Argumentation Schemes

### ✦ **A1: Argument from Expert Opinion**

- ✦ **Major Premise:** Source User1 is an expert in the subject domain  $A$  containing proposition '*book B is a good reading*'
- ✦ **Minor Premise:** User1 asserts that '*book B is a good reading*' is true
- ✦ **Conclusion:** '*book B is a good reading*' is true
- ✦ **Critical Questions ...**

### ✦ **A2: Argument from Position to Know**

- ✦ **Major Premise:** Source User2 is in position to know about things in the domain '*books in B series*' containing proposition '*book B is a good reading*'
- ✦ **Minor Premise:** User2 asserts that '*book B is a good reading*' is false
- ✦ **Conclusion:** '*book B is a good reading*' is false
- ✦ **Critical Questions ...**

# Amazon Argumentation Schemes

## Argumentation Schemes

### ✦ **A3: Argument from Inconsistent Commitment**

- ✦ **Initial Commitment Premise:**  
User1 has claimed that he is committed to proposition '*book B and its series are a good reading*'
- ✦ **Opposed Commitment Premise:**  
Other evidence shows that User1 is not committed to proposition '*book B and its series are a good reading*' since he discouraged the reading of B in a previous review
- ✦ **Conclusion:** User1's commitments are inconsistent
- ✦ **Critical Questions ...**

### ✦ **A4: Argument from Expert Opinion**

- ✦ **Major Premise:** Source User1 is an expert in the subject domain A1 containing proposition '*book B is a good reading*'
- ✦ **Minor Premise:** User1 asserts that '*the 2nd book of the B series isn't a good reading for non-scholars*' is true
- ✦ **Conclusion:** '*the 2nd book of the B series isn't a good reading for non-scholars*' is true
- ✦ **Critical Questions ...**

# Amazon Argumentation Schemes

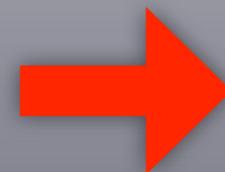
## Attacks

- By associating a scheme to each argument, opinions are given a formal structure
- Users could be asked to explain their arguments by using the critical questions of a scheme
- Users could be asked to explain their positions better

**A4:** the 2nd book of the B series isn't a good reading for non-scholars



**A3:** User1's commitments are inconsistent



**A1:** book B is a good reading

**CQ2:** *What further evidence is alleged to show that User1 is not committed to propositions 'B and its series are a good reading'*

**CQ4:** *Is User1 personally reliable as a source?*

# Conclusions

- ✦ Argumentation schemes theory can be used to formalise and structure on-line discussions and user opinions in social networks
- ✦ For this situation to be realistic users need to find the use of argumentation natural enough. Requirements:
  - ✦ Make underlying social networks explicit
  - ✦ Tools to support the easy identification of schemes in on-line debates
  - ✦ Tools to represent the dynamics of dialogues among users, to identify attacks and defenses
  - ✦ Tools to summarise and analyse the information gathered from the schemes and attacks identification

**Thanks!**