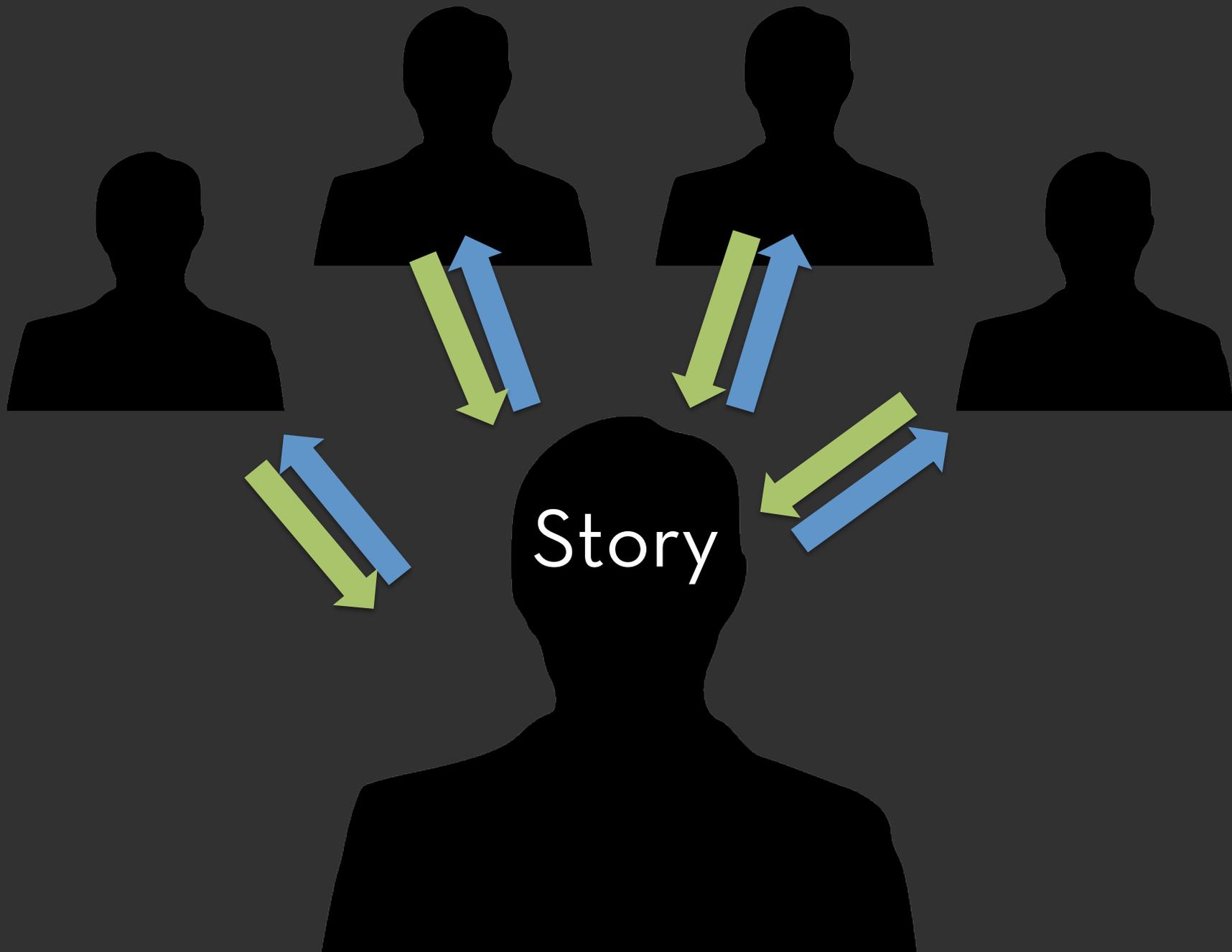
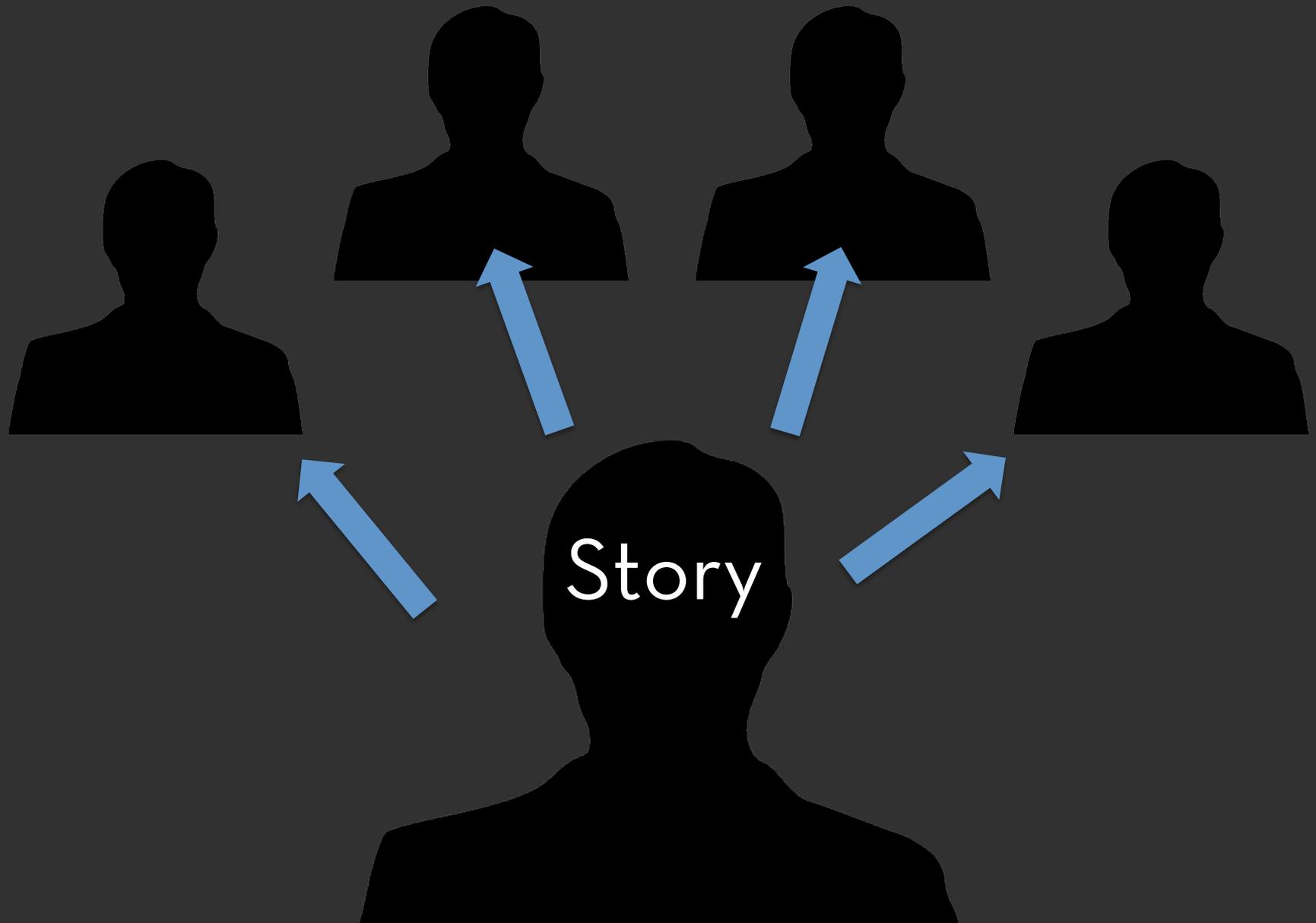


ENSEMBLE:  
EXPLORING COMPLEMENTARY STRENGTHS  
OF LEADERS AND CROWDS IN  
CREATIVE COLLABORATION

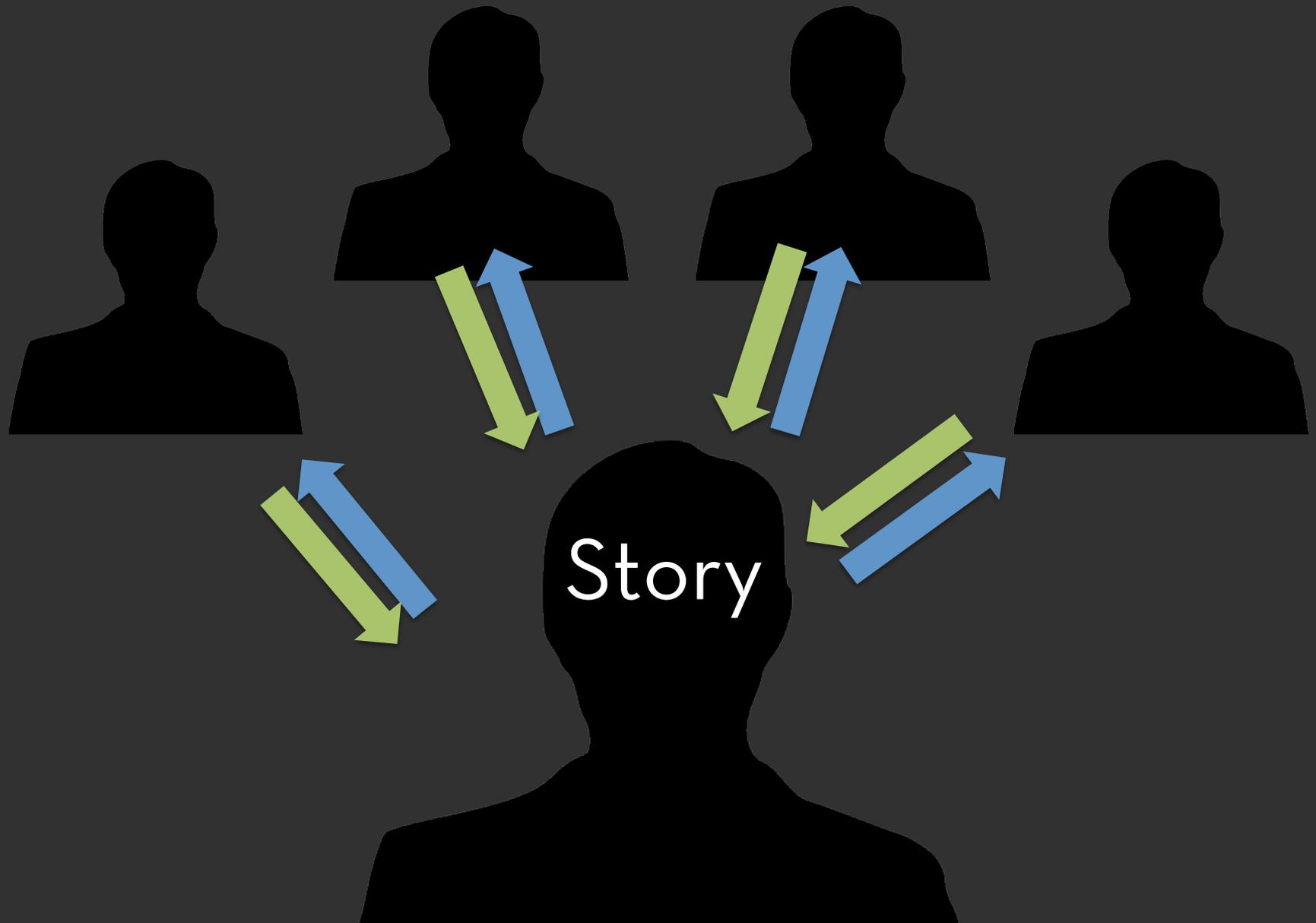
Joy Kim, Justin Cheng, and Michael Bernstein  
Stanford HCI Group



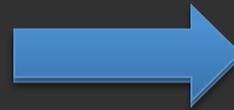
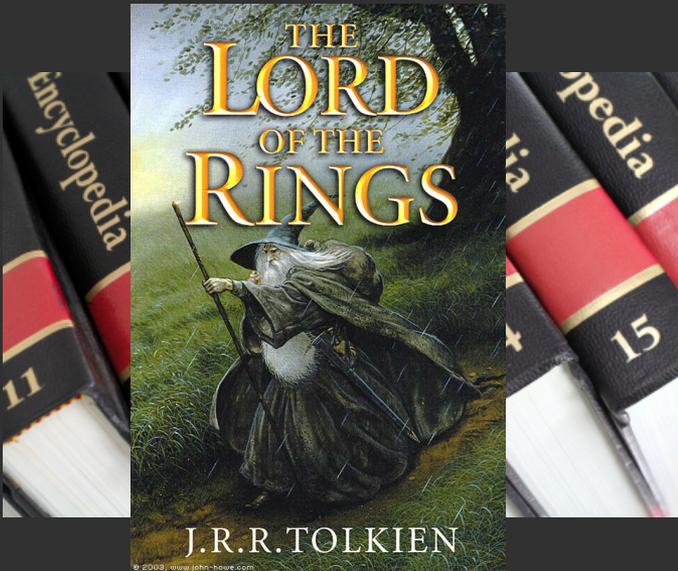
# Passive consumers



# Active contributors



Could the crowd write  
the great collaborative novel?



# Completely open approach prevents convergence to a single creative vision



The screenshot shows the homepage of amillionpenguins.com. At the top left is the De Montfort University Leicester logo, featuring a penguin and a dragon. The URL 'dmu.ac.uk' is above 'DE MONTFORT UNIVERSITY LEICESTER'. To the right is a 'Log in / create account' link. The main title 'amillionpenguins.com' is in large orange text. Below it are navigation buttons for 'main page', 'discussion', 'edit', and 'history'. A left sidebar contains a menu with items like 'The Novel', 'About the Project', and 'Guidelines'. The main content area has a heading 'Banana version of novel' and a paragraph of text starting with 'The Banana sat with all the others...'. A dashed box highlights a yellow banana icon at the bottom of the text area.

dmu.ac.uk  
DE MONTFORT  
UNIVERSITY  
LEICESTER

Log in / create account

amillionpenguins.com

main page discussion edit history

- The Novel
- About the Project
- Pre-launch Discussion
- The Blog
- Current events
- Recent changes

**Guidelines**

- Technical Guidelines
- Ethical Guidelines
- Terms and Conditions

## Banana version of novel

The **Banana** sat with all the others. It sat with its freshly broken stem pointed up to the flouro glow of the old fruit shed's lights. It watched as the bugs flew around and around the luminescent tubes in dizzying circles.

Mason, B. and Thomas, S. A Million Penguins research report. 2008.

# Highly structured & linear approach results in patchwork stories



Johnson burst into the room, white-faced and panic-eyed. "The Pentagon's not llama-proof!"

Someone stood, clutched their face, and screamed like a dying yak. General Specific



shouted, "QUICK! Bar the doors! EVERYONE, take cover! JOHNSON, you cover the entrance!"

General Specific called the hotline: "Sir, the Pentagon is under attack. Llamas everywhere!"



He handled the matter in the only way he knew how, by singing LLAMA LLAMA DUCK.

"Here's a llama, there's a llama, and another little llama, fuzzy llama, funny llama, llama llama

Too much or too little structure  
makes stories incoherent



Constraints can inspire new ideas and make it easier to coordinate creative work

Stokes, P. Creativity from constraints: the psychology of breakthrough. 2005.



Constraints can inspire new ideas and make it easier to coordinate creative work

Creative professionals continually revise goals to develop purpose for a work

Stokes, P. Creativity from constraints: the psychology of breakthrough. 2005.

Flower, L. and Hayes, J.R. A cognitive process theory of writing. 1981.

McKee, R. Substance, structure, style, and the principles of screenwriting. 1997.

Leader



CREATES GOALS TO  
DIRECT WORK

Crowd



FLESHES OUT STORY  
BASED ON GOALS

A leader provides goals, while others flesh out ideas



A leader provides goals, while others flesh out ideas





Wikipedia also has (unofficial)  
user roles and leaders

Welser, H.T. et al. Finding social roles in Wikipedia. 2008.

Thom-Santelli, J. et al. What's mine is mine: territoriality in collaborative authoring. 2009.

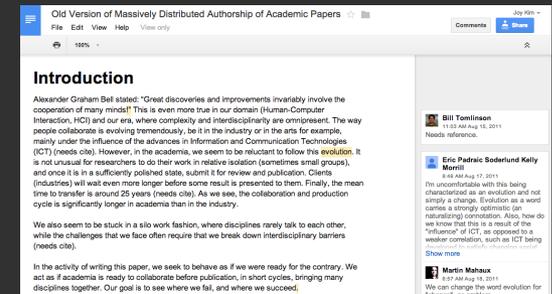
# HOW CAN WE MAKE CROWDS CREATIVE?



Distributing leadership



Collaboration through  
remixing



Live editing and  
communication

Luther, K. et al. Redistributing leadership in online creative collaboration. 2013.

Hill, B. M. & Monroy-Hernandez, A. The cost of collaboration for code and art: evidence from a remixing community. 2013.

Tomlinson, B. et al. Massively distributed authorship of academic papers. 2012.

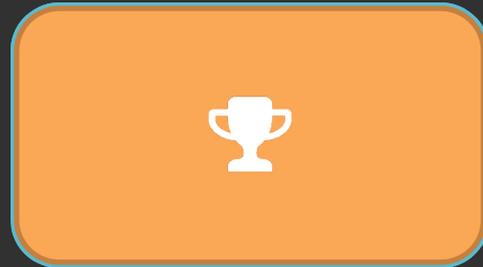
Yu, L. & Nickerson, J. V. Cooks or cobblers?: crowd creativity through combination. 2011.

Settles, B. & Dow, S. Let's get together: the formation and success of online creative collaborations.

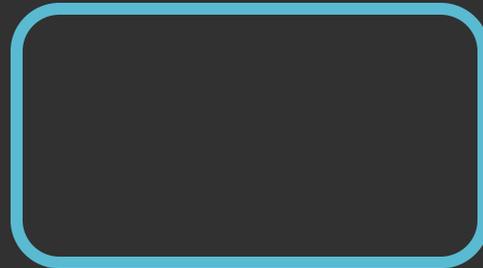
# ensemble

The crowd and the individual have  
complementary creative strengths

# Learning objectives should be written by principles



How should he escape from the hot air balloon?





**Tip:** While editing the story text, you can press Enter 3 times to create a new scene.

Genre 1: Please select



Genre 2: Please select



Privacy: Public (anyone can view story)



Publish

Save Draft

**B**

*i*



Once upon a time...

Click to create a scene

One day...

Click to create a scene

Genre: Adventure

117 words

Started by [Joy Kim](#) 2 days ago · Public (anyone can view story)

Story

Discussion 0

Activity

Contributors (2)

Edit Story

Delete Story

He was hardly tall enough to peer over the side of the balloon gondola. The tips of mountains were visible in the distance, but he mostly saw blue sky and wisps of fog. The boy laid down and groaned the way he had when his mom informed him last week he would be starting piano lessons. He even kicked his feet a little, but tantrums were no good when there was no one else around. He had thought the view was going to be better than this.

An hour ago he had, for once, been attending something that he had actually been wanting to go to. His mother was one of the committee members running the yearly flying machine show and so he

By [Joy Kim](#)

#1005

♥ 0 · Love

Edit · Delete



### Scene

Setting the stage

How should the setting and characters...

0 · Comment

By [Joy Kim](#)

♥ 0 · Love

voice  
traption.  
duct tape  
et in the air  
n sighed,  
k cautious  
loud were  
s. It dawned  
ound that this

By Justin #1005  
Cheng #1056  
♥ 0 · ♥ Love  
+

Scene 

Setting the stage  
How should the setting and characters...

0  · [Comment](#)

attending

By Joy Kim  
♥ 0 · ♥ Love

can view story)

ivity

 Contributors (2)

 Flag

 Edit Story

to peer over the side of  
hips of mountains were  
he mostly saw blue  
boy laid down and  
hen his mom informed  
e starting piano  
s feet a little, but

By Joy Kim  
❤️ 0 ·  Love

#1005

#1056

+

### Scene

Setting the stage

How should the set

be introduced?

1  · [Comment](#)

# Does dividing creative responsibility produce successful collaborations?

## Stanford Story Slam

April 2013

20 stories by 52 authors  
in small teams

## The Arrowhead Project

October 2013

One 9-chapter story by  
two authors and a large  
audience

# Stanford Story Slam 2013

Submissions are now open for the very first Stanford Story Slam! The winning submission will be published in the Stanford Arts Review and hold the distinction of pioneering collaborative story making on the web. The winning collaboration will also receive \$500.

[Start writing your entry >](#)



Photo credit: "Pen and Paper" by athena on F

100 users started 55 stories  
20 stories submitted to competition  
Team size ranged from 1 to 7 people  
(median of 2)



The story behind 300 missing bikes

# The story behind 300 missing bikes

## Lender's Lake

Bike's escape from the "riders" with the help of a young man

Genre: Slice of Life/Fantasy

772 words

Started by [Zack](#) 10 months ago · Public (anyone can view story)

Story

Discussion 0

Activity

Contributors (1)

Flag

Edit Story

Delete Story

A man name Lender spent his days near the Lake. On the dock he could rest under the sun without the eyes of the oppressors on him and his friends. Him and the bikes.

The bikes liked it there, too. One lay, half in the water, half in the mud; another, half-rusted, leaned against a tree. A group of newer models clustered around the base of the dock, not having yet found their favorite spot at Lender's Lake.

Past sunset, as Lender left the Lake, activity

By Zack

#261

0 · Love



Scene

Scene title

0 · Comment

By Jade

#326

0 · Love

#262



Scene

This is an example scene.

By creating a scene, you allow people to contribute alternative ways of writing this scene. Here, you can provide a short descri...

Give your collaborators a specific pr...

5 · Comment

## Flashback

The young Finn has his first red bike when he's accosted by a bully who steals it. The beginning of his deep-seated psychological problem.

Does Finn still have training wheels? How old is he? What's the bully's link to him-have they met or is he just some random mean kid?

6  · [Comment](#)

**Anna**

Posted 10 months ago



i think yes to training wheels. The bully should be a random guy so we don't have to go into names.

**Kristen**

Posted 10 months ago



Ok, so he's riding down the street, or is he like, outside his house or at the playground and this bully steals it? We should make it really sad...like, ruin your childhood sad.

# Despite division of creative responsibility in Ensemble, the spread of work was balanced

I walked in, head bent low in an introspective mood, and moved towards my study table. I sighed and looked at the problem- my project. Its size only accentuated its simplicity. Emmolient sounds of a distant piano drifted towards the study, slowly transforming into an annoying motif with horribly timed accents and unnecessary crescendos. I continued to stare at it, my gaze transfixed but thoughts astray. Disconcerted, I looked at my 30 million dollar problem. The reason for sleepless nights and a bottle of whiskey on the floor; a baby.

I felt my phone vibrate, and reached into my pocket for it. *'Must be Layla.'* I wondered how long I could keep this from her. The last few days

The screenshot shows a social media post with a yellow background. The post text is: "intro to the main theme introducing just what the story will revolve around should i make it more specific? should i remove the violin bit? is the story drifting? 4 · Comment". The author is "By Nikita Antony" with 371 likes. There are three comments: "Sakshi correct to 'crescendos'", "Nikita Antony whoops! Got it :)", and "Nikita Antony That sentence seems a little empty, though... Should I add that the music worsened his headache or something?". A fourth comment by "Sakshi" is highlighted with an orange box: "no, no, enough about the music.".

Mean Gini coefficient of **0.286** (SD = 0.194) across 20 submitted stories

Leaders extracted high-level ideas from others to tweak their own writing

“...for the one that another person submitted for the story I submitted, I didn't end up using [their contribution], **but it helped me pinpoint things that I liked and didn't like in both my version and theirs.**

Leaders maintained creative authority

...but as benevolent dictators

*...I let her know in the comments that, 'Look, I like the suggestions, but at this point I kind of know what I'm doing with the prose, so I would rather get suggestions with the plot elements, character motivations, things like that.'*

Contributors offered high-level ideas through  
low-level work

Used leader-provided prompts  
to focus work

“*...it still was really rewarding... because the way  
the website's set up helps that whole first draft,  
peer critiques, second draft process go smoothly  
and in **little, manageable sections.***

Contributors offered high-level ideas  
through low-level work

“***It's harder to describe what you want to do than just do it.*** So you could do it and have them look at it... [instead of them] criticizing their picture of what it is rather than your picture.

## Story quality and team strategy

- Two researchers independently rated 20 submitted stories ( $\kappa = 0.8$ )
- No correlation between story quality and
  - division of work ( $r(18) = 0.385, p = 0.093$ )
  - team size ( $r(18) = 0.069, p = 0.7715$ )

Leaders maintained  
creative authority

Contributors offered  
high-level ideas through  
low-level work

# THE ARROWHEAD PROJECT

What if a **large crowd**  
focused on one story?



Arrowhead Story is on Facebook.  
To connect with Arrowhead Story, sign up for Facebook today.

[Sign Up](#) [Log In](#)



**Arrowhead Story**  
190 likes

Book  
Arrowhead is a collaborative story written by Tom Kealey and Chris Baty, through the writing platform Ensemble.

About Photos Likes

Highlights

Arrowhead Story shared a link.  
November 4 near Palo Alto, CA

Well, we've made it to the end of Arrowhead Story. Those of you who've wanted to hold off and read it all in one swoop,

Recent Posts by Others on Arrowhead Story [See All](#)

Tom Kealey  
Well, we've made it to the end of Arrowhead Story. ...  
2 1 - November 4 at 8:58am



**Chris Baty**

@chrisbaty

[Follow](#)

Explosions! Mystery texts! What happens next in the story I'm writing with [@TomKealey](#)? (I'm not sure. Please help.) [ensemble.stanford.edu/arrowhead](http://ensemble.stanford.edu/arrowhead)

[Reply](#) [Retweet](#) [Favorite](#) [More](#)

6  
RETWEETS

2  
FAVORITES



9:57 AM - 23 Oct 13



**May** @satire\_writer

23 Oct

[@chrisbaty](#) [@NaNoWriMo](#) [@tomkealey](#) You should go out and buy a copy of 'No Plot? No Problem!'. Oh wait... :P

Viewed 6099 times by 1107 unique visitors, but only 30 comments and no contributed paragraphs

# Are expert writers better at managing story goals?

## Arrowhead Prompt

### The Ride

Name the EMT! I (Chris) couldn't quite figure out if we should name the EMT or not. If he shows up later in the story, he'll definitely need a name. What should it be?

3  · [Comment](#)

## Story Slam Prompt

### Setting

Description of the bike shop office, one of the side characters, and a bit about why the narrator's there.

Is the small hint about stolen bikes enough at this point? Should there be more, or no mention of it at all yet?

2  · [Comment](#)



Leaders provide structure



Crowds explore creative space



Extend to other mediums

<http://ensemble.stanford.edu>

Questions?

Joy Kim

[jojo0808@stanford.edu](mailto:jojo0808@stanford.edu)