



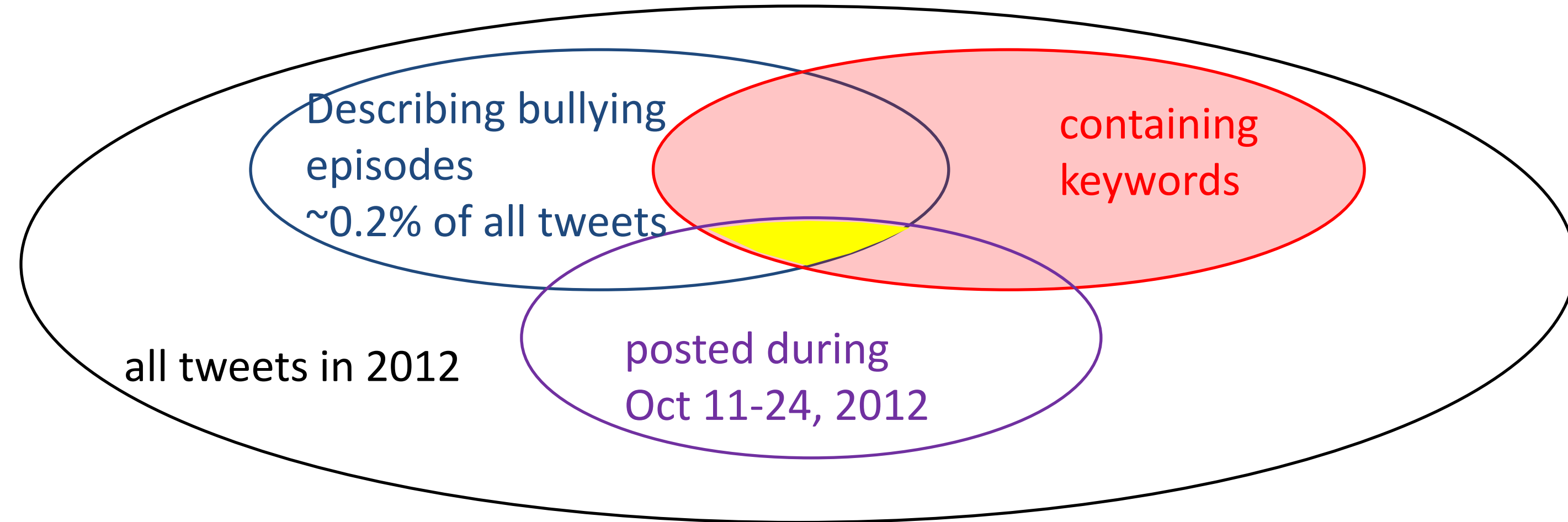
# School Bullying in Twitter and Weibo: a Comparative Study

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Bullying at school is a worldwide health issue among adolescents. We use social media as a data source for a cultural comparative study on bullying. We identify several differences in micro-blogs of school bullying between Twitter (mostly representing the USA) and Weibo (mostly representing China), and propose possible explanations.

## Data Collection



## Keyword filtering

- Hard to find enough bullying posts and train a good classifier

Tiny fraction of all posts, varied nature of bullying posts

- Introduce unknown sampling bias

All conclusions in the paper are subject to this bias.

-Twitter: Streaming API, remove retweets

{bully, bullied, bullying} AND

{college, university, school, class}

-Weibo: Keyword search function, original posts only

{凌辱, 欺负, 欺凌, 欺辱, 欺侮, 欺压, 侮辱} AND

{学, 校, 班}

## Expert Annotation

- Remove false positives and ensure the quality of our results

	Twitter	Weibo
#Keyword filtered posts collected in 2012	756,449	75,044
#Annotated posts (Oct 11-14, 2012)	3,123	3,123
#Bullying traces in annotated posts	1121	811

## Fewer Victims in Weibo

Author's Role	Tweet		Weibo		p-value
Accuser	67	6.0%	11	1.4%	$6.5 \times 10^{-7}$
Assistant	1	0.1%	1	0.1%	$6.3 \times 10^{-1}$
Bully	72	6.4%	133	16.4%	$3.6 \times 10^{-12}$
Defender	26	2.3%	36	4.4%	$1.3 \times 10^{-2}$
Reinforcer	3	0.3%	1	0.1%	$8.5 \times 10^{-1}$
Reporter	429	38.3%	296	36.5%	$4.6 \times 10^{-1}$
Victim	523	46.7%	333	41.1%	$1.6 \times 10^{-2}$

Possible explanations:

Western	Asian	
Independent and separate self is strongly shaped	Relational self is emphasized; group harmony is highly valued	More defenders in Weibo (more social responsibilities)
	Saving face	Less victims in Weibo

## More Teasing in Weibo

Teasing may indicate lower severity of a bullying episode; It may represent positive social interaction among friends.

(Tweet) "Miss them. No, don't think if I miss the school but I miss my friends. I miss the moment when I bullying them. Well, I miss the foods too."

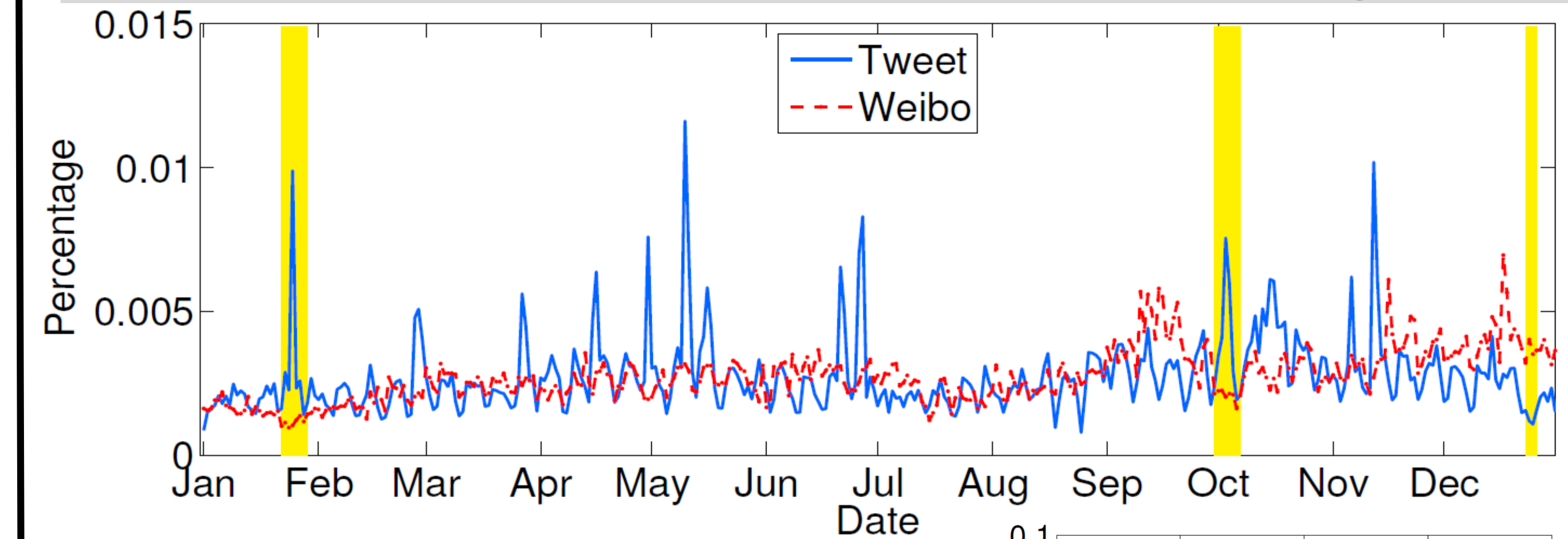
	Tweet		Weibo		p-value
Teasing	44	3.9%	70	8.6%	$2.3 \times 10^{-5}$

Possible explanation: more Weibo users talk about bullying as an interaction among friends, instead of a serious issue.

Author's Role	Tweet		Weibo		p-value
Accuser	11	25%	0	0%	$4.6 \times 10^{-5}$
Bully	10	23%	39	56%	$1.1 \times 10^{-3}$
Defender	1	2%	0	0%	$8.1 \times 10^{-1}$
Reporter	7	16%	10	14%	$9.7 \times 10^{-1}$
Victim	15	34%	21	30%	$4.6 \times 10^{-1}$

Possible explanation: for saving face, Weibo users tend to act as bullies instead of victims.

## Most Weibo Posts in the Evening



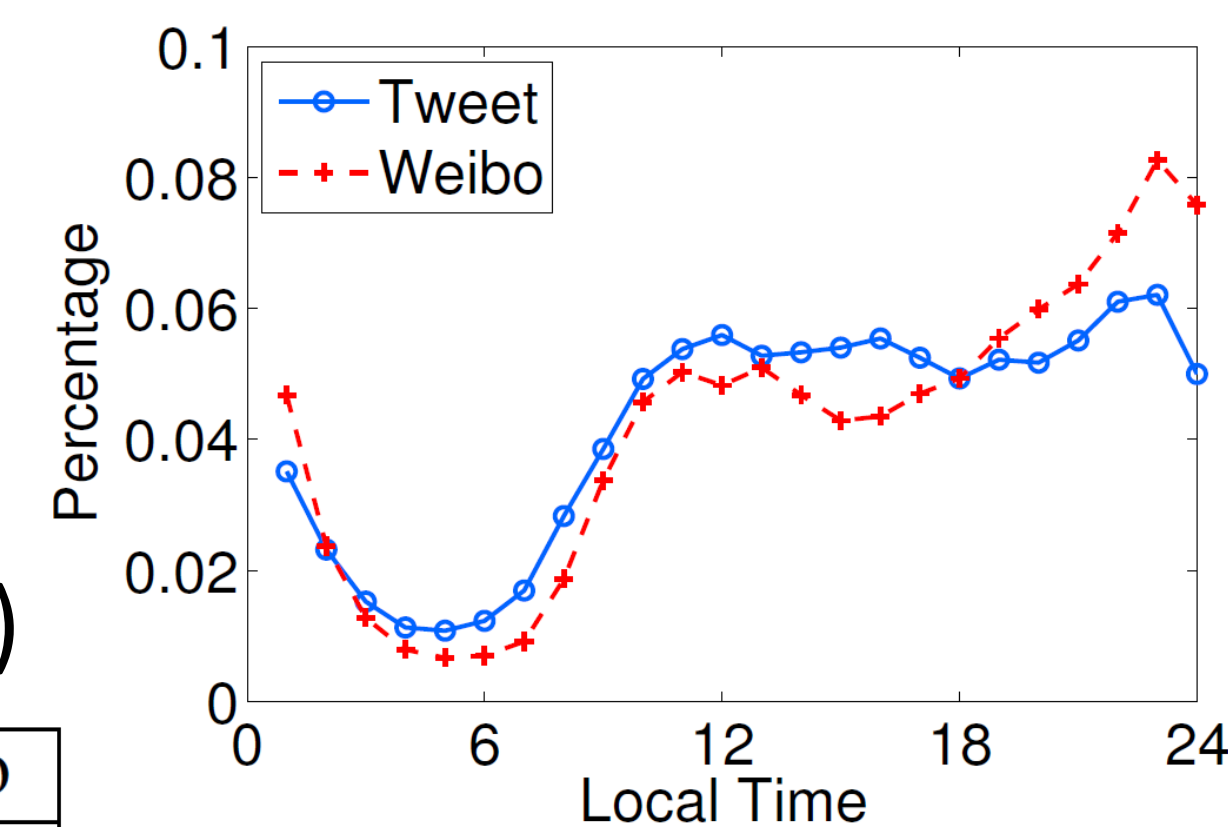
Both: Valleys on weekend/holidays.

Twitter: Several very high spikes (special events/news)

Weibo: relatively stable but slowly increasing (new users sign up?)

	In Semester	Off Semester	Off/In Ratio
Tweet	2194	1770	81%
Weibo	222	157	71%

Bullying or discussion are happening off-semester as well.



Perhaps, longer school day in China; different cellphone usage policy.

## Family Mentioned More in Weibo

Linguistic Inquiry and Word Count (LIWC) scores:

	Family	Friend	Humans
Tweet	0.61	0.25	1.84
Weibo	1.41	0.24	2.10

Possible Explanations:

- The significance of family in Asian Country may be higher.
- Chinese parents pay close attention to children's educational performance and environment.

(Weibo, translated) "There is one bully in my daughter's class. Several parents complain that he bullies other girls, grapping their faces, even pushing them from stairs. My daughter also told me many times. I think naughty is children's nature, but manners are also very important. Parents should not let their children be offensive. They should see a psychiatrist and apologize to other parents."