

A Large-Scale Study of ISIS Social Media Strategy

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ISIS Adept at Online Recruiting

Islamic State Most Adept Terrorist Group at Online Recruiting, Says FBI

By [Alex Grubbs](#) | July 7, 2016 | 9:21 AM EDT

(CNSNews.com) – A top [Federal Bureau of Investigation](#) (FBI) official told Congress on Wednesday that the Islamic State is the most adept terrorist group at using internet and social media propaganda to recruit new members.

“No group has been as successful at drawing people into its message as ISIL. ISIL’s extensive reach through the internet and social media is most concerning as the group continues to aggressively employ the latest technology as part of its nefarious strategy,” Michael Steinbach, executive assistant director for FBI’s [National Security Branch](#), said.



Or is it?

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Is ISIS's Social-Media Power Exaggerated?

The group is famously active on Twitter and has attracted thousands of foreign fighters. But to what extent is one related to the other?



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KATHY GILSINAN

FEB 23, 2015

GLOBAL

Today's Talk

- How big is ISIS community on Twitter?
- How influential is ISIS on other users?
- How do regular users respond to ISIS?

Dataset

Twitter Dataset: (Seed)

- All Arabic tweets posted in 2015

All Accounts	\approx 27 million
All Tweets	\approx 9 billion

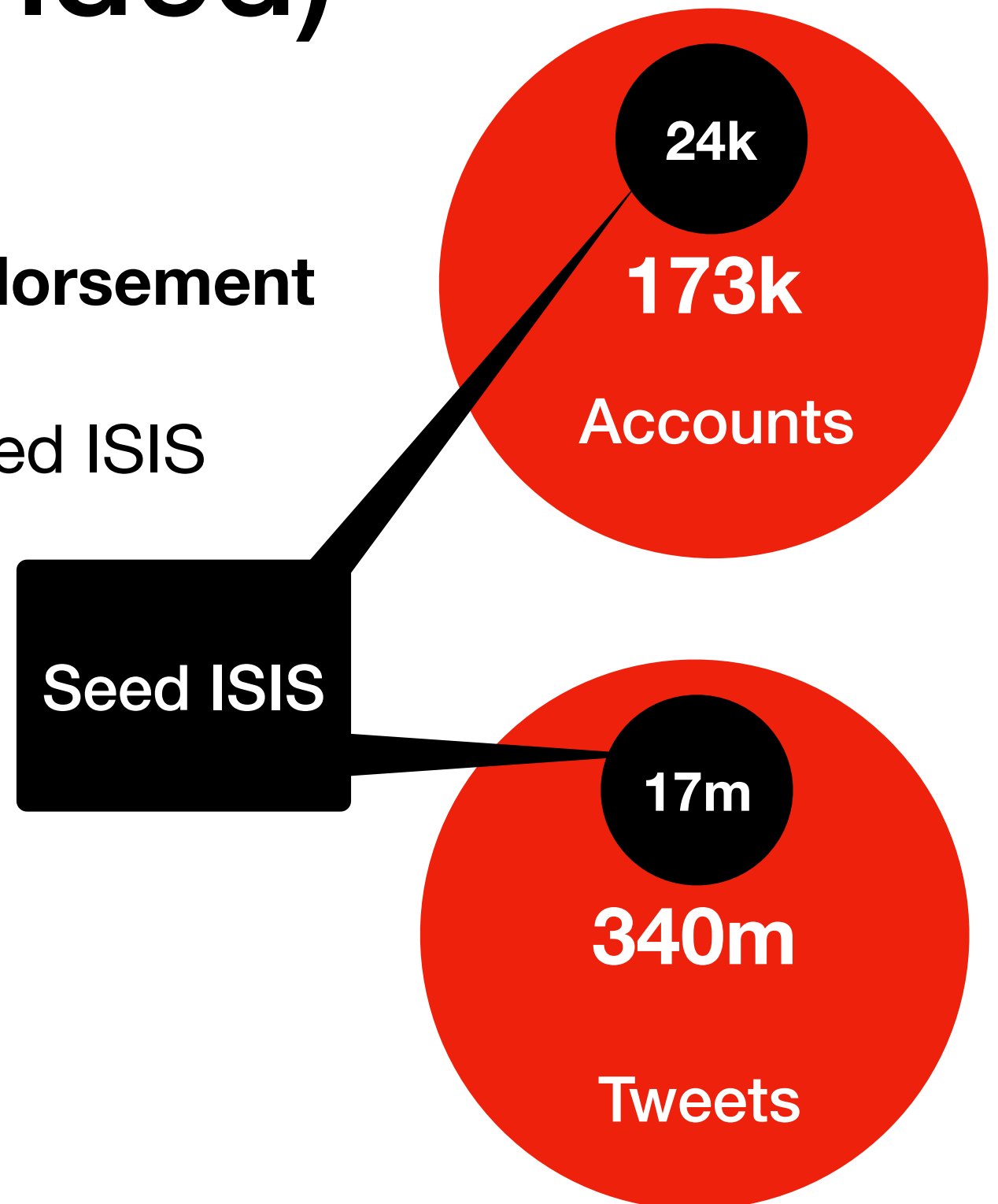
- Classification by the Anonymous group. **#OpISIS**
 - **24k** accounts
 - **17m** tweets



Ferrara et. al., 2016

Twitter Dataset: (Expanded)

- Assumption: **Retweet = Endorsement**
- **Suspended** retweeters of seed ISIS accounts:
 - **173k** accounts.
 - **340m** tweets.



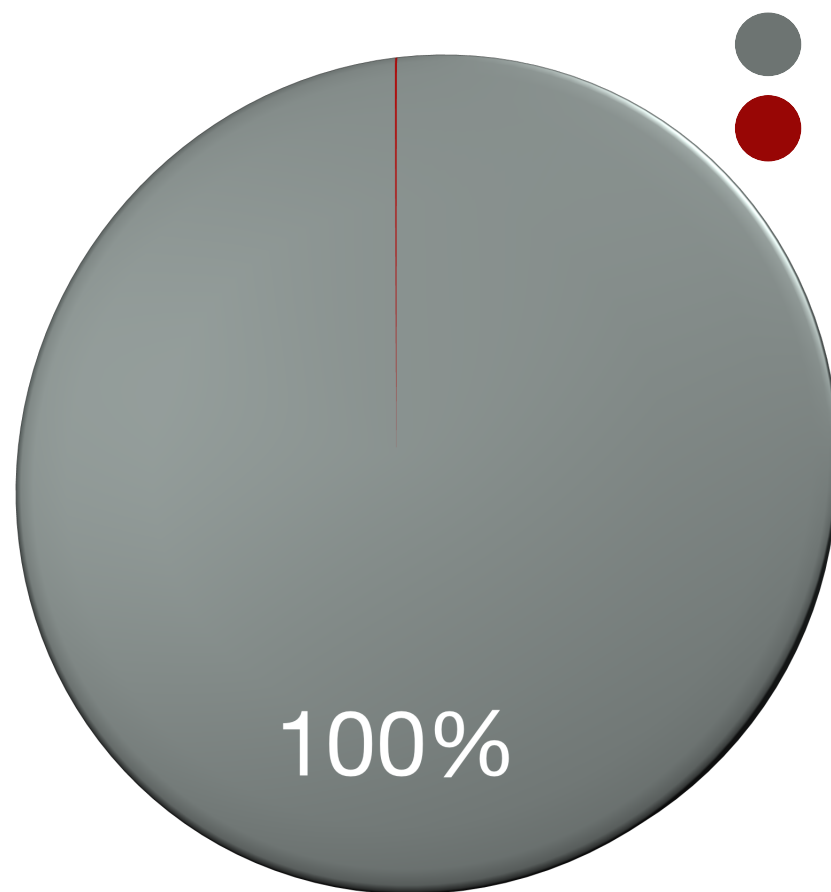
Twitter Dataset: (Validation)

- Seed accounts were on the **Anonymous list**
- All accounts were **suspended** by Twitter
- **Manual validation** of 1k seed accounts and 1k expanded accounts show accounts are 99% and 97% pro-ISIS respectively.

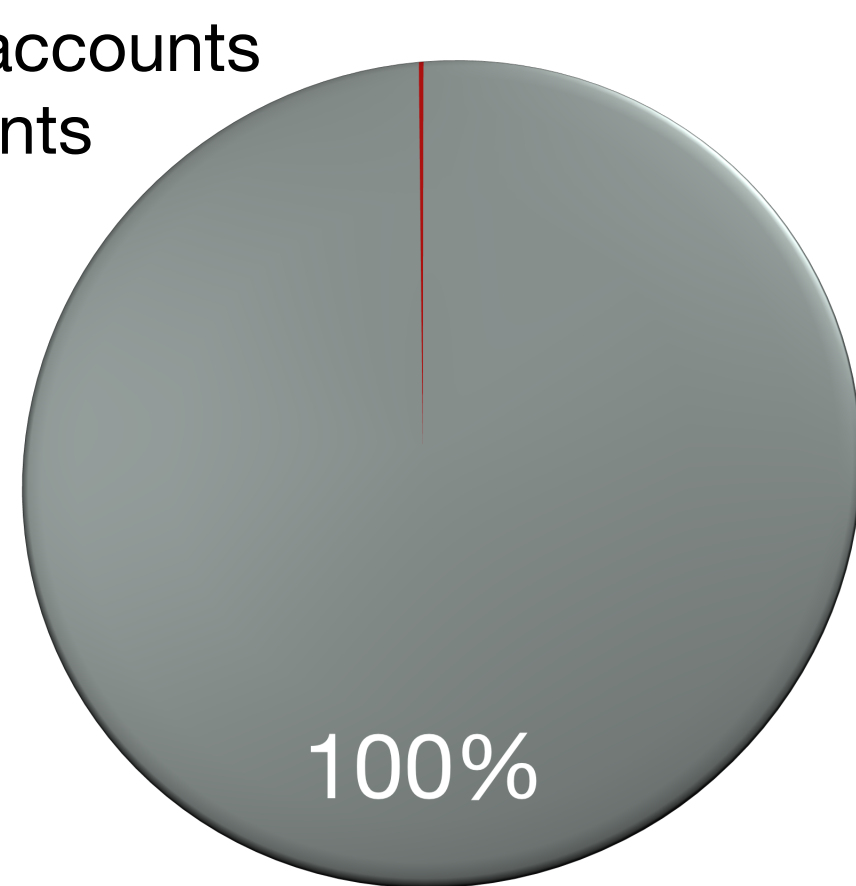


Twitter Dataset (Seed)

Users

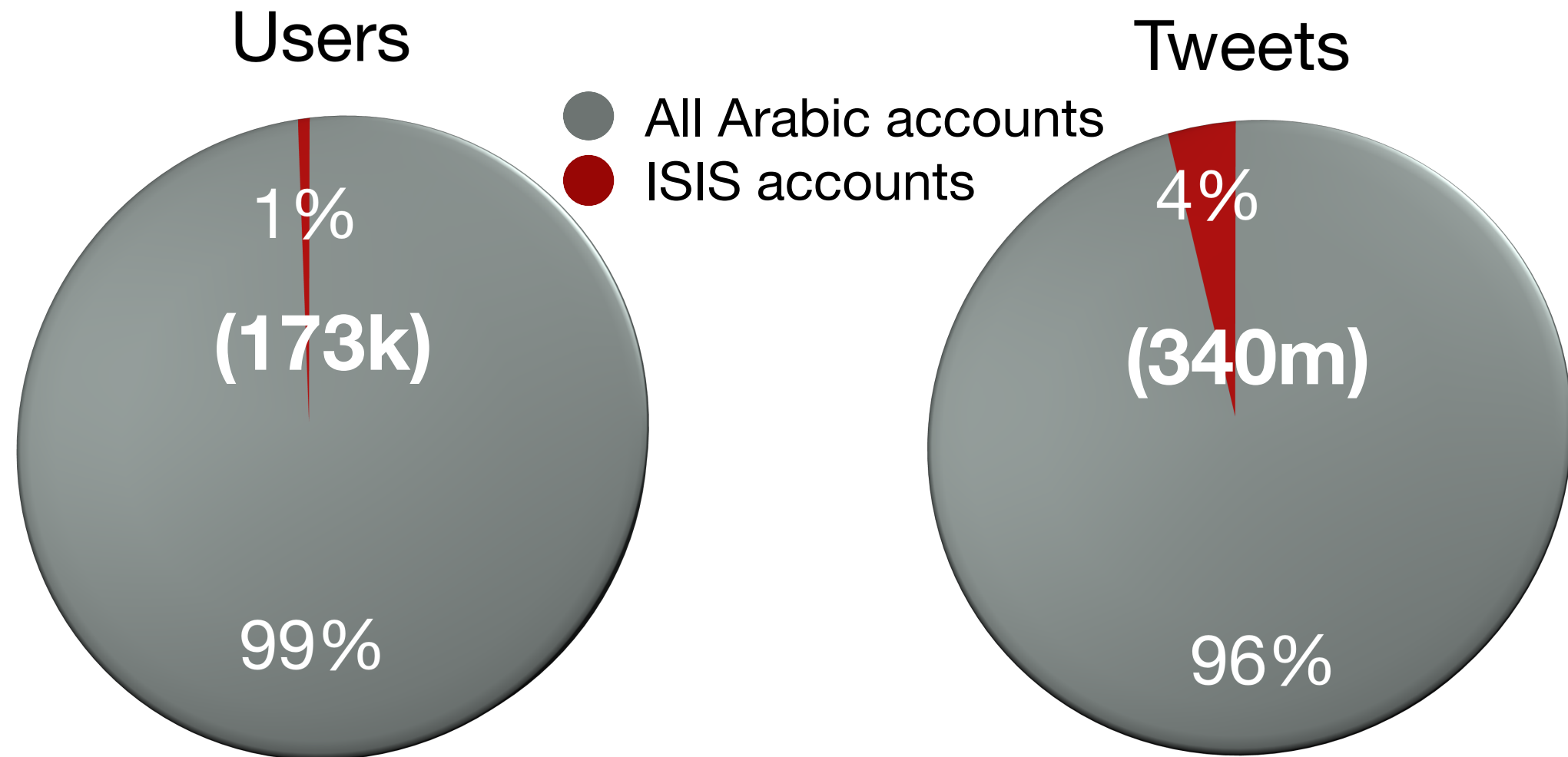


Tweets

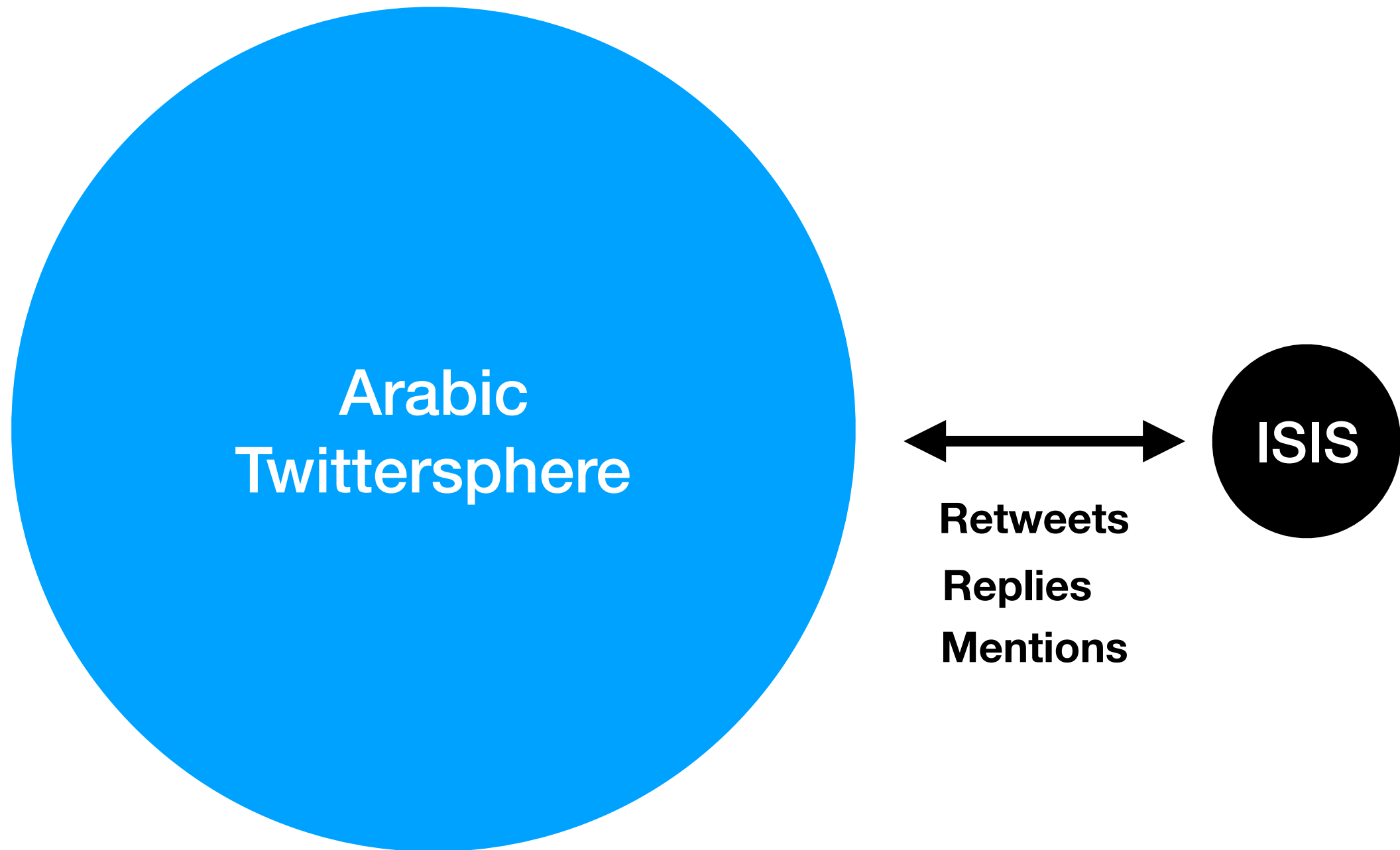


- All Arabic accounts
- ISIS accounts

Twitter Dataset (Seed + Expansion)

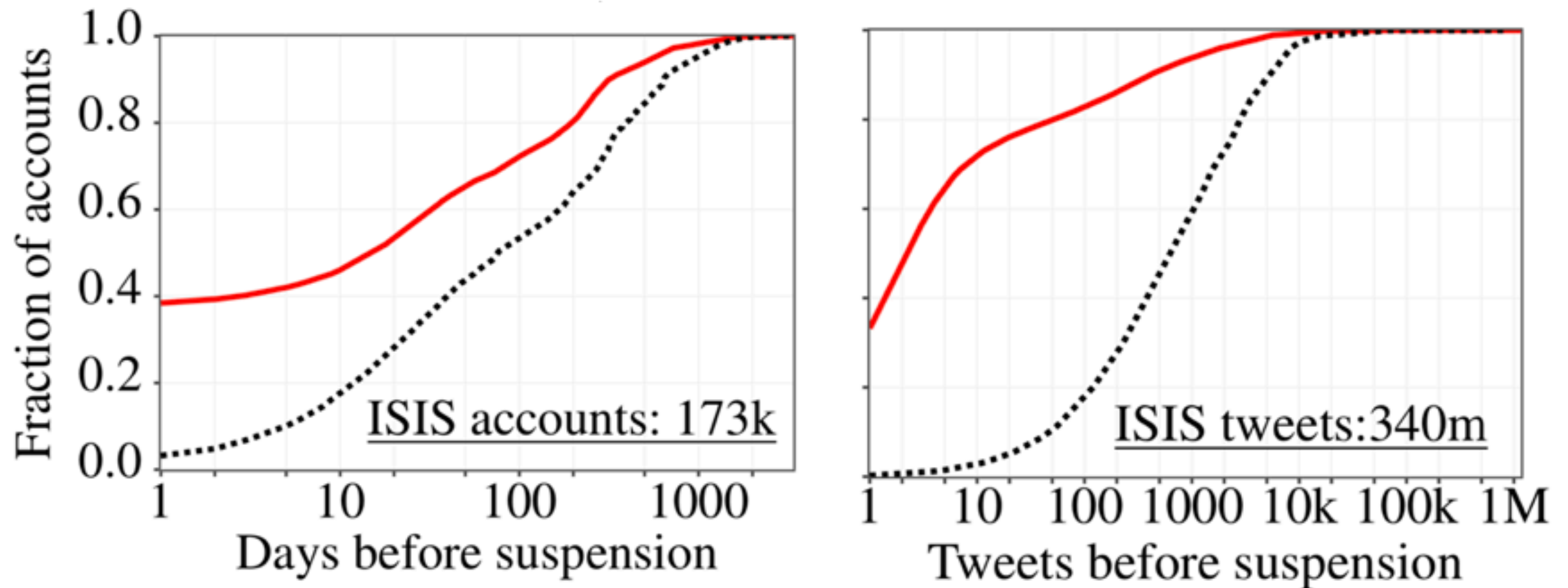


Twitter Dataset (Interactions)



Size and Influence

ISIS accounts live longer



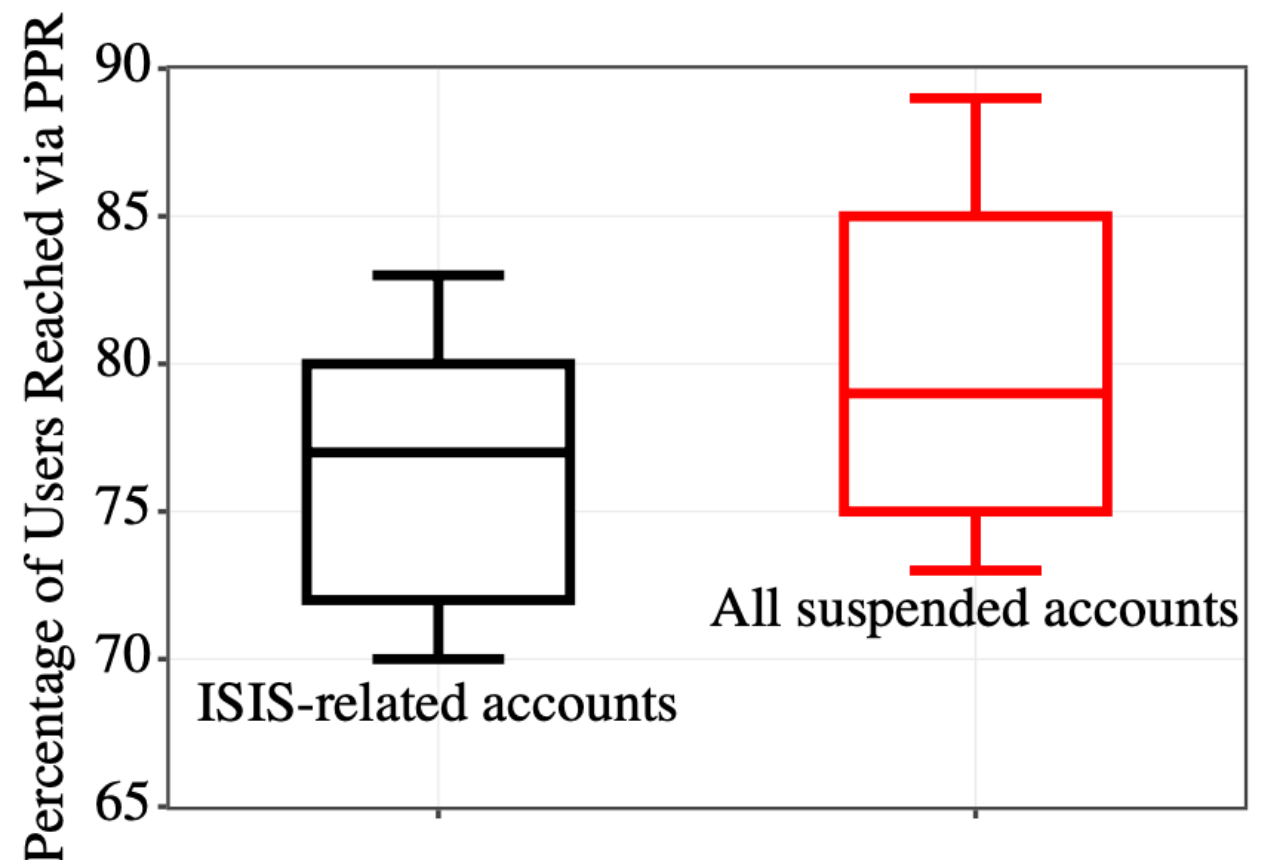
- All suspended accounts
- ... ISIS accounts

How big is ISIS?

- **Method:** Build Retweet Graph and run Personalized PageRank for 100 randomly selected ISIS accounts. Check if top reached users are already recognized as ISIS. Repeat for 10 times.

- Findings:

- 75% accounts reached are already in the ISIS dataset
- 80% were suspended

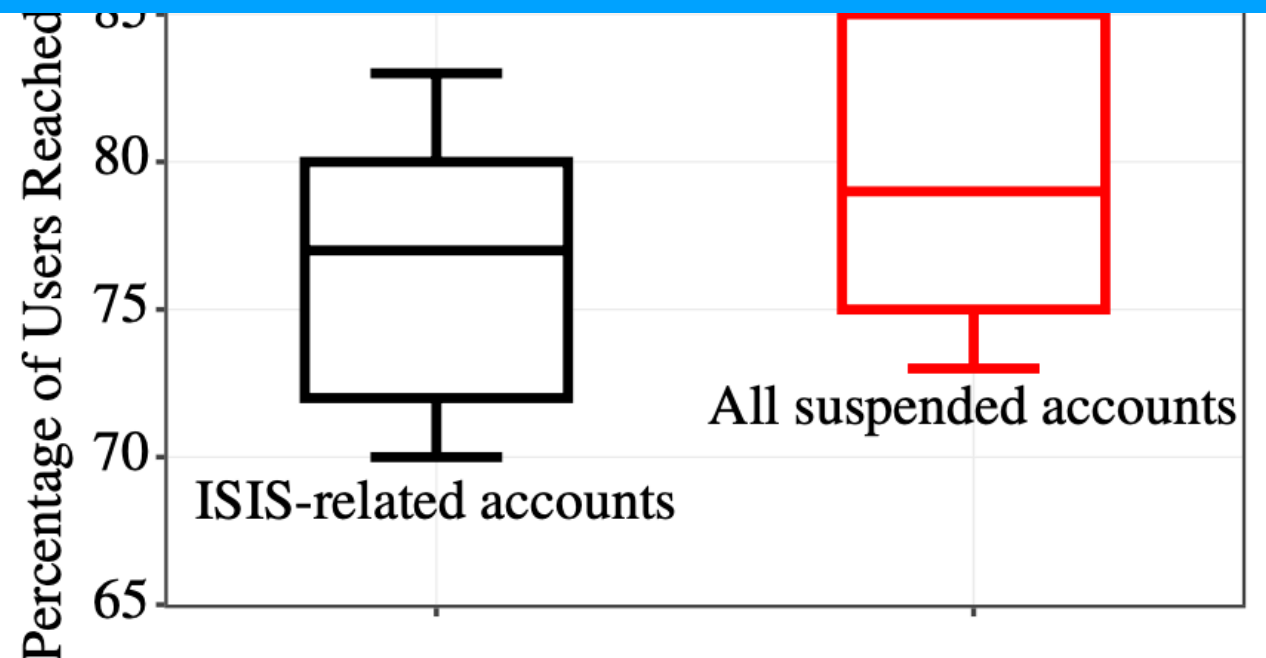


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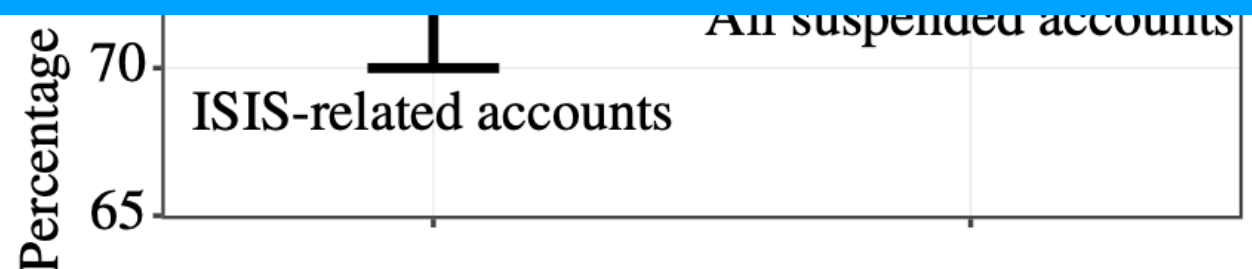
How big is ISIS?

- **Method:** Build Retweet Graph and run Personalized PageRank for 100 randomly selected ISIS accounts. Check if top reached users are already recognized as

Our dataset represents roughly 75% of all pro-ISIS accounts active in 2015.

Pro-ISIS accounts in 2015 were between 200k and 225k.

- 80% were suspended

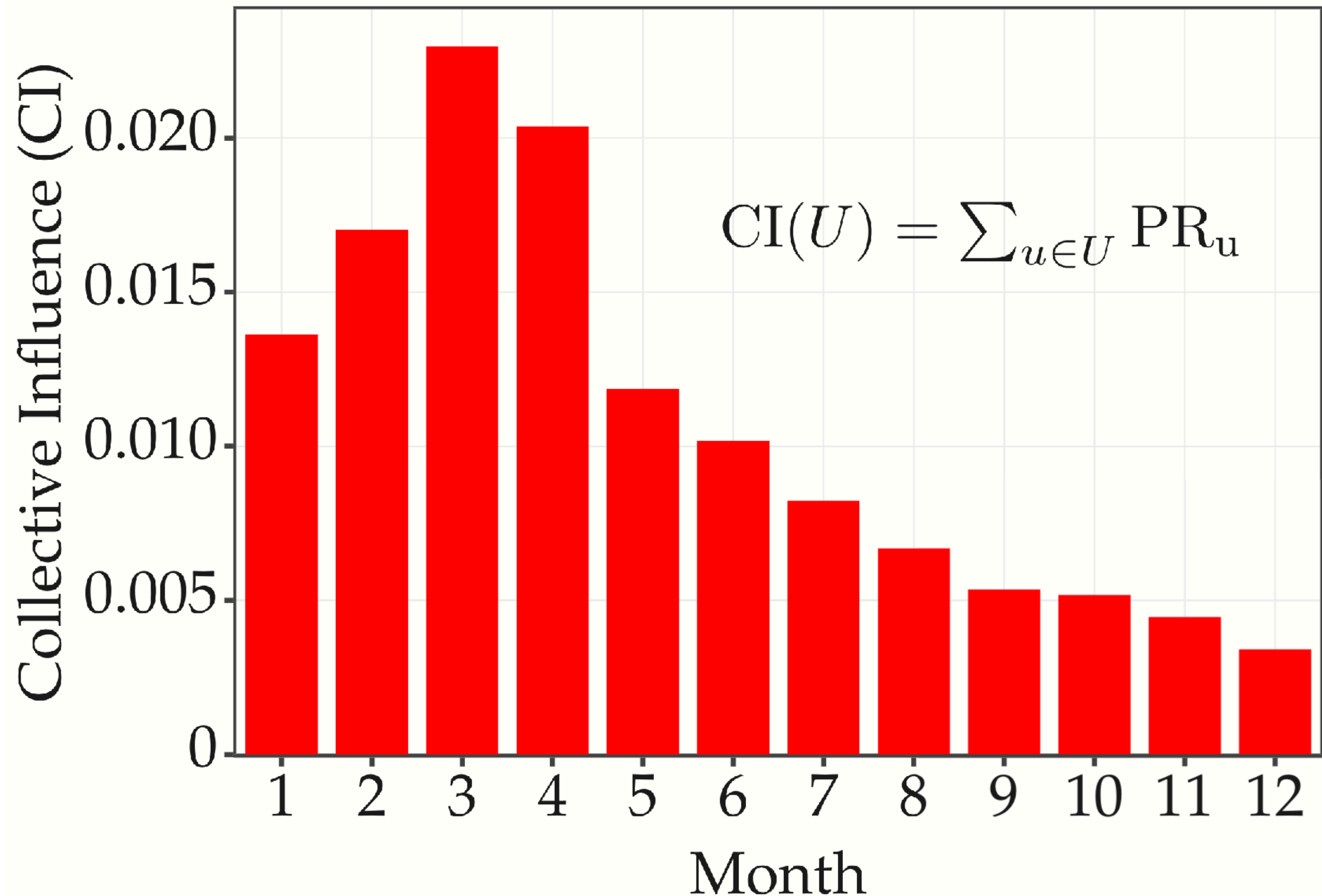


How influential is ISIS?

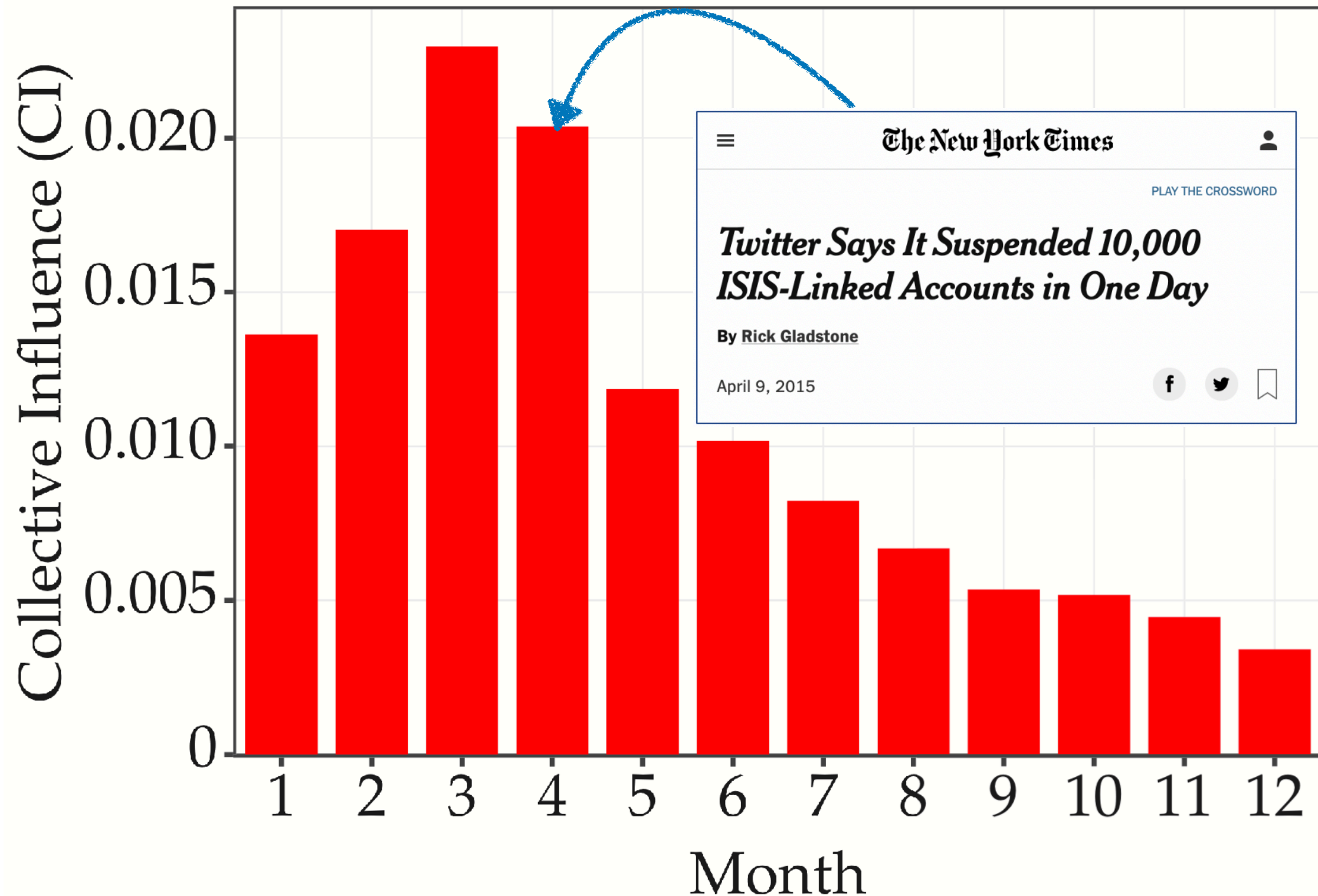
- We build Retweet Graph of all users
- We run PageRank on the graph
- We calculate collective influence as the sum of individual PageRank values:

$$CI(U) = \sum_{u \in U} PR(u)$$

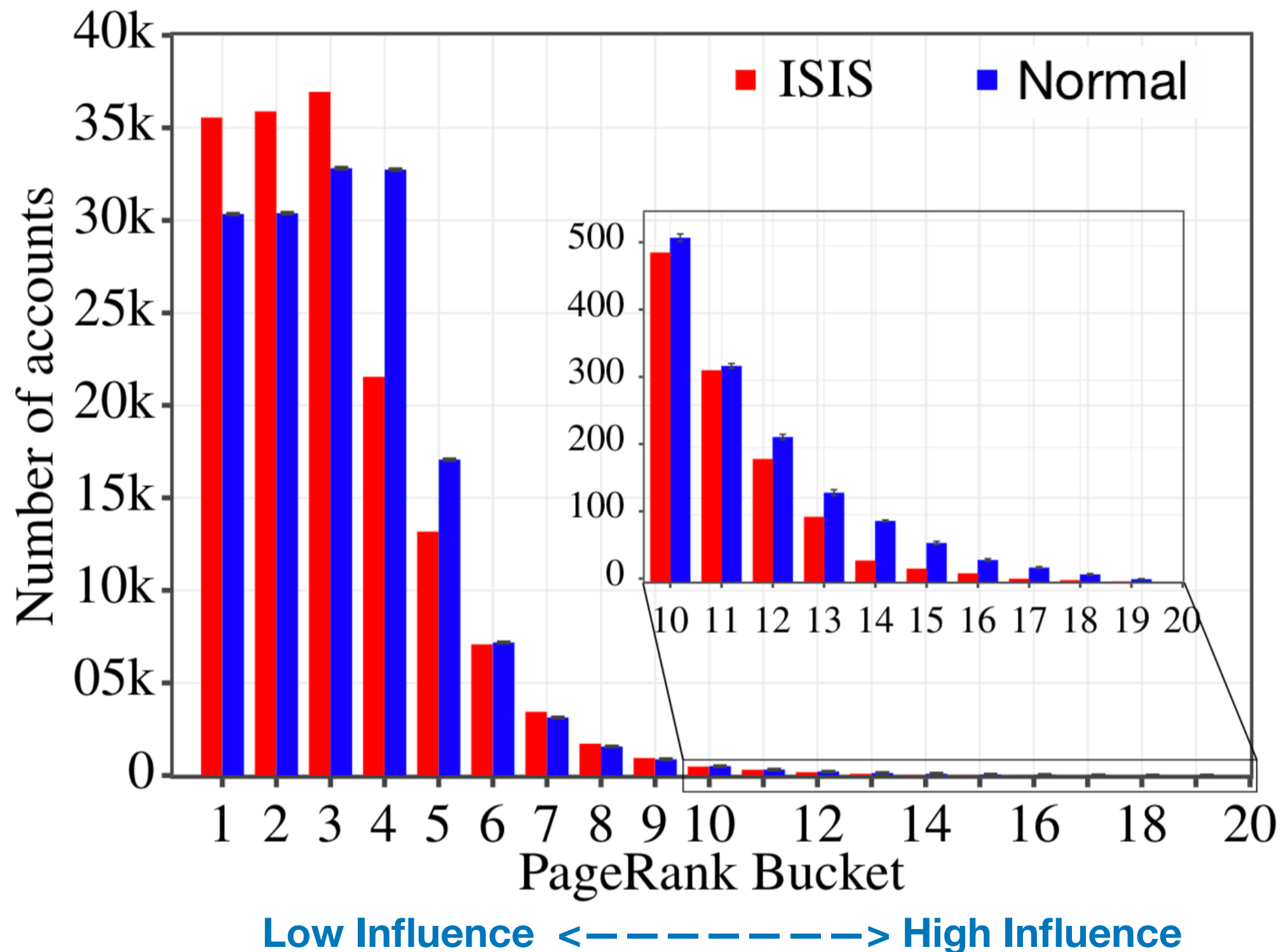
ISIS lost influence over time



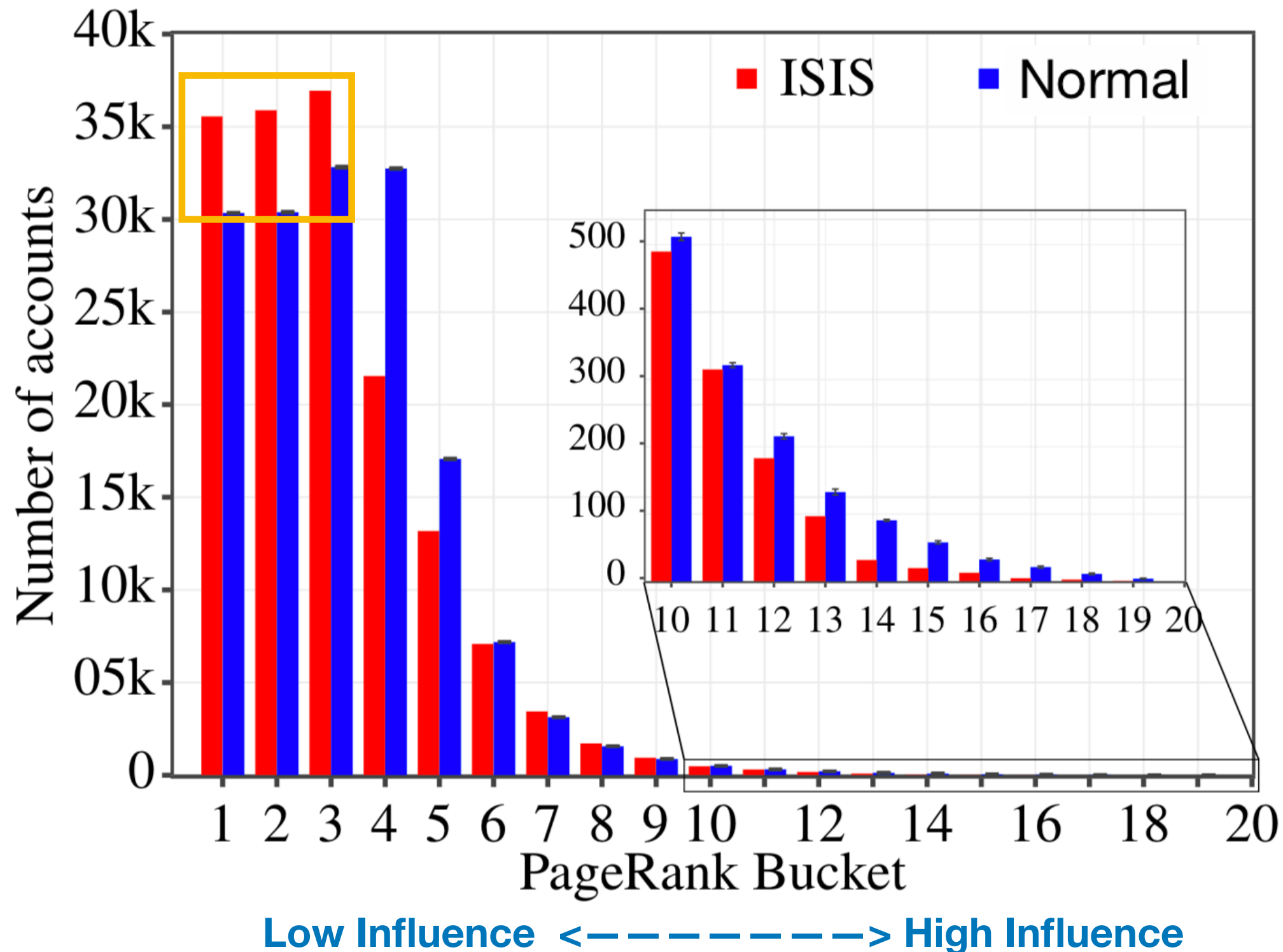
ISIS lost influence over time



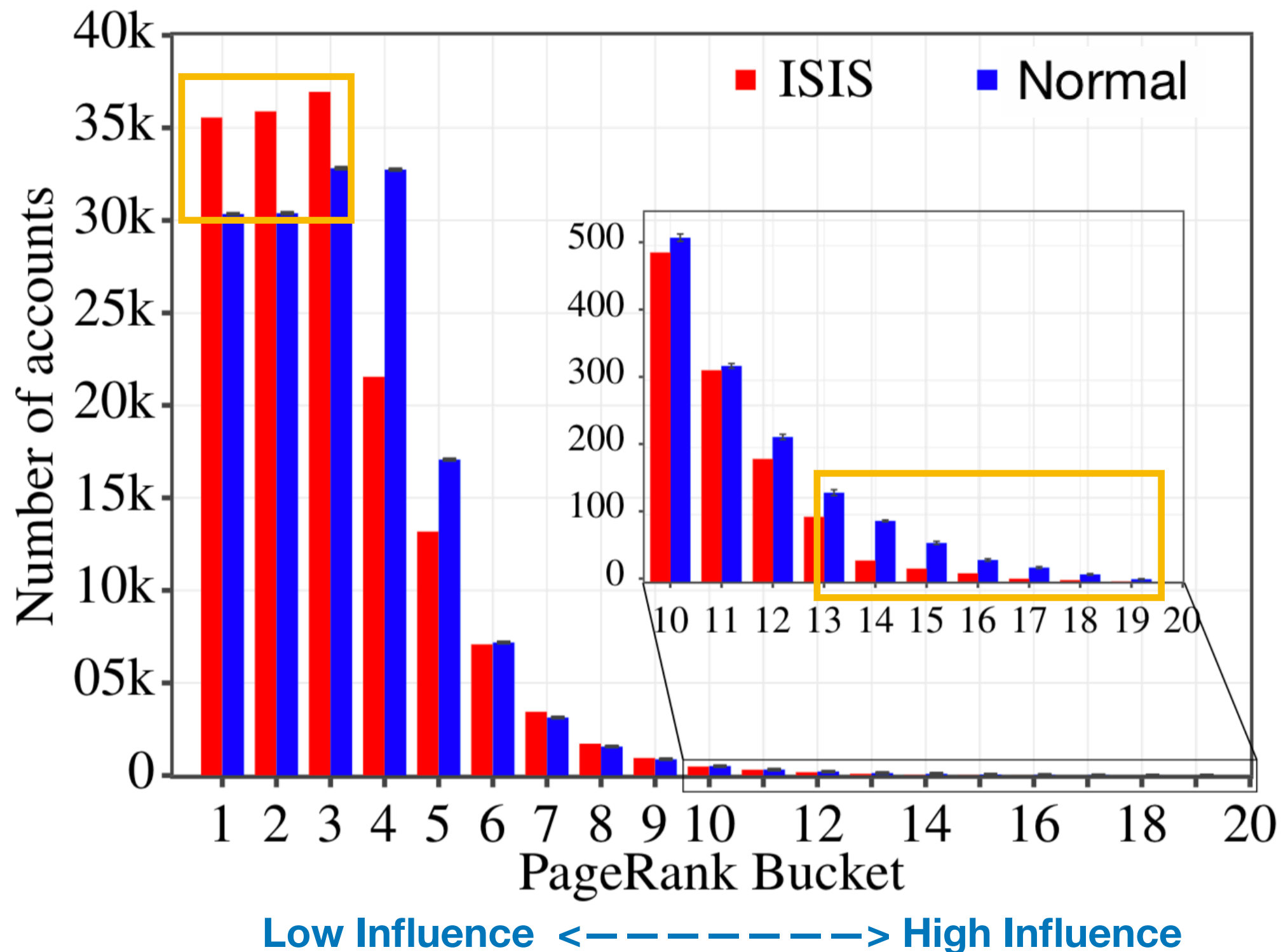
ISIS influence is less than average



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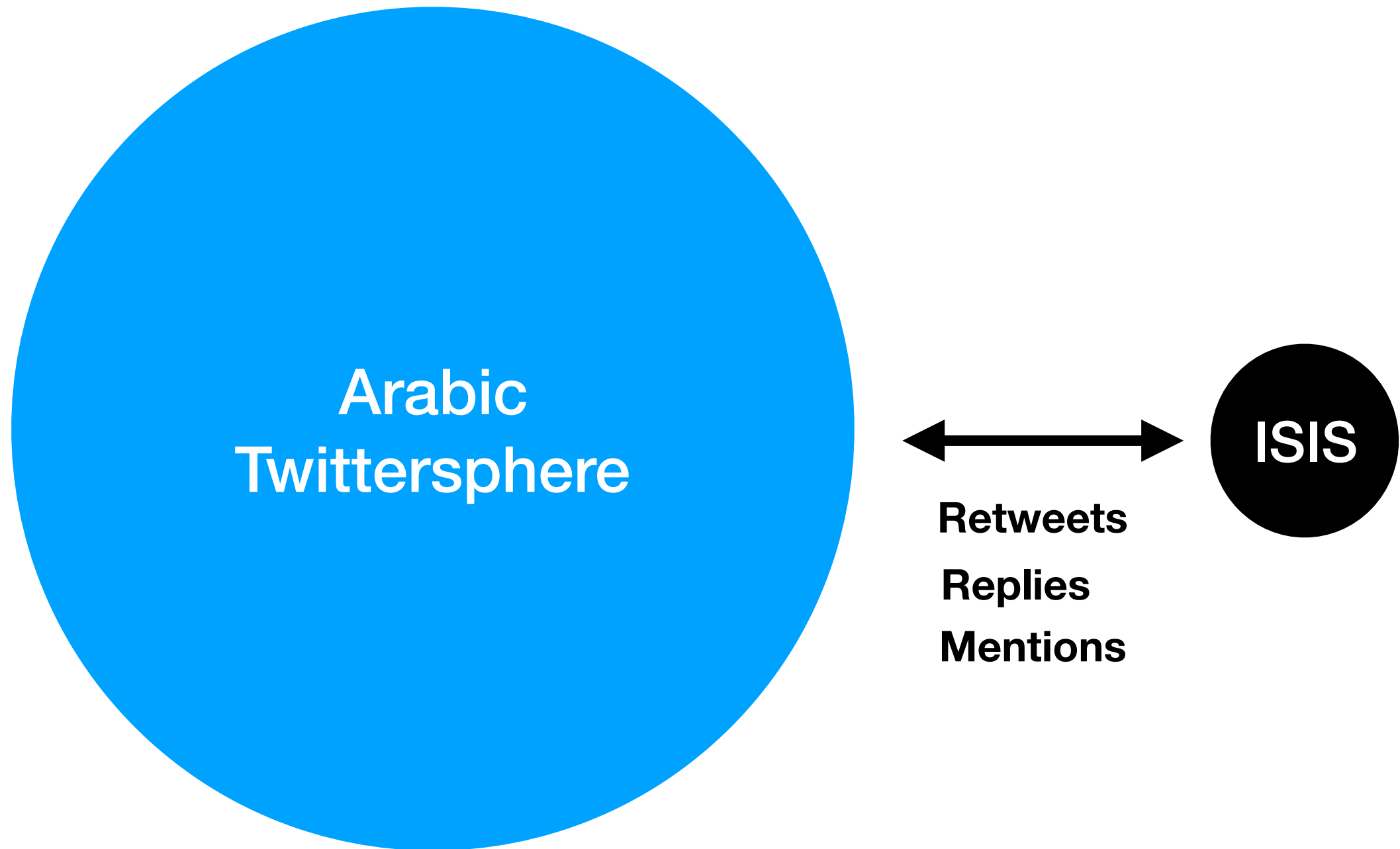
User Engagement

How do users respond to ISIS?

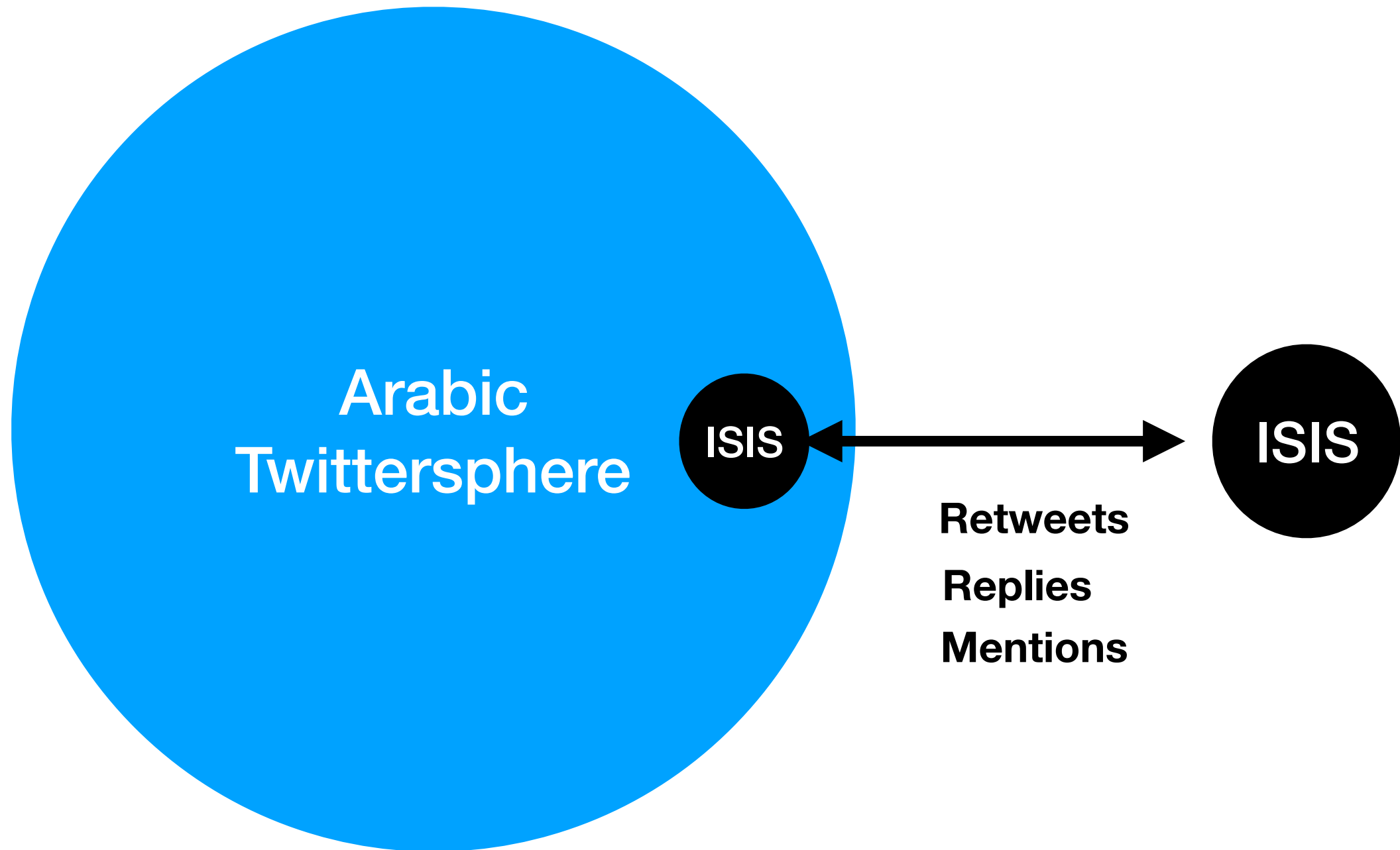
- Most repliers to ISIS were suspended (76%)
 - 97% of them found to be pro-ISIS
- The other 24% un-suspended repliers found to be 68% pro-ISIS
 - Only 2.4% were anti-ISIS!



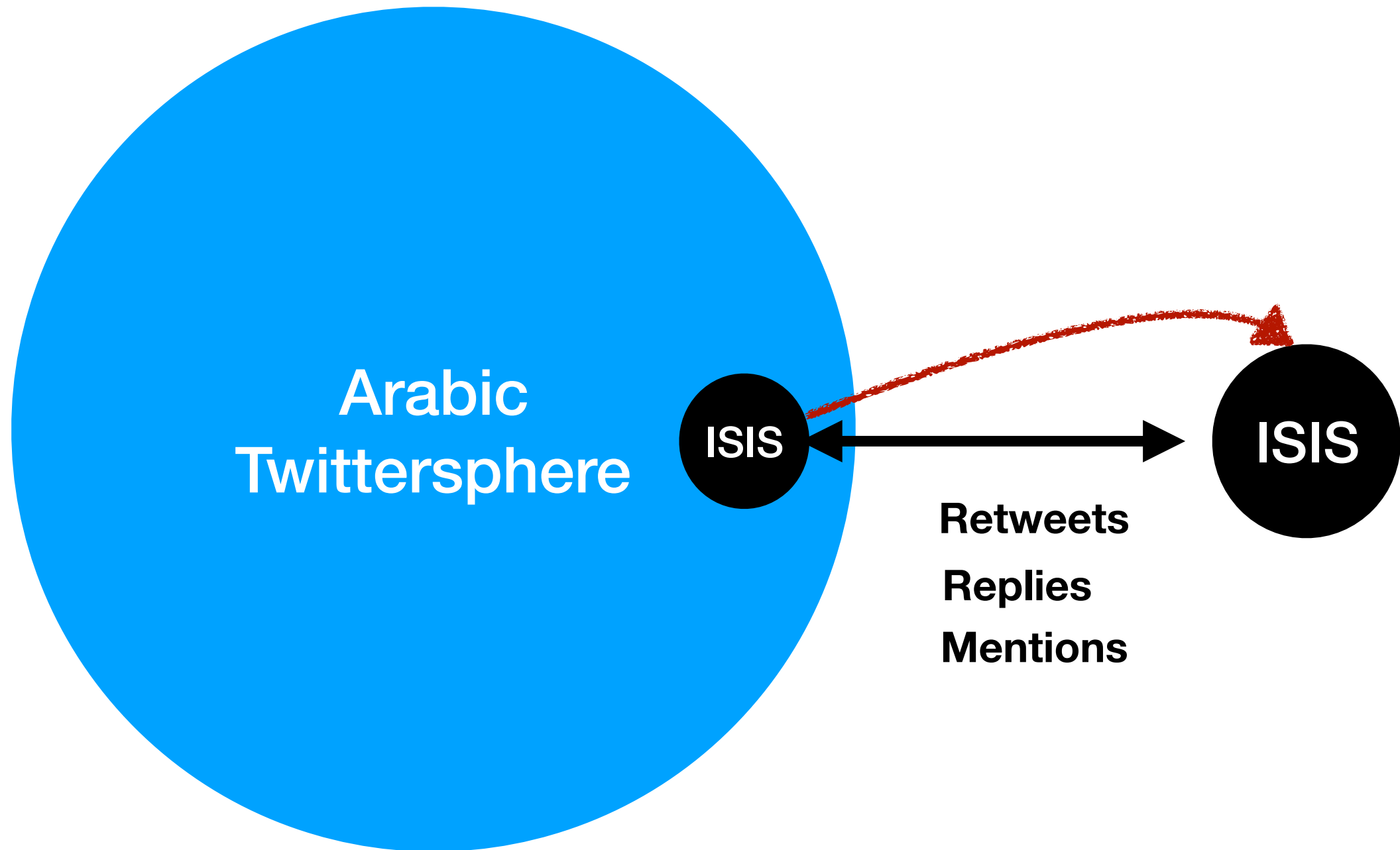
An isolated community



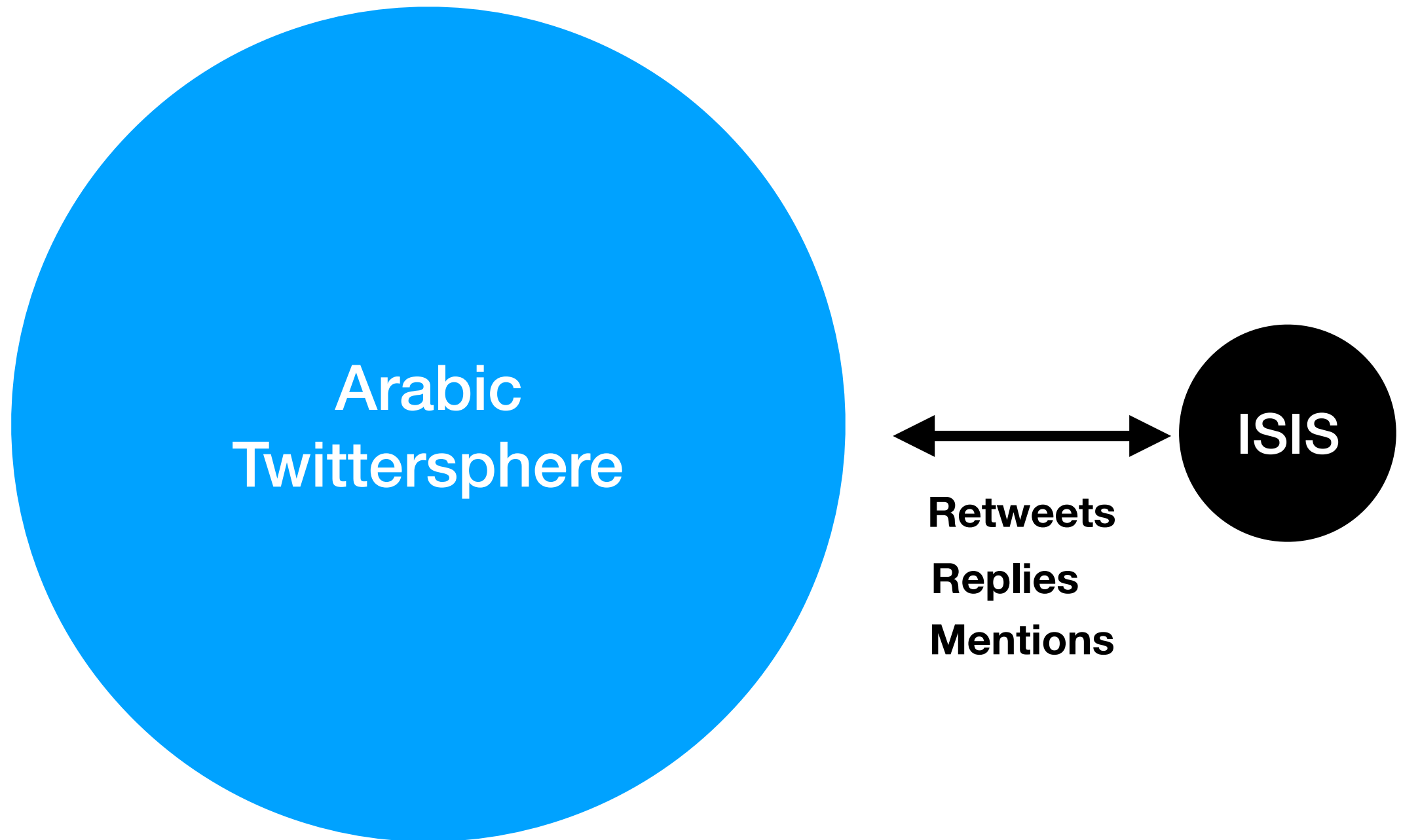
An isolated community



An isolated community



An isolated community



How does ISIS message evolve?

- We check the use of pro-ISIS hashtags at different stages in the members lifetime. [Magdy et. al., 2015]
- Accounts are relatively consistent.

# At birth	# Mid-life	# At death
Islamic State	Islamic State	Islamic State
Forgiveness	Caliphate News	Syria
Supplication	Caliphate State	Caliphate State
Daesh	Daesh	Nusrah Front
King Abdullah Death	Decisive Storm	Aleppo
Charlie Hebdo	Takrit	Daesh
Saudi	Saladin Area	Fatah Army
Supplications	Ramadi	Iraq
Forgiveness	Nusrah Front	Aljazeera

*** Hashtags in red are pro-ISIS**

Limitations

- Only Arabic content (but the majority of ISIS content is Arabic)
- Only one year (2015) in the middle of ISIS's existence
- Only the Twitter platform

ISIS on Twitter (Summary)

- Although ISIS presence on Twitter was big, the group **mostly interacted with itself** with little interest from the Twitter community.
- Pro-ISIS accounts were mainly created for that matter.
- The influence of the ISIS accounts was **less than average**.
- Banning ISIS accounts is effective in limiting their influence.
- **Dataset:** Talk to us!