Objectives

Ipsos MORI, on behalf of the Department for Business, Innovation and Skills, are conducting a year long research exercise into how people talk about science. Using our social media tracking programme we are able to see who is talking about science online, what they are talking about, and when. In essence – what makes science ‘sticky’?

July – October (Q3) objectives:

• To continue to examine the mechanics by which particular stories spread over social networks
• Search subjects – the badger cull and hydraulic fracturing (“fracking”)
• The monitoring period this quarter was extended by a month to encompass more of the badger cull period
Method

Using our in-house social media platform we are able to measure internet traffic volumes on different subjects across a range of online sources, including Twitter, forums, blogs, news sites, etc.

Over this period we searched for mentions relating to the badger cull in southwest England and fracking.

Our search terms:

• ("Bovine Tuberculosis" OR "Bovine TB" OR "badger cull") NEAR/10 (scien* OR expert* OR tests))
• (fracking OR shale) NEAR/10 (scien* OR evidenc* OR tests)
Headline findings
The badger cull and fracking – UK internet traffic

The badger cull story peaked around defined events.
The fracking story was more of an ongoing debate.

In pursuing the badger cull, the government is being anti-science.
The cull will be bad for farmers, taxpayers and wildlife, and most of all it flies in the face of scientific evidence.

21 October 2013 Last updated at 18:12
Badger group disruption aids TB flow
By Helen Briggs
BBC News

Balcombe fracking protests

Green MP Lucas faces prosecution
In context of the year...

Volume of online conversation

January  February  March  April  May  June  July  August  September  October

Horsemeat  Russian Meteor  Measles  GM food  Badger cull  Fracking
Both stories are predominantly Twitter-based

Fracking

- 74%

- Blogs: 3%
- Forums: 4%
- Traditional news: 18%

Badger culling

- 90%

- Blogs/forums: 1%
- Traditional news: 9%

GM
- Measles
- Meteor
- Horse-meat
The badger cull
Science-led disease control
Driven by events

Online discussion of the badger cull was strongly linked to announcements and events.

- 27th August – Somerset cull begins
- 17th October – Further update by the Environment Secretary to House of Commons on progress of badger culls
- 3rd September – Simon King, nature photographer, criticises the cull
- 9th October – Environment Secretary updates House of Commons on progress of badger culls
- 23rd October – David Attenborough criticises the cull
Twitter also strongly driven by announcements and events

8 of the top 10 most shared stories in Twitter were around two dates – the day before the Somerset cull started (26th August) and the Gloucester cull extension (23rd October)

<table>
<thead>
<tr>
<th>Top Stories</th>
<th>TWEETS</th>
</tr>
</thead>
<tbody>
<tr>
<td><a href="http://www.theguardian.com/environment/2013/oct/21/stop-badger-cull-immediately-nat">http://www.theguardian.com/environment/2013/oct/21/stop-badger-cull-immediately-nat</a></td>
<td>114</td>
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Strong presence of *The Guardian* articles too
**Who was talking?**

A high volume of Twitter traffic came from low-key individuals

<table>
<thead>
<tr>
<th>TWEETER</th>
<th>TWEETS</th>
<th>FOLLOWERS</th>
<th>ACCOUNT TYPE</th>
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<tbody>
<tr>
<td>@animallovers</td>
<td>80</td>
<td>633</td>
<td>Individual</td>
</tr>
<tr>
<td>@badgersni</td>
<td>71</td>
<td>1180</td>
<td>Organisational</td>
</tr>
<tr>
<td>@campaigner</td>
<td>70</td>
<td>3158</td>
<td>Individual</td>
</tr>
<tr>
<td>@cull</td>
<td>67</td>
<td>1534</td>
<td>Individual</td>
</tr>
<tr>
<td>@specific</td>
<td>65</td>
<td>7798</td>
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<tr>
<td>@accounts</td>
<td>53</td>
<td>1507</td>
<td>Individual</td>
</tr>
<tr>
<td>@lovers</td>
<td>48</td>
<td>472</td>
<td>Individual</td>
</tr>
<tr>
<td>@campaigners</td>
<td>36</td>
<td>1281</td>
<td>Individual</td>
</tr>
<tr>
<td>@accounts</td>
<td>36</td>
<td>467</td>
<td>Individual</td>
</tr>
</tbody>
</table>

Total for tweeters: 585 tweets, 19260 followers

**Top ten most prolific tweeters – 9 in 10 are individuals:**

- Animal lovers
- Campaigners
- Cull-specific individual accounts
- Individual accounts
Intensely partisan on Twitter

Twitter traffic was entirely anti-cull – the nature of the subject only attracts the strongly held opposition of some

<table>
<thead>
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<tbody>
<tr>
<td>#stopthecull</td>
</tr>
<tr>
<td>#badgermonday</td>
</tr>
<tr>
<td>#badgercull</td>
</tr>
<tr>
<td>#badger</td>
</tr>
<tr>
<td>#theslaughterhasbegun</td>
</tr>
<tr>
<td>#cull</td>
</tr>
<tr>
<td>#badgers</td>
</tr>
<tr>
<td>#stopthebadgercull</td>
</tr>
<tr>
<td>#industrylapdog</td>
</tr>
<tr>
<td>#savethebadger</td>
</tr>
</tbody>
</table>

Pressure groups planned to get #stopthecull trending on Twitter

Pro-cull sentiment was only to be found on farmers’ forums
Twitter dominated online discussion of the cull

90% of internet traffic on the cull was Twitter-based, and the most frequently used terms were highly partisan.

The “Natural England science expert” was cited extensively as an authoritative source of anti-cull evidence.

The “anti-science” label comes from a Labour Party release and was shared widely.

* A representation of the frequency with which particular terms are present in the data.
The use of “science” in badger cull discussions was mainly limited to the invocation of scientific authority.

Over three quarters (79%) of all tweets about the cull used the words “science” or “scientific.”

Although the number who cited scientific sources, terminology or arguments was much lower – a function of the 140 character limit?

- 17% of tweets used the word “evidence”
- 14% of tweets mentioned “TB” or “bTB”
- Three tweets mentioned “perturbation”
26th August – the day before the Somerset cull started

The height of the story – a large presence for Labour and Mary Creagh (then shadow DEFRA Minister)

Word cloud* for results from 26th August:

In pursuing the badger cull, the government is being anti-science
The cull will be bad for farmers, taxpayers and wildlife, and most of all it flies in the face of scientific evidence

An article written by Mary Creagh was the tweeted 118 times in total across the monitoring period

* A representation of the frequency with which particular terms are present in the data
Fracking in England
Policy and protest
Driven by events but a low level story

Tax breaks to kickstart the fracking revolution: Bid to make Britain world leader in new dash for gas

19th July – tax breaks for fracking announced

No evidence that ‘fracking’ techniques pollute drinking water, say scientists bit.ly/ZRMx via @MailOnline

Iain
RT @]: So Tories are nervous about wrapping cigarettes in #plainpackaging without more evidence, but happy to encourage #fracking without it?
Driven by events but a low level story

25th July – 23rd August
Main anti-fracking protests at Balcombe

Higher level of conversation in mid August coincides with the height of the protests – but a number of stories drove these peaks.

- High Levels of Arsenic Found in Groundwater Near Fracking Sites: Scientific American

- Amazing coincidence that so many people at the anti-fracking camp know so much about science. #newsnight

- Fracking will keep energy prices low says Prime Minister David Cameron | UK | News | Daily Express
Driven by events

Fracking never reached very high volume online. Later on the peaks were driven by news media rather than social media.

Green MP Lucas faces prosecution

Brighton Argus
@brightonargus

Tests reveal oil at Balcombe site at centre of anti-fracking protests [bit.ly/1fChzoM]

25th September – Green MP Caroline Lucas to be prosecuted for part in protests
Traffic was driven from the bottom up – led by those with strongly held views but little public recognition

The most frequent Tweeters were little-known individual sources

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<tr>
<td>@...</td>
<td>368</td>
<td>752</td>
</tr>
<tr>
<td>@...</td>
<td>202</td>
<td>344</td>
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Four of the top ten most frequent were linked to the same individual

<table>
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<tr>
<td>@...</td>
<td>29</td>
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<tr>
<td>@...</td>
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<td>@...</td>
<td>28</td>
<td>12272</td>
</tr>
<tr>
<td>@...</td>
<td>26</td>
<td>1827</td>
</tr>
</tbody>
</table>

Friends of the earth

@eastbournefoe

Brighton-based bookshop

@MyriadEditions

Both industrial chemists/engineers

@...

@...

Sussex-based organisations reflect focus on Balcombe

Pro-fracking individuals also featured in the top ten most frequent
Fracking in forums

Here are five things they keep saying that are simply false. First, that shale gas production has polluted aquifers in America. Second, that it releases more methane than other forms of gas production. Third, that it uses a worryingly large amount of water. Fourth, that it uses hundreds of toxic chemicals. Fifth, that it causes damaging earthquakes. None is true.

On more general discussion forums
the debate on pros and cons was more science-based – and less civil

No evidence that fracking poisons water? Yeah right. See here for latest info on flooded fracking sites in Colorado.

More in depth discussions of fracking occurred in a variety of discussion forums

The OilBarrel article is further evidence that IGas is not just a shell company with its more conventional oil business. It is also building up a fracking reputation. A company is very wise in ensuring that there is plenty to fall back on in case its reputation gets disappointing in the UK, though I do not think that this will be the case, at least not in medium to long term.

Environmental forum threads comprised open discussions and anti-fracking announcements

Hi Isconomim
One of the major reasons Friends of the Earth is opposed to fracking is because it is a fossil fuel

Investment forums discussed the effect of the protests on UK policy and investment opportunities

I am looking at oil economics, and do not panic they are still looking good, oil at $65 dollars is still very good for oil shale economics and even as low as $35 dollars if the productivity increases in oil in the...

Local area forums discussed the pros and cons of fracking for the area – typically jobs versus increased traffic

So, perhaps the fracking argument needs an injection of reflection and proportionality. It MAY not be good for the environment, but we benefit from oil in every sphere of our lives and I think that's worth remembering too.
Bodies of evidence

Three types of evidence were cited in the discussion; partisan, neutral and comedic

**Neutral**

Frack on or frack off: Can shale gas save the planet?

12:00 08 August 2013 by Michael Brooks

Common sources: New Scientist, BBC

**Partisan**

Groundwater Contamination May End the Gas-Fracking Boom

Well water in Pennsylvania homes within a mile of fracking sites is found to be high in methane

Common sources: Guardian, Scientific American

**Comedic**

Only a 30% chance of Cthulhu, say fracking experts

19-04-12

The chances of shale gas exploration releasing a monstrous denizen of the underworld are less than one in three, experts have claimed.

Common sources: Daily Mash

Partisan sources were the most commonly cited
Citing evidence

Both sides used “scientific studies” and “scientists” to promote their point of view

Pro Fracking sources often originated from Government or industry sources

Anti fracking sources tended to come from scientific sources, or put a critical spin on neutral sources

Unlike in other debates, international examples frequently appeared
Both stories were catalysed by political debate...

Opponents to fracking were especially vocal over social media networks, but lower party political involvement meant the story was relatively low-volume.

The involvement of a prominent Labour politician and The Guardian newspaper, as well as the defined dates for the cull, drove higher peaks of traffic on badger culling.

Perhaps also the greater popular appeal of badgers played a role.
…but fracking was less strongly identified with any party

No mainstream party voiced direct opposition to fracking, which contributed to low coverage on the topic

Without national media or political backing there was no central narrative for people to latch on to
Word clouds on fracking conversations reveal a greater proportion of technical terms than in badger culling.

But it is unclear if this reflects a less scientific/technical public conversation on the cull, or less political influence on the terms of the fracking debate.

Word clouds are a representation of the frequency with which particular terms are present in the data.
The two stories reinforce the importance of backing from traditional media sources to wide online coverage.

Fracking and badger culling can be viewed as relatively ‘niche’ areas compared to the economy or immigration, but the intervention of a prominent Labour shadow Minister and a national newspaper drove a great deal of traffic on badger culling.

By contrast, without backing from a mainstream source fracking did not reach the same level of internet traffic. Preserving badgers also has broader public appeal.

The level of discussion involving science and scientists in both topics was relatively high, suggesting that people were using science to support their views on these topics.

However, internet traffic on both subjects was strongly one-sided, meaning that the level of debate was limited.