

# Are Open News Systems Credible?

## *An Investigation Into Perceptions of Participatory and Citizen News*

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**Abstract:** The growth of the web has led to a shift in the news industry and the emergence of novel news services. Due to the importance of news media in society it is important to understand how these systems work and how they are perceived. Previous work has ranked news systems in terms of their openness to user contribution, noting that the most open systems (such as YouTube) are typically not viewed as news systems at all, despite having most of the same functional characteristics. In this paper we explore whether credibility is an appropriate characteristic to explain this perception by presenting the results of a survey of 79 people regarding their credibility assessments of online news websites. We compare this perceived credibility with the openness of the systems as identified in previous work. Results show that there is a modest but significant correlation between the openness of a news system and its credibility, and suggest that credibility is an appropriate if imperfect explanation of the difference in perception of open and closed news systems.

## 1 INTRODUCTION

Over the past decade the web has changed the way that many interact with the news, blurring boundaries between production and consumption, and creating new models of journalism which are described by terms such as “produsage”, “participatory journalism”, and “civic journalism”. In 2014 it was found that half of social network users shared news on their social network accounts, 46% of users discussed news on these sites, and roughly 10% of users had published news videos they made themselves (Mitchell, 2014). Because of the position of the news media in society it is important to understand how these new web-based news systems function and how people perceive and interact with them.

Our previous work has undertaken systematic analysis of the news processes for a variety of different news systems, and pointed out the confusion of terms used to describe them (Scott et al., 2015). This built on previous analyses (particularly that presented in Domingo et al. 2008), and instead of categorizing systems into discrete groups, placed them on a spectrum according to their level of openness. This produced the spectrum of 32 news systems shown in Figure 1.

In this work, a difference was identified between the way closed systems and open systems were perceived (Scott et al., 2015), but this difference was not elaborate upon. It seems intuitive that the spectrum ranges from traditional media outlets on the left to new social media on the right, though this raises the question as to what measures reflect this difference. This paper will investigate if this can be explained by the perceived credibility of the systems.

## 2 BACKGROUND

Credibility is a measure of how “believable” a piece of information is (Fogg, 1999), and has been considered one of the key elements in judging news systems (Aalberg and Curran, 2011). Common factors linked to credibility include accuracy, balance, level of bias, fairness, and honesty (Hellmueller and Trilling, 2012).

Online news systems bring with them a unique set of challenges related to assessing credibility. With the web decreasing the cost of publishing information, the gate-keeping role of journalists is being challenged, making individuals personally responsible for assessing the credibility of much of the media they

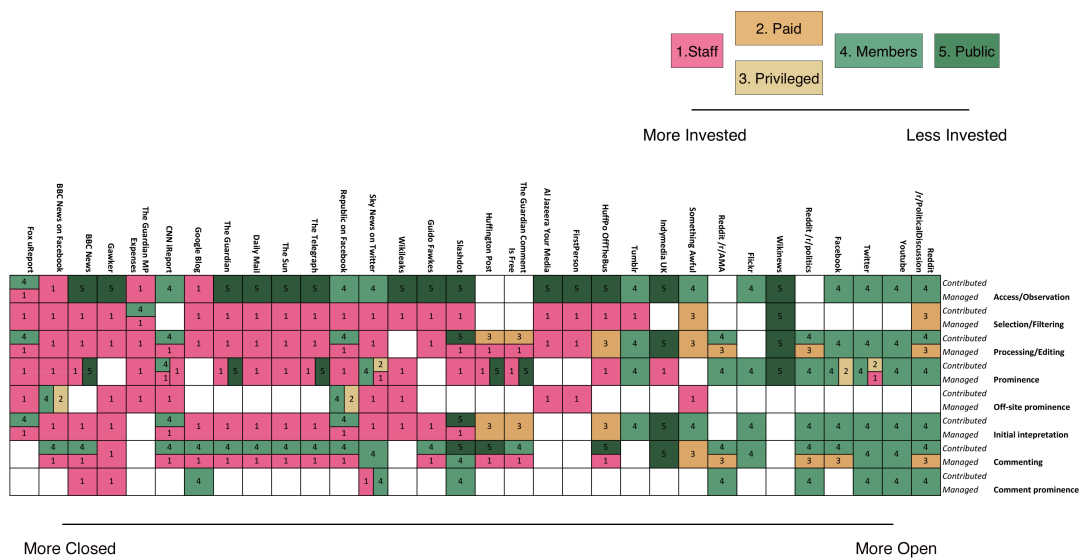


Figure 1: The landscape of citizen participation. (Scott et al., 2015)

consume. There is evidence to suggest that many people lack the required digital literacy skills to accurately judge the credibility of online news (e.g. Metzger et al., 2003, 2010; Flanagin and Metzger, 2000).

Traditionally, three dimensions of credibility are heavily studied: message credibility, source credibility, and media credibility (Metzger et al., 2003).

Message credibility includes specific features of the message content, including information quality; language intensity; and message discrepancy (Hellmüller and Trilling, 2012). As we are interested in the relative quality of news websites, rather than messages within a website, message credibility will not be relevant to our study. However, it has been shown that the credibility of one piece of content influences the way credibility judgements are made for other content on the same page (Thorson et al., 2010). Though the more closed systems on the spectrum do have content from multiple authors on a single page, this is far more common on the more open systems. This may impact on the credibility of the systems to the right of the spectrum.

Source credibility examines the personal characteristics of the message source that influence credibility judgements, including expertise; trustworthiness; and sociability (Wathen and Burkell, 2002). On the web, the influence of source credibility is difficult to measure as the source of a message is often misattributed: to website owners, sponsors, and even to web designers (Metzger et al., 2003). Many online news sites have content from multiple sources and the impact of each individual source on overall credibility is difficult to extract.

Schweiger (2000) found that news organisations with credibility in traditional media may have their web presence judged more credible than those that lack this traditional media presence. This can be explained as a feature of Tseng and Foggs “experienced credibility” (Tseng and Foggs, 1999) and an assumption that the organisation maintains similar editorial standards on the web as they do in non-web media.

Sundar and Nass (2001) found that the credibility of what they called the “selecting source” was also important when judging source credibility. The selecting source is the entity that chose to share the content rather than the one that initially collected or created it. Sundar and Nass found that users viewed information selected by other users to be more credible than information selected by an expert, though Sundar et al. (2007) found that the credibility of the original source is still important. Schmierbach and Oeldorf-Hirsch (2012) found that this effect of the selecting source increasing the credibility of a piece of content did not apply to content shared on Twitter, and posited that this may be due to the Twitter platform’s reputation as a place for “celebrities and shallow posts”.

Media credibility concerns the credibility of a communications medium. Traditionally, much media credibility research has concerned the relative credibility of television news and newspapers, with newspapers typically being perceived to be less accurate and more biased than television (Metzger et al., 2003). Reasons for this include that television can report live breaking news which proscribes authority and importance (Chang and Lemert, 1968), that television allows consumers to see what is happening

rather than it being described (Carter and Greenberg, 1965; Gaziano and McGrath, 1986), and because TV news typically covers fewer stories than newspapers they are less likely to make mistakes which reduce confidence (Wilson and Howard, 1978), or to push dissonant messages which increase the appearance of bias (Carter and Greenberg, 1965).

Some of these differences between television news and newspapers are also present when comparing newspapers and online news. Online news is able to react to ongoing events even quicker than television news, and with the prevalence of camera-enabled mobile phones and modern web technologies, online news systems are able to show videos of events promptly, sometimes even as they are occurring. These features may lead to websites being perceived as more credible than newspapers, but other factors will lead to the web having less credibility. These include the fact that on the web there is much more information, on many more topics, from many more people and points of view, than there is in newspapers. This increases the chances of mistakes being made and of the medium appearing biased.

This means that depending on the weighting attributed to each factor, the web as a whole may be seen as less credible, equally credible, or more credible than newspapers. Research is available to support each of these positions. For example see Johnson et al. (2007), Flanagin and Metzger (2000), and Johnson and Kaye (1998) which found online information to be more credible than offline, Kioussis (2001) which found online information to be more credible than television but less credible than newspapers, and Schweiger (2000) which found online information to be less credible than both newspapers and television.

Which type of credibility we ought to focus on is unclear due to the inconsistent use of terms in the literature. As mentioned by Hellmueller and Trilling (2012), The Yale Group Communication Research Program defines “sources” as individual persons, institutions or magazines, whereas McCroskey and Young (1979) defined this as individual communicators. The systems on the spectrum could be classed as source institutions under the Yale Group definition but would not fit McCroskey and Young’s definition.

The systems could also be classed as news media, with the individual contributors acting as sources. Rather than analysing the credibility of the web as a whole we would, for example, investigate the credibility of Twitter as a news medium when compared to Facebook. For our purposes, we will consider the technical systems to be news media, and will use media credibility measures to investigate the differences

on each side of the spectrum.

## 2.1 Spectrum of Credibility

With previous work having built a spectrum of openness of online news media, we will now investigate available literature on the credibility of specific online news systems to build an idea of how openness relates to credibility.

For the more-closed systems, Flanagin and Metzger (2007) found that traditional online news sources ranked higher than other news sources in credibility, and Melican and Dixon (2008), when investigating credibility and racism in online news, found that non-traditional internet news sources were perceived as less credible than all other sources of news. However, Kim and Johnson (2009) found that politically-interested South Koreans viewed independent online news sites as more credible than traditional media websites.

In the centre of the spectrum, blogs have been shown in some cases to be rated as trustworthy, though primarily by people already skeptical of mainstream media or regular users of blogs, with non-users holding lower opinions of blogs’ credibility (Johnson and Kaye, 2009; Choi et al., 2006), but Schmierbach and Oeldorf-Hirsch (2012) found that overall, blogs were less credible than mainstream news.

For the more open systems, Schmierbach and Oeldorf-Hirsch (2012) compared information presented via a news organisation’s Twitter feed to information presented directly by the news organisation, and found that “Twitter is seen as a less credible source that may or may not present a less credible message”. Marchionni (2013) explored the conversational features and credibility of news on Twitter, Wikinews, and “collaborative news” (Thorson and Duffy, 2006). They found that their participants rated collaborative news as more credible than Twitter, which in turn was more credible than Wikinews.

We can see that there is some evidence that more closed systems tend to be viewed as credible, and more open systems tend to lack credibility. However, there is conflicting data, and due to the inconsistencies in scales used and the differing definitions of ‘credibility’ used (see Hellmueller and Trilling, 2012), we are not able to draw any overall conclusions regarding the relationship between openness and credibility from these results. Instead, we will perform our own study of the perceived credibility of news systems.

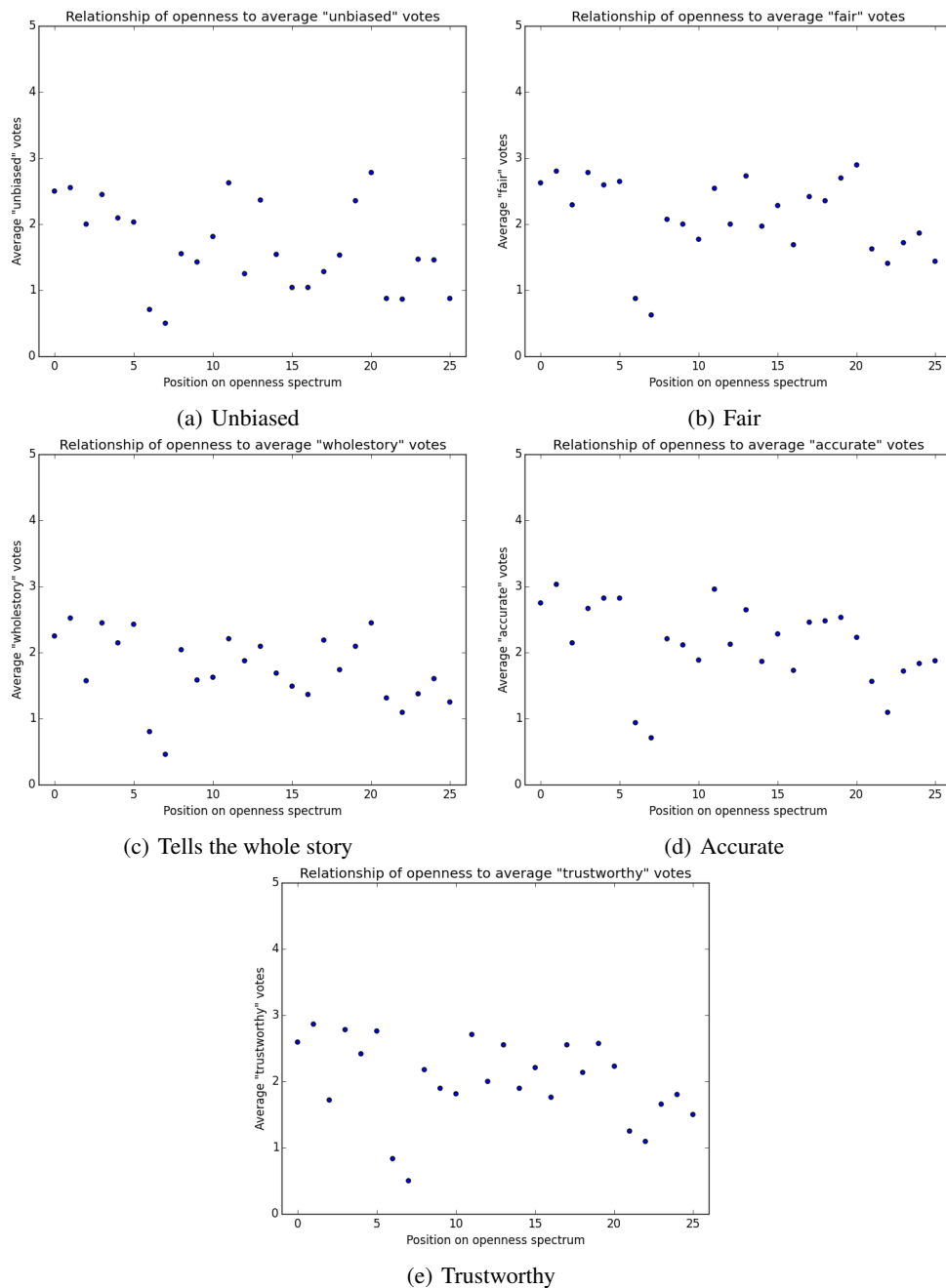


Figure 2: Plots of ratings of Meyer's factors against position on the openness spectrum.

## 2.2 Measuring Credibility

There have been a number of proposed ways of measuring the perceived credibility of a piece of media. Hellmüller and Trilling (2012) performed a meta-analysis of credibility research between 1951 and 2011, finding inconsistent use of concepts and a "proliferation of questionable items and scales" dominating credibility research. They found that of the 85

scales they investigated, only 16 replicated previously used scales. This makes deciding on the scale to use in this study difficult.

One scale which was used often, though can not be considered a standard, is that presented by Meyer (1988). Meyer validated the twelve factors previously proposed by Gaziano and McGrath (1986) and produced five factors which represent credibility. These have been shown to validly and reliably measure cred-

ibility (West, 1994).

In Hellmueller and Trilling's meta-analysis, Meyer's credibility index was the most commonly used set of factors, being used 6 times to measure media credibility (out of 29 in total), 3 times for source credibility (out of 21), 2 times for message credibility (out of 8), and 3 times in other studies (out of 10).

In the absence of an accepted standard, this study will use the Meyer credibility scales, the factors of which are: Unbiased/Biased, Fair/Unfair, Tells/Does not tell the whole story, Accurate/Inaccurate, and Can/Cannot be trusted.

### 3 METHODOLOGY

In order to measure the relationship between a news system's position on the openness spectrum and the credibility of the systems, we employed a web-based study. The survey was spread primarily via social media and participants were prompted to forward the study to their contacts. This resulted in 79 respondents (73% male, 27% female, age  $m=30$ ). All respondents were British, the majority (75%) had graduated university, and 56% of respondents were employed for wages, whereas 30% were students.

The participants were shown a list of news systems, from which they selected those they were familiar with. They were then presented with up to ten randomly ordered news systems with which they have familiarity. For each system, the participants were asked to rate the system against each of Meyer's factors, to give the reasons for these ratings, and asked how often they interact with the system.

All systems from the spectrum presented in Scott et al. (2015) were available for rating. "The Huffington Post OnTheBus" was renamed to "OnTheBus (by The Huffington Post)", "The Guardian MP Expenses" was renamed to "MP Expenses Investigation (by The Guardian)", "The Guardian Comment Is Free" was renamed to "Comment Is Free (by The Guardian)", and "Al Jazeera Your Media" was renamed to "Your Media (by Al Jazeera)" as it was found during experiment validation that several participants misunderstood the question as referring to the parent system and answered accordingly.

### 4 RESULTS

Participants submitted ratings for 27 of the 32 systems presented. For each system this included a rating between 0 and 4 for each of the five factors, and a rating between 0 and 4 representing the level of interaction

with the system (0 = never, 4 = very often). Some participants also provided reasons for their ratings.

Several systems received no ratings at all: OffTheBus (by Huffington Post), Fox uReport, CNN iReport, MSNBC FirstPerson, and Al Jazeera Your Media. Indymedia UK received only a single rating and so no reliable judgements can be made about its credibility. These have all been removed from the analysis, leaving 598 ratings in total, 26 systems rated, and an average of 23 ratings per system ( $s = 8.85$ ).

For an overview of the results, Table 1 shows the spectrum of credibility, based on the average of all votes received for each system. Figure 2 shows the relationship between the average rating for each factor and the system's position on the openness spectrum.

As the position on the openness spectrum and the values contributed for each factor are ordinal, we will use Spearman's Rank Correlation to determine relationships between the variables. The correlation between position on the spectrum and each of the factors is shown in Table 2. Each correlation is modest though statistically significant. Table 2 also shows the correlation when the biggest outlying systems (The Daily Mail and The Sun, discussed below) are removed.

### 5 DISCUSSION

Overall, we found that there is a modest correlation between the openness of a news system and the credibility of that system. This correlation is significant for each of the five credibility factors.

The two clear outliers in all measures are The Sun (a populist British tabloid) and The Daily Mail (a right wing British tabloid), which despite being very closed systems, were rated as bottom and second bottom overall for all credibility measures. These systems received a number of negative comments including "media coverage of the lowest grade", "sensationalist racist tripe", and "right wing propaganda" though the Daily Mail did receive positive ratings from some users, and one positive comment of "closer to the story than some of the others".

From the comments, the reasons for the low credibility appear to be either that these outlets are known for overly sensational stories, or because the ideological position of the sources significantly differ from those of the participants. The fact that some respondents did visit these websites for entertainment despite finding them non-credible lends credence to the first possibility, but the comments referring to "right wing propaganda", and "racist tripe" indicate that for some it is the political position of the news source that

Table 1: Spectrum of credibility.

Position	Openness Position	System	Unbiased	Fair	Whole Story	Accurate	Trustworthy
1	2	BBC News	2.54	2.80	2.51	3.03	2.86
2	4	MP Expenses Investigation	2.44	2.78	2.44	2.67	2.78
3	12	Wikileaks	2.63	2.54	2.21	2.96	2.71
4	1	BBC News On Facebook	2.50	2.63	2.25	2.75	2.59
5	6	The Guardian	2.03	2.64	2.42	2.82	2.76
6	21	Wikinews	2.78	2.89	2.44	2.22	2.22
7	14	Slashdot	2.36	2.73	2.09	2.64	2.55
8	20	Flickr	2.35	2.70	2.09	2.52	2.57
9	5	Official Google Blog	2.09	2.59	2.14	2.82	2.41
10	18	Something Awful Forum	1.27	2.41	2.18	2.45	2.55
11	19	Reddit /r/AMA	1.52	2.35	1.74	2.48	2.13
12	9	The Telegraph	1.55	2.07	2.03	2.21	2.17
13	3	Gawker	2.0	2.29	1.57	2.14	1.71
14	16	Comment Is Free (by The Guardian)	1.04	2.28	1.48	2.28	2.20
15	13	Guido Fawkes	1.25	2.00	1.88	2.13	2.00
16	10	Republic on Facebook	1.42	2.00	1.58	2.11	1.89
17	15	Huffington Post	1.54	1.96	1.68	1.86	1.89
18	11	Sky News on Twitter	1.81	1.77	1.62	1.88	1.81
19	25	Youtube	1.46	1.86	1.60	1.83	1.80
20	24	Twitter	1.47	1.72	1.38	1.72	1.66
21	17	Tumblr	1.04	1.68	1.36	1.72	1.76
22	26	Reddit /r/PoliticalDiscussion	0.88	1.44	1.25	1.88	1.50
23	22	Reddit /r/Politics	0.88	1.63	1.31	1.56	1.25
24	23	Facebook	0.86	1.40	1.09	1.09	1.09
25	7	Daily Mail	0.70	0.87	0.80	0.93	0.83
26	8	The Sun	0.50	0.63	0.46	0.71	0.50

causes the low reputation.

Though many participants chose not to give reasons for their ratings, the ones who did reveal the inconsistencies in what people consider to be credible, and what people consider to be news.

Table 2: Correlations between openness and the five credibility factors.

Factor	$r_s$	<b>p</b>	$r_s$ <b>outliers removed</b>	<b>p</b>
Fair	-.176	df = 598 p < .01	.285	df = 544 p < .01
Unbiased	-.220	df = 598 p < .01	.307	df = 544 p < .01
Whole Story	-.181	df = 598 p < .01	.272	df = 544 p < .01
Accurate	-.236	df = 598 p < .01	.349	df = 544 p < .01
Trustworthy	-.202	df = 598 p < .01	.315	df = 544 p < .01

The first thing to note from the comments is that many participants didn't consider some of the systems to be news systems at all. Flickr got comments such as "Last time I checked, Flickr was a picture upload site, not a source of information", "I go to Flickr for photography, not news reporting", and "I don't consider

Flickr a source of news"; Youtube got comments including "This is mainly for entertainment, and is not reliable for more serious news", and one participant said of Tumblr that it includes "more porn than news".

Others felt that the broad platforms couldn't be judged as a whole. For example one participant said of Slashdot "It's information that is posted by individuals which have different levels of credibility. So there's no way to rate the entire platform as a whole!", and of Flickr "a collection of individual's uploads, and will reflect those people's views. I wouldn't expect any attempt at impartiality.". Participants also believed that browsing habits dictate the credibility of the media received. For example Youtube received comments including "It really depends on what you watch", and "Pretty much depends on your browsing habits". Twitter received the comment "Depends on who you follow!".

The comments did re-enforce some existing research, such as the comment claiming of Youtube that "Seeing things is better than reading about them, doesn't contain personal views and perspectives" (Carter and Greenberg, 1965; Gaziano and McGrath, 1986), though others claimed that Youtube is "a soapbox for good information and total bull at the same time".

When rating the more traditional systems as credi-

ble, many participants alluded to an editorial process. For example, when rating The Guardian's Comment Is Free site, one participant said they "expect that The Guardian has a system that includes quality control" and another said that though it contains opinions, it is "edited so probably fairer and more trusted than [Reddit /r/AMA]".

The comment regarding the Guardian's "quality control" when referring to Comment Is Free provides evidence that the brand name gives users confidence in the credibility of a piece of media despite that credibility coming from a different medium. This also came through in comments for Sky News on Twitter ("Sky is a respectable news brand") and BBC News on Facebook ("generally trustworthy ... regardless of medium", "probably my most trusted brand", and "official and verified account of the BBC").

Even in the most credible news systems there were several comments referring to bias in the coverage. Of the BBC, participants said "Sometimes incomplete and a bit selective", "sympathetic to whoever is in power", and "information broadcast is down to how the organisation wants to portray a particular story", and The Guardian received comments such as "a pronounced agenda", "a very heavy 'Guardian' slant", and "have their own demographic to cater for, which means that they might be selective as to the facts they present".

## 6 CONCLUSIONS

This paper has provided an overview of credibility research, and presented the results of a survey designed to judge the credibility of 32 online websites.

We found that overall there is a modest but statistically significant correlation between position on the spectrum of openness and each of the five credibility factors. We found that this correlation exists whether or not we include the outliers The Daily Mail and The Sun.

Though there were exceptions, we found that the data gathered supports the hypothesis that more open news systems are judged to be less credible than more closed news systems. Judging from the comments, the reason for The Sun and The Daily Mail not following this trend is due either to their reputation for entertainment-heavy sensational stories, or due to the difference of ideological position between the systems and the participants.

Other comments showed that there exists disagreement in how the credibility of a broad platform can be judged, and even what constitutes news. There were some comments referring to the overall reputa-

tion of the company behind the system (such as The BBC and The Guardian) rather than looking at the system itself, and this was often caused by the participant holding some trust in the editorial process associated with that company.

This provides some evidence that the ordering of the spectrum presented by Scott et al. (2015) is a meaningful representation of the variety of news systems, and indicates that credibility is an appropriate but imperfect explanation of the intuitive difference between open and closed systems.

Future work should investigate the credibility of systems that do not fit into the openness spectrum (such as liveblogs and microblogs), and investigate where these systems would place on our spectrum of credibility. Further work is also required to investigate if this relationship exists in non-English language media.

This analysis has shown that despite growing numbers of people who share and discuss news on open news systems, these systems lack the credibility of traditional news media. Responses indicate that there is disagreement over whether the more open systems should be considered to be "news" at all, and in some cases the editorial process is invoked to explain why traditional news is the more credible option. It may be that, to make open news systems more credible, there needs to be some form of editorial process added.

In our own future work we will investigate specific features which affect the perceived credibility of alternative news outlets. We hope that this work will contribute to the design of news systems which are both credible and open to public participation.

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