Attitudes to Fake News Verification: Youth Orientations to 'Right Click' Authenticate

Dr Yasmin Ibrahim
Queen Mary, University of London

Dr Fadi Safieddine
University of East London

Dr Pardis Pourghomi
The American University of the Middle East

Abstract;

This paper examines the phenomenon of fake news through a survey of university students in the UK. The survey composed through a selection of factual and non-factual content/news and complemented through a validation tool sought to assess the attitudes of these respondents to factual misinformation before and after these were verified with the tool. The findings from the survey present online misinformation as a very complex and unfolding phenomenon in terms of user behaviour particularly when presented with an authentication tool. The majority of respondents failed in identifying factual from fake news posts. While respondents indicated mistrust in using third-party validation tools, the majority indicated a critical need for a verification tool that would support their quest and increase their trust in what they see and read posted online.

Introduction

In our postdigital landscape, the phenomenon of 'fake news' is raising new spectres of ethical and technical challenges for society in addressing, and coming to terms with its implications for wider humanity and society. There is palpable fear that if the deliberate production and dissemination of content which are designed to dupe and mislead readers is not arrested in the digital economy, there will be far-reaching and possibly devasting consequences for polities and societies at large. The nature, scope and extent of damage caused through misleading information will vary according to the context and nature of the misinformation involved but at the crux of the issues is the association of fake news with deception and the fabrication of false and misleading transactions which will impoverish users while leveraging on their consumption preferences and networks. Fake news juxtaposed against the notion of truth, accuracy and veracy encodes the postdigital landscape as one in which these competing concepts residing in tandem within virulent the sharing economy blur the lines between the fictitious and real.

Allcott and Gentzkow (2017: 2) conceptualise fake news as 'distorted signals uncorrelated with the truth'. It has also been defined as 'fabricated information that mimics news media content

in form but not in organisational process or intent. Fake news overlaps with other information disorders, such as misinformation (false or misleading information) and disinformation (false information that is purposely spread to deceive people)' (Lazer et al. 2018: 1094). We define "fake news" to be news articles or content that are intentionally and verifiably false, and designed to mislead readers. (Gelfert 2018: 1). Today it is more widely understood as news fabricated for profit or political purposes (Wardle 2017).

The digital economy has celebrated the uploading of content by lay people and has pronounced the birth of 'prosumerism' where there is an increasing blurring of lines between the distinct category of audiences and producers as an empowering aspect of the digital ecology. Nevertheless, the emergence of 'amateur economies' or what Andrew Keen (2011) has termed the 'cult of amateurs' has produced ambiguities between expert knowledge in ascertaining the veracity of news with the lack of 'gatekeeping' online. Fake news adds another dimension to this information ecology where it is seen as making the targets of fake news vulnerable and bestowing them with victimhood while creating the possibilities to derail democratic processes such as fair elections. The demise in trust between the public, news organizations and public institutions including politicians as well as the flow of news content into digital, mobile and social media sites away from mass broadcasting of the 20th century means small numbers of large platform companies increasingly shape media consumption (See Nielsen and Graves; 2017).

The extent of negative impact produced by the false economy of fake news has been a major area of concern particularly since the 2016 American elections and academic literature has primarily covered this ambit of emergent risk prior to the events of 2016 (Secor and Walsh 2004; Frankfurt 2009). Since 2016, there has been a proliferation of studies on detecting and combating fake news and users' attitudes towards the news or content they consume online (Safieddine et al. 2017; Antunovic et al. 2018; Khan and Idris 2019).

The structure of the paper preceeds by reviewing the existing literature on combating and detecting fake news and in illuminating studies which have surveyed the social attitudes and responses of users to fake news on social media. We then discuss a study of UK students which tested their attitudes and trust levels towards fake news. An important dimension of the study was that the respondents were provided a 'right click authenticate' tool to verify their sources to test the salience of such tools in identifying fake news. The analysis of this study we argue is consequential in both setting out the social premise and relevance of fake news online and user atttudes towards verification tools. The study opens the potential for further enquiry into the value and social relevance of verification tools and how users may or not mediate the behaviour with the availability of these tools.

Studies on User's Perception of Fake News

A number of studies have focused on combating and detecting fake news since 2016. Recent studies reveal that 62 per cent of US adults access news on social media (Gottfried & Shearer 2016) and that the most popular fake news stories were more widely shared on Facebook than the most popular mainstream news stories (Silverman 2016). Many people who see fake news

stories report that they believe them (Silverman & Singer-Vine 2016). Fake news consumptions and sharing can also be mediated by peoples's attitudes towards celebrities or political figures. For example, In the US context, the most discussed fake news stories tended to favour Donald Trump over Hilary Clinton (Silversman 2016).

There appears to be two main motivations for providing fake news. The first being pecuniary where news articles going viral on social media can draw significant advertising revenue when users click onto the original site. This appears to be the main motivation for most of the producers whose identities have been revealed (Townsend 2016). The second motivation is ideological, as in seeking to advance candidates they favour. An individual with no connection to the US election and based in Eastern Europe ran endingthefed.com, for example, claims that he started the site mainly to help Donald Trump's campaign (Townsend 2016). In a study of fake news on social media in the wake of 2016 election, Allcott and Gentzkow (2017) surveyed 1208 US adults aged 18 or over on how the respondents authenticate the fake news they see on social media. The study revealed that placebo fake news articles, which never actually circulated, are approximately equally likely to be recalled and believed as the fake news articles which circulated online, implying that there is a meaningful rate of false recall of articles that people never actually read.

A Reuters Institute for the Study of Journalism survey across 26 countries found that 44% of those surveyed use Facebook to read, watch, share, or discuss news (Newman, 2016). People come across news stories more or less incidentally on social media because they happen to be using these platforms, often for non-news purposes (Antunovic et al. 2018). They also increasingly depend on what their network of social media friends post and share in choosing which news stories to read and even in which ones to believe (Turcotte et al. 2015).

The concept of the source has become more complex on social media. For example, while a news organisation can publish a news story, other social media users can share the same story to their respective network of friends. An individual, then, can perceive the friend who shared it as the immediate source, while the news organisation that originally published the story becomes a distant source (Kang et al. 2011). This further complicates how users evaluate the authenticity of and proximity to the source of the news stories they come across on social media.

In a study by Tandoc et al. (2018) to examine how Singaporeans authenticate information on social media through an open-ended survey of 2501 respondents, the authors identified a two-step authentication process that respondents tend to engage in when confronted with a questionable social media post. This process can entail an internal verification preceded by an external mode. The internal mode entails a self-check where respondents evaluated content through their own wisdom, instinct, and insight—as a means to authenticate the news that they encounter on social media. When the individual is satisfied with the authenticity of the information in this initial stage, the process ends there, and the information is accepted as authentic. If the individual remains unconvinced of the information's authenticity, she proceeds to the next step, which includes external acts of authentication which involve relying on interpersonal and institutional resources. That is, individuals can deliberately seek out ways to verify news items using either their personal contacts or seeking authentication in formalised

sources. Some of the interesting insights identified include respondents noting popularity cues, such as the number of likes, comments, or shares. Some respondents also cited these quantitative heuristics as elements which augmented their perception of whether a post is authentic

In another study by Nielson and Graves (2017) in 2017, data were analysed from eight focus groups for online news users with the aim of developing an understanding of audience perspective on fake news. In total, the study looked at 5 to 7 participants in each focus group who came from the United States of America, United Kingdom, Finland, and Spain. Some of the key findings of this study suggest that people have difficulty in defining fake news and are unable to clearly distinguish fake news. The study proposed a scale for ranking news related posts as either satire, poor journalism, propaganda, some form of advertising, to fabricated / politically motivated Fake news. In the study, the majority of participants asserted the first item on the scale (satire) and the last item (fake news) as not news.

The study nevertheless shed light on the fact that participants are better at appreciating the reason for fake news as being linked to low trust in mainstream media and politicians, and characteristic of the digital economy whereby social platforms easily facilitate the dissemination of misinformation. Most people were able to identify individual news media they consider as reliable sources to verify information, and these tended to vary across the board with a considerable number having no trust in any of the traditional media outlets. The study revealed that in the UK, 43% have trust in the mainstream media, whereas 51% only trust the media they usually use, in this rating, the U.S. scored the lowest of 38% (i.e. trust in mainstream media) and 53% respectively (i.e.they media they use).

In a survey conducted by Khan and Idris (2019) on a sample of 396 social media uses in Indonesia, the authors sought to study the influence of attitudes, beliefs, and internet skills in the spread of misinformation on social media. The study identified income, level of education, internet skills, and attitudes towards information verifications as key factors mediating respondents' perception that they can self-recognise fake news. The findings of the study suggest that a person who perceived themselves to be self-efficacious in recognising misinformation on social media tended to use tools to verify news on social media, to believe what they see on social media, has higher income and self-esteem. According to the study, the more educated respondents tended to be less confident about the ability to detect misinformation. The findings suggest that the key factors influencing sharing information without verification was to linked to one's poor Internet experience, placing little importance on verifying information, and a perception one can self-check this information (Khan & Idris 2019).

A review of extant literature shows that many of the surveys and studies can be described as exploratory in nature, attempting to explore concepts and perceptions of individuals in defining fake news, approaches to verifying it, categorising fake news, and the ability of respondents to identify fake news. Most of these studies suggest participants are unable to identify fake news. With regards to sourcing reliable news, there seems to be no consensus on a valid and reliable means to complement or support external verification. A process that one study acknowledges being the last resort (Tandoc et al. 2018). There also seems to be a gap in identifying trust in

social media as a news source. Two studies (See Silverman 2016; Allcott &Gentzkow 2017) circumscribed their focus to mainly politically motivated fake news which tends to surge during popular political campaigning without configuring the wider premise within which fake news occupies in our everyday lives. Fake news extends beyond short periods of political campaigning to everyday news, medical advice (such as cancer treatments and Anti-vaccination), opinion manipulation posts (on topics such as immigration), satire used as factual information (i.e. humorous posts), and science (i.e. topics such as climate change). Some social platforms and news outlets, such as *Facebook* and *Google*, have attempted to introduce 'third-party fact checkers' supporting tools. Pourghomi et al. (2017) point out that Facebook introduced the option to report posts as fake news, a painfully slow process; while *Google* presents on a sidebar series of fact checkers site posts. Nevertheless, there is no evidence of either of these approaches having a major impact on internet users (Pourghomi et al. 2017) and there is scope for more research on this.

The Right-Click Authentication Approach

In view of this, our pilot study was designed to address the voids in finding a reliable approach in identifying fake news and/or in verifying the source of news and to ascertain users' response to verification tools where they can detect content or news. The review of the literature reveals that there are still areas to explore in addressing fake news as a problem particularly in ascertaining the relevance and usefulness of third-party checkers to detect and guard against the dissemination of fake news. There is also no comparative study which has assessed the impact of a verification tool before and after the consumption of a news item. Our study takes this crucial dimension in hand in designing the study to assess both the psychology and users' orientation to the news before and after content has been verified.

Before discussing the pilot survey, there is a need to expand on the notion of a right-click authenticate (RCA) as a semi-automated validation tool. A semi-automated tool that allows an accessible and efficient approach to validate misinformation online can be a vital step in analysing and predicting the dynamic trend of misinformation propagation (Dordevic et al. 2016; Safieddine et al., 2017; Safieddine et al., 2016). With the 'right-click authenticate' tool, users can right click on a piece of news, image, or even video to allow a real-time check on where it has been reported in the past (i.e. original metadata that could help identify its source). The use of right-click authenticate tool is shown in figure 1.

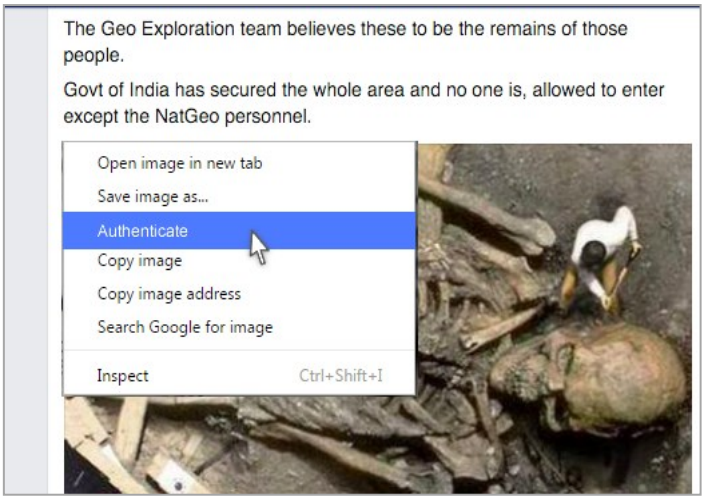

Figure 1. Conceptualising a 'Right-click Authenticate' option

This approach relies on providing a shortcut to a link that does external validation by several means, including reverse image and text search for hits linked to the given article or content including original sources. The semi-automated tool would also identify sources from third-party checkers or highly reliable informative web pages as demonstrated in the conceptualisation model of figure 2.

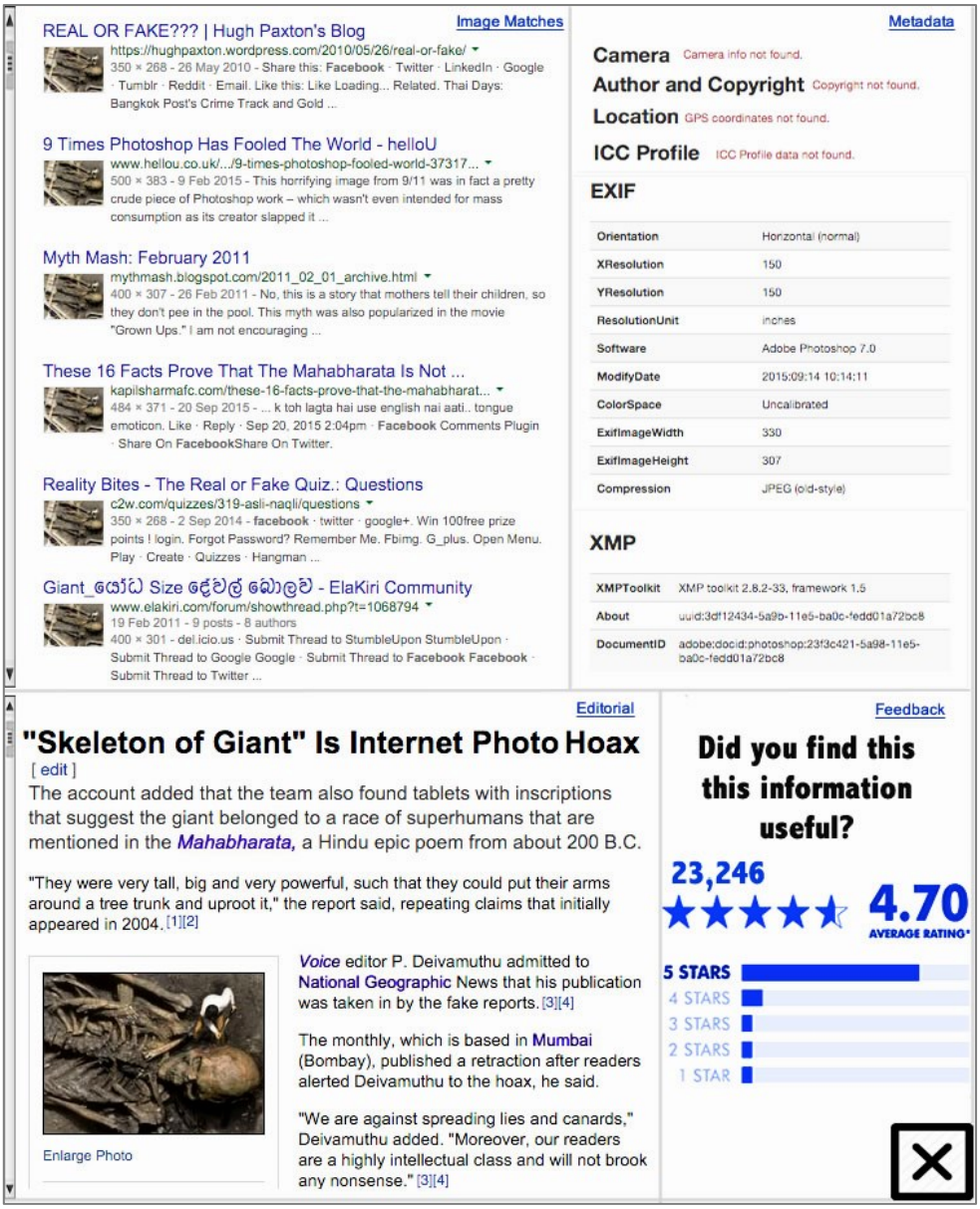

Figure 2. The conceptualisation of the Semi-automation validation output

This validation encompasses four sections as shown in figure 2:

1. The 'Image Match' search: This performs a reverse image search for the earliest appearance of the key post image(s) thus allowing users to identify possible re-contextualisation of images or debunks by third-party checkers.
2. The Metadata search: This aims to identify the original EXIF file details that would show date, location, device and other essential tools in helping identify the source of an image.
3. Editorial Results: This present results by means of semantic word matches that could be manually assisted by users to link to reliable sources that assess the validity of the post.
4. Crowdsourcing Feedback: An opportunity for crowdsourcing feedback that is focused on discussing the validity of the RCA check.

Information Literacy Intervention

When it comes to Fake News, the research on Information Literacy Intervention is still developing. Jang and Kim (2018) found that in the U.S., people concerned about Fake News impact were more likely to support third party information literacy intervention. Qualitative research in Canada by Delellis and Rubin (2020) suggests that Information Literacy can prevent, detect, and deter Fake News spread. The most detailed study on this subject has come from Jones-Jang, Mortensen, and Liu (2019). Empirical research indicated that greater media, information, news, and digital literacies significantly improve fake news detection. Thus, can having a third-party validation tool such as RCA be an added approach to improving information literacy?

Design and Methodology

As demonstrated in the review of extant literature, research into the users orientation and psychology of fake news and social media remains in its early stages, and there is a need to explore and understand the human psychology in identifying fake news as well as factors associated with trust in order to combat the spread of misinformation on social media.

In this study, the Trust Scale model of Glaeser et al. (2000) was employed. The Trust Scale model is based on three questions that attempts to identify how much trust the respondent has for a given source of information or news. This scale first appeared in US studies that looked at trust in politicians but has since been used in a variety of contexts including news. The model is not free from criticism, not least because of the limited options respondents can choose from in answering the questions. Trust as an intangible emotion is invariably difficult to assess and the scale provides a measure (albeit crude) to quantify the notion of trust. Any findings as such will be cognitive of limitations in relating trust purely through scales alone. Its main advantage being its ability to provide a mapping of trust in terms of relationality to a given entity or person as opposed to its measure in a holistic sense. However, for the purpose of this study, the model provides good bases to help answer some of the following questions premising trust and fake news:

1- How much trust is there in posts shared on social media?
2- Are respondents able to identify fake posts from factual posts on social media?
3- How much trust is there in having third party-checkers validating posts?
4- Following a short practice in identifying fake posts using a semi-automated RCA tool, will this impact the trust in social media?

The survey entailed five sections. The first section was designed to assess the trust respondents have with relevance to what they see and read on social media. The results would help identify the perception of trust before the experiment. In section two, the respondents were presented twenty social media posts to assess their believability. These twenty social media posts were selected to cover a variety of themes. The team intentionally avoided politically charged subjects in an attempt to keep the presentation of the survey in a format that would appear as an everyday social media content offering.

Table 1 shows a summary of the themes and the selected posts. These posts were randomly mixed using MS Excel randomiser numbering and presented to all the respondents in the same order as shown in table 2. There was a conscious decision to select posts that had little publicity in the media. There was also an attempt to select factual posts that may appear to be fake and fake posts that appear to be factual. These posts were then assessed individually to be fairly distributed. The distribution of the post is assessed to be distributed as five posts for each of the following categories used by Allcott and Gentzkow (2017) in their study; Big Fake, Small Fake, Small True, and Big True.

On a spectrum, one may see Big Fake posts as easy to detect as fake, for example, the suggestion that scientists have cloned first baby dinosaur; Small Fake posts are challenging whereby they can be confused as factual or fake but are in fact fake, for example, a photo of snow in Egypt; Small True are challenging whereby they can be confused as factual or fake but are in fact true, for example, the saving of a boy accused of being a witch in Nigeria; finally Big True posts should be reasonably assumed as factual by its own merit, for example, Michelle Obama's baby photos. The categorisation of these posts entails a degree of subjective judgement on the part of the researchers. Additionally, finding posts that fit the extremes of the spectrum was challenging but we felt the variation within the categories provided us with a variety of content to post to our respondents.

Table 1: Distribution of post themes and content:

Theme	Factual	Fake
Human Story posts	Saving witch boy in Nigeria	Nepal disaster photo
Health Advise posts	Vegan Burger that bleeds	Cannabis oil medical marvel
International news posts	Halloumi shortage crisis	Paris Post-terrorist attack day
Amusing stories posts	400 students, no show to lecture	Dinosaur baby cloning
Science posts	Expiring Salt	Baking soda kills cancer cells
Suspicious stories posts	UFO citing turned a meteor	Gaviola kills cancer cells
Celebrity stories posts	Michelle Obama baby photo	John Lennon and Che Guevara photo.
Historical facts posts	Bruce Less Quote	World War II immigration event
Photoshop stories posts	Flat earth photo (as satire)	Art gallery with no art
Environmental stories posts	None flushable wipes	Snow in Egypt

Table 2: Random presentation of post and ranking of posts

Figure no.	Post	Ranking of the post
1	Nepal disaster photo, not true.	Small Fake
2	Paris Post-terrorist attack day	Small Fake
3	Saving witch boy in Nigeria	Small True

4	World War II immigration event	Small Fake
5	Bruce Less Quote	Big True
6	Gaviola kills cancer cells	Big Fake
7	Cannabis oil medical marvel	Big Fake
8	Baking soda kills cancer cells	Big Fake
9	400 students, no show to lecture	Small True
10	Flat earth photo (as satire)	Big True
11	Halloumi shortage crisis	Small True
12	Michelle Obama baby photos	Big True
13	Art gallery with no art	Big Fake
14	Expiring Salt	Big True
15	UFO citing turned a meteor	Small True
16	Vegan Burger that bleeds	Small True
17	John Lennon and Che Guevara photo	Small Fake
18	None flushable wipes	Big True
19	Snow in Egypt	Small Fake
20	Dinosaur baby cloning	Big Fake

Respondents were given the following options for each post: “I believe it”, “I do not believe it”, “I am not sure”, and “I don’t care if it is true or not true”.

In section 3, all the respondents used a semi-automated validation tool to validate each post and assess the results of that review. The tool is a working demo based on Dordevic et al. (2016) allows respondents to engage with the tool. The tool presents sources of images and texts in the posts as well as third-party commentary on the validity of the posts in the same format presented in figure 2. The final decision to believe or disbelieve the post is left to the respondents to make.

In section 4, we re-assessed the trust level by posing the same questions we had asked in section one. We repeated this step to ascertain whether the exposure to fake posts would impact their trust in posts on social media. The respondents were then asked to assess their trust in the use of third-party checkers. We followed these by asking respondents to define fake news and whether they believed fake news to be harmful. Section 5 collated the demographic data of respondents and included an open-ended question for respondents to reflect on their experience with fake news on social media.

We test piloted the survey by conducting a sample of 10 respondents who helped identify issues with the wording of key sections as well as for instructions for transitioning to the website demo of stage 3. As a result, the team rephrased some of the questions to clarify the different steps. Some respondents struggled in switching between the survey and the RCA demo menu. As a result, we produced a handout in the form of a guide on how to switch screens between the survey and the website. The survey took place at the Behavioural Lab at Queen Mary, University of London. The lab runs surveys to support academics research and maintains a

large database of students from various academic displines and background[1]. The team used SPSS and MS Excel for the data analysis. The final dataset showed a total of 117 valid responses (n=117) that were put forward for study and analysis. Most of the respondents are young with an average age of 24.5, over half are Asian at 51%, majority female at 65.8%, the majority are none religious affiliated at 40%, and low income with 54% earning less than £19,000 a year. As expected from a survey of students, all the respondents have either a high school degree or a higher degree, and the majority own laptop or smartphone at 97.4%. In addition, we found

- The average (mean) person spends 6 hours a day online with nearly half of that times (2.8 hours) on social media.
- 79.5% of respondents rely on Social Media as a source of their news. With 40% do not use traditional media such as TV/Radio/Newspapers as a source of their news.
- 57.3% of respondents check the news daily with a further 14.5% 4 to 6 times a week.

We worked on the following hypotheses in designing the survey;

Hypothesis 1:

H^1: The use of a tool to validate posts would cause users to be less trusting of social media posts.

H^0: The use of a tool to validate posts would cause users would have no impact or more trusting of social media posts.

We worked on the rationale that being exposed to fake posts would encourage users to be less trusting and more interested in validating posts. We would test for comparison between the results of trust before the start of the survey and after the exposure to fake post and tools that allow identification of fake posts. The difference to be T-tested for being statistically significant.

Hypothesis 2:

H^1: An average user can identify fake from factual posts on social media.

H^0: An average user cannot identify fake from factual posts on social media.

[1] The full pilot study took place at Queen Mary, University of London behavioural lab. The lab is managed independently by the School of Business and Management lab manager. The behavioural lab has a capacity of 12 computers. During January to February, a total of 11 sessions took place, and 124 Queen Mary undergraduate and postgraduate students attended the study. Participants are awarded £10 for their participation in the survey. The lab is funded by School of Business and Management (SBM) at QMUL. The research approved by SBM research ethics committee. The average time taken to complete the survey is 18.45 minutes. This is an average of 9 seconds per question. The team eliminated a total of seven entries for taking less than 6 mins, which averages 3 seconds or less per question. Removing survey observations that take 30% or less than the average time i

In this context, an average user as someone who is familiar with digital content and the internet as well as the consumption of digital content online on a regular basis. We worked on the rationale that being able to identify fake posts would mean most respondents can identify fake posts and factual posts without the need for validation tools. We would test the comparison of the believability responses from section 2 with regards to the ten factual and ten none factual posts. In theory, these posts should have strong negative correlation where most respondents should identify factual as 'I believe it' as opposed to 'I do not believe it' and inversely fake posts should have the results in mostly 'I do not believe it' as opposed to 'I believe it'. A correlation of -0.5 or smaller would be sufficient evidence of such inverse correlation. A correlation of -0.5 to -0.25 would show a weak correlation. Whereas anything higher than -0.25 would indicate an inverse correlation.

Hypothesis 3:

H^1: Users trust third-party checkers to validate social media posts.

H^0: Users are not sure or do not trust third-party checkers to validate social media posts.

We worked on the rationale that many of the social media platforms have resorted to using third-party checkers to validating information on social media. We wanted to test this with a straight forward analysis of the three Scale questions.

Survey Results

In sections 1 and section 4 (i.e. the questions were repeated after using the RCA) of the survey, the respondent answered the following questions:

Q2. Generally speaking, would you say that most social media posts can be trusted or that you can't be too careful in dealing with them?

Q3. Would you say that most of the time, people sharing social media posts try to be helpful, or that they are mostly just looking out for themselves?

Q4. Do you think that most people sharing posts online would try to mislead you if they got the chance or would they try to be honest?

For each of these questions, respondents had two options to indicate either a negative or positive response.

Table 3: Results of the Trust Scale, before and after RCA.

Before starting the demonstration

Q2	Count	Percentage
Can't be too careful	97	82.91%
Most social media posts can be trusted	20	17.09%
Overall Total	117	100.00%

Q3	Count	Percentage
Look out for themselves.	72	61.54%
Try to be helpful	45	38.46%
Overall Total	117	100.00%

Q4	Count	Percentage
Mislead me	47	40.17%
Try to be honest	70	59.83%
Overall Total	117	100.00%

After the demonstration:

Q2	Count	Percentage
Can't be too careful	104	88.89%
Most social media posts can be trusted	13	11.11%
Overall Total	117	100.00%

Q3	Count	Percentage
Look out for themselves.	86	73.50%
Try to be helpful	31	26.50%
Overall Total	117	100.00%

Q4	Count	Percentage
Mislead me	69	58.97%
Try to be honest	48	41.03%
Overall Total	117	100.00%

It is evident from the data that there is a shift in the perception of mistrust when comparing the results after respondents had used the RCA tool. The results show a shift towards being less trusting of social media. The most notable drop being Q4 where 59.8% believed people sharing posts online are honest, and after the RCA demo session, this drops to 41% after the session.

The ability of respondents to identify fake news from factual news is presented in table 4. The table represents a summary of responses to the ten factual and ten non-factual posts.

Table 4: Factual versus none factual posts and ability to identify news.

Responses to factual posts	Overall	Percentage
I am not sure	258	22.05%
I believe it	337	28.80%
I do not believe it	204	17.44%
I don't care if it is true or not true	371	31.71%
Overall Total	1170	100.00%

Responses to none factual Posts	Overall	Percentage
I am not sure	340	29.06%
I believe it	201	17.18%
I do not believe it	457	39.06%
I don't care if it is true or not true	172	14.70%
Overall Total	1170	100.00%

When presented with ten factual and ten non-factual posts, the results showed that respondents are better at identifying non-factual posts (39.06%) than identifying factual posts (28.80%). The data also suggests that respondents are more likely to be unsure in identifying factual posts then rejecting non-factual posts. In both cases, the majority were not definitive about posts being factual or non-factual. Even though the majority of respondents were ‘not sure’ or ‘did not care’, it is noted that twice as many respondents ‘did not care’ (31.71%) when exposed to factual as opposed to (14.7%) for non-factual posts.

In section three, we introduced the RCA tool to enable respondents to authenticate the individual posts in order to assess their subsequent behaviour towards post using the verification tool..

In section four, we re-used the trust scale questions to compare their perceptions prior to the employment of the RCA. We also introduced an explanation of the term ‘third-party checkers’ in the context of advice given by an independent party on the validity of the post. The following are the standardised set of questions we presented the respondents:

Q97. Generally speaking, would you say that third-party fact-checkers can be trusted or that you can't be too careful in dealing with them?

Q98. Would you say that most of the time third-party fact-checkers try to be helpful, or that they are mostly just looking out for themselves?
Q99. Do you think that third-party fact-checkers would try to mislead you if they got the chance or would they try to be honest?

The results of the Third-party checkers Trust Scale are provided in table 5.

Table 5: Trust Scale for third-party checker

Q97	**Count**	**Percentage**
Can't be too careful	**85**	72.65%
Most third-party posts can be trusted	**32**	27.35%
Overall Total	**117**	**100.00%**
Q98	**Count**	**Percentage**
Look out for themselves.	39	33.33%
Try to be helpful	78	66.67%
Overall Total	117	**100.00%**
Q99	**Count**	**Percentage**
Mislead me	37	31.62%
Try to be honest	80	68.38%
Overall Total	117	**100.00%**

The data suggests that the respondents do not trust third party checkers with 72.65% indicated that one "Can't be too careful". However, in the next two questions and when asked if third-party checkers try to be helpful and honest, the data shows a cautious but significant 66.7% and 68.4% agreeing respectively. This suggests the respondent would want posts to be checked by third party checkers, but they want to have the tools to make the final call in deciding if a post is factual or otherwise.

For the two questions about defining Fake news and how harmful it is viewed, respondents could select more than one option.

For Q118. What do you understand by 'Fake News'? You can select more than one option:

Q.118	**Count of responses**	**Percentage**
Misinformation	111	94.87%
Conspiracy Theory	30	25.64%
Misrepesentation of facts	88	75.21%
User generated content	18	15.38%
Trolling	40	34.19%
Number of respondants	**117**	**100.00%**

For Q119. How do you perceive 'Fake news'? You can select more than one option

Q.119	count	Percentage
It has a purpose	33	28.21%
It is dangerious	89	76.07%
Not Sure	5	4.27%
It is harmless	10	8.55%
It is part of the Internet	65	55.56%
Number of respondants	**117**	**100.00%**

Data analysis and Cross data analysis:

Analysis of the results from table 3 shows a change in the level of trust before and after the study. T-test analysis for Q2, Q3, and Q4 before and after returned 0.0543, 0.0007, and 0.000004 respectively. Since Q3 and Q4 are below 0.05, it is suggesting that the change is statistically significant. This gives weight to the argument that providing tools to individuals to validated what they see online, allows them to be more cautious in what they see. As such, the data firmly suggests and validates Hypothesis 1 that the use of a validation tool would cause users to be less trusting of social media posts. In other words, a tool that allows users to identify fake from factual posts would make users check more before trusting a post to be factual.

According to the sample in the survey, and as the demographic data shows over 90% are educated university students, respondents were able to identify fake posts (39.06%) compared to factual posts (28.8%). In both cases, the respondents did not reach a threshold of 50% to support H^1, and that is before we look at margins of errors. The key test is a correlation test between responses given to factual posts as oppose to fake posts returned a correlation of -0.23. The correlation shows an inverse relationship between fake and factual, but not statistically significant. As such, hypothesis 1 is not supported. And the results indicate that the null hypothesis H^0 remains valid. Most users (university students) cannot identify fake from factual posts on social media.

The data collected in this study is based in part on the tool that demonstrated some feedback from third-party checkers. The results provided mixed results where on the one hand respondents gave a strong indication that they do not necessarily trust third-party checkers, but were curious about the input from the authentication tools and were of the view that third-party checkers have good intentions. Thus, suggesting that respondents welcome the input of third-party checkers to provide additional commentary or insights, but the final decision is theirs. Given the mixed results, the data does not support H^1 but partly supports the null hypothesis H^0.

To understand the trust and mistrust among the respondent, a T-test for statistical significance is suggested to compare both data and it was found to be statistically significant. The team compared post RCA demonstration trust between social media and third-party checkers against all three trust scale questions. In all three Trust Scale questions, the difference is found to be significant (where T-test is below 0.05): 0.039, 0.0021, and 0.021 respectively. This finding

leaves open the conclusion reached in hypothesis 3 that users want the tool and trust the tool but only as a supplementary rather than a definitive source.

1.1. Cross data analysis:

In response to online behaviour, the survey respondents indicated the following:

The data reveals that the under 25 were significantly more likely to link Fake News to trolling, conspiracy theory or user-generated content. These findings further confirmed that under 25s when asked about the seriousness of fake news, 54 out of 65 respondents described it as harmless. Finally, the under 25s constituted 40% of respondents who do not use traditional media for news.

Otherwise, no significant difference is found in other areas of the survey. On gender, male respondents were more likely to link fake news to trolling (51% of males) as opposed to females but there was a general area of consensus on other areas of the survey. Differences in income or use of traditional versus online media for news were found to have no impact on choices. Spending less time or more time online or social media was found to have very small variations in how respondents define fake news, assess the seriousness of fake news, or how they trust or mistrust social or third-party checkers. The data collected on religious affiliation proved impossible to analyse because of the diversity of groups and the small numbers involved.

Reflection on the data and data analysis:

There are many findings that this pilot study draws from the survey. Firstly, the perception that providing users with validation tools would render them hostage to what other media users tell them is simply not true. This study shows that users would likely to be sceptical but surprisingly welcoming of any further information that would help them decide on the validity of a given post. This study also shows that most users failed at identifying fake posts (39.06%), but more worryingly failed even more in identifying factual posts (28.80%), thus confirming other studies that consistently show respondents unable to rely on their own judgement in making such call. The trust scale provided insights into the perceptions of users with mixed results in how they would approach information provided by third-party checkers. Users were curious about the input of authentication tools and were not opposed to reviewing the results. The authentication tools did not shift perceptions about the need to incorporate these as vital. While there is a large amount of distrust about postings on social media, the authentication tools were not seen as a panacea to combat fake news. They seem to fall into the ecology of elements which shape trust about social postings online along with other factors such as trust in their social networks, their individual perceptions and instincts about what may be false or true. The RCA emerged as a dilemmatic and confused proposition for its respondents. In this study, it was folded in as a possible option but the ultimate decision of trusting a post was down to individual orientation. This dilemmatic thrust means that social media posts and news items which are transacted through social networks emerge through a complex economy of news as a social offering, one that is not entirely about prompting authentication but embedded in into

dialectical psychology of trust and mistrust where RCA may not dispel fake news completely neither is an authentication tool dismissed outright. It may induce a proportion of users to resort to checking but that is dependent on both the habit of constantly verifying posts and keeping up with the volume of posts which might be sent to individuals by networks. The demographic data shows that 40% of users do not rely on any traditional media for news and the majority in that group are under 25. One of the more perplexing elements of this study is that under 25 seem to significantly underestimate the seriousness of fake news or its impact, consigning it and possibly justifying it through a complex social media landscape where social norms and trust may transpire differentially. Despite a heightened sense of distrust about postings on social media, confusion about what may or may not be authentic reigned about social media past but authentication tools were neither deemed as an absolute source of trustor protocol for consuming news on social media. They were not foreclosed as a possibility or option but not entirely a necessity in this study.

Conclusion

This study sought to understand users' orientation to RCA by presenting them with a mix of true and false posts and subsequently enabling them to verify these through an authentication tool. While there was a shift in trust towards social media posts before and after the use of RCA. The study revealed that users had a dilemmatic attitude towards authentication tools. Firstly, they did not perceive it as a panacea to fake news but were not opposed to reviewing the results of the tool as supplementary to their final decision. The study has a number of limitations. It primarily focused on a student population and used a taxonomy of news categories to test its users. As it is a lab situation, the orientation towards these posts have been somewhat circumscribed. Secondly, this was a one of quantitative study and a more longitudinal study of RCA over time may have shaped users' perception towards an authentication tool. Thirdly, more a supplemented qualitative component to this study may have augmented the findings particularly on the perceptions on RCA and the complexity of trust about social media news posts. Follow up research intends to explore this study on a broader scale and consider the impact filter bubbles in concentrating fake news propagation during critical events. A follow-up paper will also explore how COVID-19 Fake News and Anti-Vaxx have reacted to clamp down from major social media platforms.

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