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“I’ve been manipulated!”: Designing Second Screen Experiences for Critical Viewing of Reality TV

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ABSTRACT

The recent proliferation of a reality TV genre that focusses on welfare recipients has led to concerns that prime-time media experiences are exacerbating misconceptions, and stifling critical debate, around major societal issues such as welfare reform and poverty. Motivated by arguments that ‘second screening’ practices offer opportunities to engage viewers with issues of political concern, we describe the design and evaluation of two smartphone apps that facilitate and promote more critical live-viewing of reality TV. Our apps, *Spotting Guide* and *Moral Compass*, encourage users to identify, categorise, tag and filter patterns and tropes within reality TV, as well as reinterpret social media posts associated with their broadcast. We show that such interactions encourage critical thinking around typical editing and production techniques and foster co-discussion and reflection amongst viewers. We discuss, more broadly, how these interactions encourage users to identify the wider consequences and framings of reality TV, and offer implications and considerations for design that provokes criticality and reflection in second screening contexts.

Author Keywords

Second screening; TV; welfare; politics; social media.

ACM Classification Keywords

H.5.m. Information interfaces and presentation (e.g., HCI): Miscellaneous.

INTRODUCTION

The extent to which the framing of television (TV) content influences viewers’ attitudes is a subject of long-standing scholarly debate [12, 25, 34]. Recently it has become

apparent that one means by which public reaction to television might be measured is by analysing the nature of the social media “backchannel” [20] discussion to its broadcast. The assumption being that the qualities of discussion in the backchannel will be reflective of viewers’ reaction to, and opinion of, the political stories and their framing that is evident within the TV editing and production [36]. This assumption is based on observations that the casual practice of real-time “second screening”, such as engaging with a Twitter #hashtag about a TV show whilst attempting to simultaneously watch the show itself, is nowadays as natural and commonplace as TV consumption in itself [22, 36]. In their work on second-screening and reality TV, for instance, both Doughty et al [18] and Brooker et al [11] have presented instances of how the political framing of minority communities and welfare claimants, respectively, is overwhelmingly reaffirmed and reflected in the content of the Twitter backchannel during live broadcasts. [11] in particular develop the argument that the commonality of second screening practices might serve as an opportunity to support more critical debate around issues of socio-political importance when framed, or otherwise delivered, through broadcast TV. In related work [23] also recently suggested that second screening offers new and transformative ways to engage citizens in political discourse, as well as the viewing social experience [38].

Motivated by this prior research, we present our approach to the design and evaluation of two smartphone apps that facilitate and promote more critical live-viewing of reality TV. Our apps, *Spotting Guide* and *Moral Compass*, encourage users to identify, categorise, tag and filter patterns and tropes within reality TV along with reinterpreting social media posts associated with their broadcast. We situate our evaluation in a study of the effectiveness of the two apps in the context of a reality TV genre – often dubbed ‘poverty porn’ [26] – that focuses on people who are supported by state welfare. The recent proliferation of this genre has led to concerns that prime-time media experiences are exacerbating misconceptions, and stifling critical debate, around major societal issues such as welfare reform and poverty. We show that our apps

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encourage critical thinking around editing and production techniques and foster co-discussion and reflection amongst viewers. We discuss, more broadly, how these interactions encourage users to identify the wider consequences and framings of reality TV, and offer implications and considerations for design that provokes criticality and reflection in second screening contexts.

BACKGROUND AND RELATED WORK

Here we discuss relevant literature that explores the intentional design of second-screening applications, the potential role of second-screening in online deliberation and the specific types on interaction that might support this. In order to contextualise our work we also summarise the background to, and implications of, the recent proliferation of poverty porn reality TV.

Designing for Second Screening Interactions

Cesar et al [13] characterise the interactions made possible through second screening in four ways: users might *control* the broadcast using the second screen; they might *transfer* content between devices and the television; broadcasts might be *enriched* with user-generated content; and users might be encouraged to *share* personalised content with other viewers. Our own research combines the latter two of these forms of interaction i.e. we are interested in using second screening as a means of *enriching* broadcast content through the encouragement and support of users to *share* information in specific ways.

The possibility of enriching TV content with second-screen applications has been recognized by the broadcast industry. For instance, HBO's "companion apps" are designed to be used in conjunction with series such as *Game of Thrones* [24]. These apps allow users to see extra context-relevant information about the show as they are watching it, including the backstories of characters and recaps of previous episodes. Similarly, [33] presents experiences in evaluating a companion app for a long-form US television series. This application was designed in the form of an annotated 'story-map', which provided the backstory for characters within the program to scaffold viewers' first viewings of the programme. Basapur et al [3] incorporate the idea of social sharing as a means of providing content for second screening. Their application, *FanFeeds*, was designed to allow users to provide time-coded commentary (e.g. text, video, URLs, etc.) alongside TV programmes to be shared with like-minded friends. As the authors note, this form of user-generated content lends a feeling of a live social event amongst TV users, they also note that users drew on friends' comments as talking points, to engage in 'offline' conversations or conversations on other platforms beyond the broadcast of the programme. Moreover, users also reported that the sharing aspects of the platform encouraged deeper consideration about their commenting practices; users expressed desires to produce content that their friends would find interesting, funny or otherwise engaging, and doing so required reflection on the imagined

audience reception for such comments. While second screens have been shown to heighten certain forms of engagement with TV programming, they do also raise specific challenges. In both [2] and [3] it is noted that designers have to mitigate the potential difficulties users may find in managing their viewing across multiple screens without disrupting or sacrificing the "liveness" of the event itself (e.g. pausing the broadcast to post or read comments).

TV, Social Sharing and Politics

In [11] Brooker et al examine the differences in topics arising throughout different periods of Twitter conversation across the first series of *Benefits Street* – a reality TV series broadcast in the UK commonly bracketed as an example of poverty porn [26]. The authors note that when the programme was broadcast live, where the majority of Twitter conversation was located, the content of tweets demonstrated an orientation to the programme as a piece of entertainment. Here, tweeters frequently commented disparagingly and judgmentally on, for instance, 'characters' in the show, focussing on their appearance, on-screen behaviours and lifestyle. This is a finding echoed in related work on reality TV and second-screening by Doughty et al [18]. However Brooker et al noted that during the periods *between* programmes a different and more critical quality of conversation was evident. This conversation explored the motivations of the producers of the programme, the juxtaposition of corporate and individual tax avoidance and welfare, and the aspects of the programme which were seemingly fictionalised, despite being presented as a documentary.

Specific Interactions for Critical Second-Screening

The above studies demonstrate how people already engage with second screening and socio-political discussion around reality TV, and the potential for bespoke applications to support more critical co-viewing of broadcast media. However, these studies also demonstrate the difficulties users may experience in navigating around and unpicking user-generated second screen content, due to the ways in which these broadcast media interrelate socio-political issues and TV entertainment. The question is therefore: how can interaction design facilitate and encourage critical reflection whilst second-screening?

Leaning Forward / Leaning Back

Vaccari et al emphasise the capability for existing second screening practices to blur the distinction between "lean-forward" and "lean-back" practices. They note that second screening blurs and complicates the relationship between information seeking and "*relatively passive, information-reception practices classically associated with broadcast media*" [37, p.1044]. They explore the effects of using interaction design to place a greater emphasis on more active "lean-forward" practices noting that amongst their study participants the "relatively active" practices of live commenting "*contributed to a statistically significant increase in individuals; propensity to engage in a range of political activities*" [37, p.1055]. Hence, they conclude that

while second screening has the potential to influence political or civic engagement, it may only be able to do so if it supports non-passive involvement with the broadcast media rather than just serving as “*additional source of information*” about it [37, p.1055].

Social Tagging

Previous research has explored the idea of social tagging as a non-passive mode of engagement with information. [1] explore tagging practices around two photo-sharing applications, ZoneTag and Flickr, noting that users simultaneously used tags to convey opinions around the content of media and to improve image searchability for themselves and others. They identify two functions of tagging: organization and communication as well as two modes of sociality: tagging for-the-self and tagging for-others. Users' tagging practices were noted to fluidly move between all types, with images often containing tags that fitted all four criteria. Overall, tagging was shown to facilitate critical thinking about how tags would be received and understood by others. [29] and [34] studied two applications - *MrTaggy* and *SparTag.us* - which use social tagging to append contextual metadata to web pages to be used in enhanced web searches (*MrTaggy*) and more easily select relevant information from within web pages (*SparTag.us*). Both studies demonstrate that the activity of information-seeking with tags encourages users to engage differently, and more critically, with information corpora. In [29] users of *MrTaggy* reported being more engaged in exploring search results with social tags than participants using standard search engines. Similarly, in [34] *SparTag.us* users visited fewer URL sources, relying more on tags to describe and make sense of provided information. This was especially so when those tags had been produced by friends. Hence, across both applications, the tags themselves act not merely as navigational tools but are a resource for engaging more deeply and critically about content.

Information seeking with social tags therefore seems to have the capacity to support users in sense-making work and to interpret and situate their own responses alongside the responses of others. However, [7] also show that the act of tagging information in itself is important in terms of encouraging users to think critically about information. Their study investigated how semantic priming [21] only occurred when users had themselves tagged similar information previously. In other words, users reflect on information, or its tagging, more after they have viewed other people's tags or have produced their own tags to assist others in sense making.

Poverty Porn

Precipitated by the effects of global recession, combined with national implementation of austerity measures, a recent focus of debate in the UK has been a particular brand of “reality TV” [6] that seeks to depict people of low socio-economic status supposedly going about their everyday lives. Examples of well-known series that fit this genre,

which has frequently been referred to as poverty porn [26], include *Skint* and *Benefits Street* both of which were commissioned by television broadcaster Channel 4. Despite often controversial content, this genre of TV is extremely popular with the viewing public. When broadcast in mid-week evening prime time slots, and at its peak, *Benefits Street* was watched by almost 6.5 million UK viewers [14] per episode. Lamb [31] documents the proliferation of this type of TV programming since 2013, and this is also evident from TV viewing figures. For instance, on Channel 5, in the UK, in September 2014 poverty porn programmes comprise only two of the top 30 programmes, with 3.2 million combined viewers. In contrast, September 2016 shows 11 poverty porn programmes in the top 30, with 17.7 million combined viewers [10].

Media, political and academic reaction to UK poverty porn TV has been varied. Right-of-centre politicians and tabloid newspapers have seized upon the popularity of the genre – as well as apparent public outrage regarding the alleged feckless and immoral behaviour of people portrayed in the shows – as a mandate for ever more punitive austerity measures and welfare reform. Left-leaning commentators point out the inaccurate, simplistic and ultimately problematic framing of poverty and welfare claimants – a point reinforced by the majority of scholarly work. It is argued that poverty porn TV is created to suit a right-wing neoliberal agenda that exacerbates inadequate public understanding of welfare and poverty and prevents reasoned, informed and nuanced critical or plural debate. Macdonald [31], for instance, exposes the falsehood perpetuated by *Benefits Street* that there are generations of families living in ghettos of unemployment. Cole [15] observes that ‘*public discourse has become saturated with ... pejorative stereotypes of teenage mothers, feckless fathers, troubled families and fraudulent claimants*’. Perhaps Jensen [26] makes the clearest link however between consumption of poverty porn and public misunderstandings of welfare, arguing that that such television ‘*crowds out critical perspectives ... making the world appear self-evident and requiring no interpretation, and creating new forms of neoliberal commonsense around welfare and social security*’.

DESIGNING FOR CRITICAL CO-VIEWING

Taking lessons from the above discussion, we pursue several ideas in the design of two second screening applications – *Spotting Guide* and *Moral Compass* (henceforth SG and MC). Across both applications we aim to encourage the provision and creation of user-generated content around programmes, on the grounds that it promotes engagement and reflection by viewers. Similarly, both applications are premised on encouraging less passive and more active second screening activities, utilising interactions such as ‘spotting’, ‘tagging’ and ‘navigating’ (as opposed to merely passively reading) content. This, according to the research discussed above, has the potential

to support lasting engagement with the socio-political issues emerging from broadcast media.

In the following sections, in turn we describe the design and implementation of the applications, the study design for their evaluation, and the findings from the studies. For clarity, we discuss the applications and their evaluations in isolation, before discussing overlaps between the studies at the end of the paper.

SPOTTING GUIDE

The SG app was inspired by traditional paper-based “spotting guides”, such as the Michelin I-Spy spotting guides popular in the UK [39]. Aimed at children, these books motivated readers to look for specific objects, such as train signals or bird species, and record them in their spotting guide, culminating in a reward from Michelin for completing the guide. The books were well circulated, and the “spotting” genre covers many subjects. As such, the concept of “spotting” occupies a place in the cultural imagination of the UK and is familiar to many people, as noted by [5]. Motivated by this, it was envisaged that a digital spotting guide could be created for reality TV. Users would be required to look for and record interesting patterns they see in a programme, hitting a ‘+’ button next to the desired category (Figure 1). If users identify something interesting that is not in their spotting guide at all, they can type a new category in, and use this to spot future occurrences.

The design of SG is intended to allow users to identify and spot patterns of reality TV production that portray people in a negative or stereotypical way. At the technical level, the spotting experience begins with the user synchronising their activity with the beginning of the broadcast via a ‘start’ button, allowing the app to be used with live and recorded programmes and those viewed through a digital “catchup” service. The app was developed as a web app, using HTML5 and JavaScript. The app was optimised for use on smartphones with testing across a variety of common web browsers. Spotting data was stored centrally, which was subsequently printed to aid discussion in the workshops.

Study Design

Participants were recruited via poster and email advertisement distributed around Northumbria University and Newcastle University, in Newcastle upon Tyne, UK, as well as local cafes and bars. To maintain discussion group sizes and to aide scheduling, two groups were created. A total of 12 participants took part in the study, divided into two groups of 5 and 7 participants. Participants ranged between 18 and 35 years of age, and comprised 6 females and 6 males in total, and per group: 2F/3M and 4F/3M. All were familiar with, and used social media. Participants were compensated for their time with a £40 voucher. The evaluation was conducted over a three-week period, with one workshop per week. Each workshop involved a discussion, along with short activities in relation to the SG. Between each of these workshops participants were asked

to complete a “homework” exercise. These involved using SG whilst watching television. Participant experiences and the outcomes of their ‘spotting’ activities would then be discussed in the following workshop. Overall this formed three workshops, and two homework activities per group.



Figure 1. Mock-up of SG being used as a second-screen

Workshop 1 comprised a short discussion to contextualise the research, as well as explore the participants’ knowledge and feelings towards reality television, and specifically othering and stigmatisation. Participants were also introduced to the app, and through a series of training exercises, shown how to use it. **Homework 1** involved participants watching an episode *Benefits Street*, at home, and using the app at the same time. *Benefits Street* was selected as it is a well-known UK reality television show, which follows the lives of people living on state welfare in a deprived area of the UK. **Workshop 2** began by inviting participants to discuss their experiences of watching and using the app, followed by a group exploration of their anonymised ‘spotting’ data. **Homework 2** consisted of participants selecting their own programme to use the app with. They were provided a “blank” app, with no pre-created categories, and asked to create these themselves. **Workshop 3** comprised a short (2 minute) presentation by each participant of the programme they selected, and their experience. This then flowed into a group discussion about their homework task supported by participants’ data, and a final reflection on the overall experience.

During the workshops, all of the discussions were audio recorded and then subsequently transcribed. Inductive thematic analysis was conducted [8] on this data by three researchers, which involved a researcher producing an initial codebook, which was checked and discussed with two other researchers. Agreed codes were then used to recode the data, which was subsequently clustered by all three researchers to create a thematic structure for the data.

FINDINGS FROM SPOTTING GUIDE

Below we present the themes from our analysis, which are grouped around two overall themes of *Acts of Doing* and *Acts of Thinking*.

Acts of Doing

This theme comprises participants' views of how they used SG and how it affected their viewing experience. This is divided into three sub-themes: *Making Spots*, *Accuracy of Spots*, and *Spotting While Paying Attention*.

Making Spots

Discussing the initial "seed" spotting categories created by the research team for Homework 1, participants had mixed views of their value: *"Dogs" – I never felt they were particularly important to the narrative, it was just there* [P5, G1]. When creating spotting categories, using things that were visually prominent in the programme was common: *"... a really messy bedroom with just thousands of cosmetic products littering the floor, and picking up on those sorts of visuals"* [P7, G2] and *"I made [a category] for swearing, which was a very bad idea because I had to press it... a lot"* [P4, G1]. The interaction to spot an instance of a category was described as easy, compared to the live-tweeting process: *"Something will prompt you to tweet, and then you focus on that... it will take longer than tapping a button for an existing [spotting category]."* [P2, G1]. The interaction was also described as game-like: *"The closest parallel I can think of, is US or British elections where you've got buzzword bingo... something you tick off and first person to get a line wins"* [P2, G1].

Accuracy of Spots

Throughout the study participants expressed a desire to be consistent when they were spotting and creating categories: *"The problem of wanting to redo it. By the end of 25 minutes I created a category... if I went back and watched them again I think more things would have been spotted"* [P4, G1]. Difficulty deciding whether to make a spotting category was another concern of the participants: *"I kind of regretted that I hadn't made a spotting category... I realised something had repeated and I hadn't made one... you wanted to go back and re-spot it"* [P3, G1]. Over time, participants observed that the meaning behind a spotting category they defined changed over time: *"I had one saying drug use that came from cigarettes, then I think there was a point that [I] started classifying cigarettes as drug use"* [P8, G2]; and: *"A spot that I created during the intro because I thought it was going to come up a lot, it was 'war analogies' and I ended up repurposing it for things like violence"* [P6, G2].

Spotting While Paying Attention

Several participants described the high cognitive load required to watch a television programme, critically analyse it and integrate this analysis into an app: *"It definitely came in fits and starts [...] where suddenly I was going swearing, crime, rubbish – all within about ten seconds. ... I was trying to do too much at once...."* [P7, G2]. Specifically, it

was noted that remembering all of the spotting categories created was difficult: *"You've got a long list in your head, it's hard to keep track. Hang on – do I need to create another spot or is this already covered?"* [P2, G1]. Participants noted how attention was often split between the app and the television, notably due to the amount of work required to use the app: *"You are concentrating on typing... I must have had 20 spotting categories altogether, so I was constantly doing something whilst absorbing information"* [P1, G1]. Participants also noted how their attention would be split between the audio and the visual elements of the programme: *"I'm much more of an auditory person, so I was focussing on what was being said"* [P4, G1]; and: *"...focussing more on what was being said by the characters rather than seeing it because it was very difficult to see and spot at the same time"* [P7, G2]. Finally, issues with attending to spots and the shows at the same time were further influenced by the pacing and editing of the programmes being spotted: *"It's very slick – there's music overlaid, there is commentary, there is what people are saying, then there is whatever visual happens to be on screen. Then switch to something going on in the background whilst that person is still speaking"* [P2, G1]; and *"That was a major thing at how fast paced these programmes are and you don't realise it. Then there's someone with a cigarette talking about money, then you want to make another [spotting category]"* [P3, G1].

Acts of Thinking

This theme encapsulates participants' wider reflections around issues presented in reality TV, as well as how the process of using the app provoked or inhibited reflection. This is divided into three sub-themes: *Reflecting on Spots*, *Interpreting Content* and *Sharing of Spots*.

Reflecting on Spots

During the workshops, participants mentioned they would not normally watch reality TV type programmes such as *Benefits Street*, but two had seen an episode of it before. They reflected on how SG could encourage them to think about the programme production: *"One way of challenging conceptions about othering is to get people to pay attention to what it is the programme makers are doing"* [P1, G1]. These sentiments were tied into an overall view that the app could promote mindful viewing of TV – being aware of the content in the show, as well as how and why it has been selected, edited and shown in a particular way: *"There are two types of watching the app has brought out for me. The turn your head off watching and then there is being analytical"* [P3, G1]. One participant humorously remarked: *"It's going to ruin my viewing pleasure from now on... it won't be mindless anymore. I'm just going to deconstruct everything"* [P10, G2], while another noted: *"talking about and analysing all our data [...] allows you to go 'There – I've been manipulated!'"* [P7, G2]. Participants discussed the nature of ad breaks, and how this could be used to reflect on the content in SG: *"[During ad] breaks you think 'I'll make a cup of tea', but it would be a*

different kind of dynamic if during the ad break you were reflecting on the data. It kind of gives you time to do that” [P5, G1].

Interpreting Content

Participants suggested that the pre-existing prejudices and beliefs of a user might be reflected in how they use the app, through the kinds of things they would spot: *“If you gave the app to someone who was predisposed negatively to [claiming state welfare], they would be going ‘oh my god, how terrible!’ They wouldn’t be thinking through behind the scenes”* [P2, G1]. The subjectivity of how a spot is interpreted, or noticed in the first place was discussed: *“If you have one person from Vote Leave and Vote Remain [Brexit] watching exactly the same thing, they would come up with different responses... we all have certain viewpoints.”* [P5, G1]. Participants openly reflected on how their preconceptions affected their programme choice and the data they created: *“I deliberately chose a show that I knew would be playing to particular stereotypes with the people in it. So I started trying to spot what I thought were particular instances of the stereotype”* [P7, G2]. Further to this, reflecting broadly on second screening activities to provoke thought about reality TV, participants noted if the ideological views of the second screening activity are too “alien” to their own views, they may disengage from the app: *“For example spot every time the Conservative government do something lovely – if that’s too alien then they would just not engage”* [P1, G1].

Sharing of Spots

A sense of curiosity was shown by participants, towards what the rest of the group were doing: *“I would be interested to look at their spots, as we were watching the same programme, just to see how they map onto each other, the similarities and the differences.”* [P1, G1]. They also described how showing their homework spots in the next workshop affected their spotting practice: *“In a way I knew I was going to be judged... they’re [other participants] going to look at my spots”* [P3, G1] and *“I like sharing my opinions, but I would be more careful if I knew I would share spots, so would try to make it as neutral as possible”* [P8, G2]. However, a few participants expressed concern that sharing spots could negatively affect other users by conforming to the majority opinion: *“Exposing people to the comments of others could potentially force them to reflect on their own comment if it is different... my concern is the danger of the majority”* [P1, G1].

MORAL COMPASS

The MC is a two-part app: MC Tagger for tagging live Twitter streams, and MC App for visualising the tagged Twitter streams. Given that Twitter streams can display a plethora of political [11] and moral views [27] a user of MC App watching a programme is able to see what the “morals” of the Twitter stream are, created by another user of MC Tagger. MC Tagger allows users to interpret Twitter streams, with MC App allowing reflection on views of the tagger, and the views in the Twitter stream.

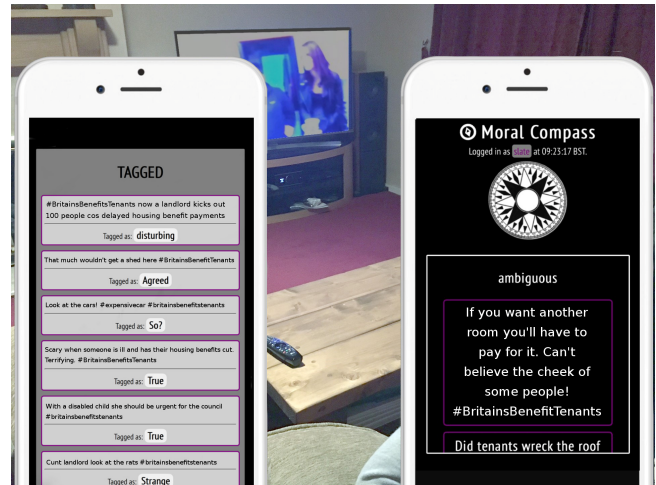


Figure 2. Mock-up of MC Tagger (left) and MC App (right)

Of course, a “morality filter” does not exist as an interface, or data layer on Twitter, and thus MC Tagger allows users to tag individual tweets in a live, programme related Twitter feed with their interpretation of each tweets “morality”. Users also had the option to ignore a tweet if they were not able to tag it, and were asked to check the app frequently and tag tweets at their own rate. The MC App visualises the resultant morally-tagged Twitter stream as points on a compass, which a user is able to rotate to see the different “moralities” (e.g. Figure 2 showing the “ambiguous” tag). During evaluation we deployed one-tagger to one-viewer, but the app can also support one-tagger to many-viewers and many-taggers to one-viewer relationships. Both parts of MC were developed as a web app, using HTML5 and JavaScript. STOMP and Apache ActiveMQ were used to supply real-time data from the Twitter Search API. Tagging data was stored centrally, which was subsequently printed to aid discussion in the workshops. To anonymise Twitter data, we followed the BPS Guidelines for Internet-mediated research [9] ensuring the use of only publically visible tweets associated with a hashtag of a TV programme, removing the identity of tweet authors and disabling tweeted hyperlinks. Due to the app’s focus on the nuances of tweet content, we did not rephrase tweets seen by participants, however all examples in the figures and discussion presented in this paper are anonymised.

Study Design

Participants were recruited using posters and email advertisement at the University of Bath, Bath, UK. To maintain discussion group sizes and to aid scheduling, participants were split into three separate groups. A total of 15 participants took part in the evaluation, divided into three groups of 5, 4 and 6 participants, totalling nine workshops. The majority of participants ranged between 18 and 50 years of age. The participants comprised 10 females and 4 males into total, and per group: 3F/2M, 3F/1M and 4F/1M. All were familiar with, and used social media. Participants were compensated for their time with a £40 voucher. As per the SG study, evaluation was conducted

over a three-week period, with one workshop per week. Again, each workshop involved a discussion, short activities in relation to the app and “homework” between each workshop. Participant experiences and outcomes of their activities would then be discussed in the following workshop. Overall this formed three workshops and two homework activities per group.

At **Workshop 1**, the context of the work was introduced, followed by a short discussion to explore the participants’ knowledge of reality television and assumptions and experiences of othering and stigmatisation on social media. For **Homework 1**, participants were asked to use MC Tagger at a specific time where they would tag tweets from a live Twitter stream for approximately one hour, as a training and learning exercise. **Workshop 2** began by inviting participants to discuss their experiences from the homework task. Discussion then moved to the specific tweets they came across, broadening to their overall experience using the app. In **Homework 2** participants were paired together, with one person tasked with making tags using MC Tagger, and the other using MC App during a live broadcast of *Britain’s Benefits Tenants*, a UK reality TV programme about those living on state welfare and their interactions with their landlords, focused on the worst examples of neglect or mistreatment of housing. Participant pairs were picked randomly considering those who had access to live TV, with odd numbered groups having multiple MC App users. **Workshop 3** started with a group discussion in their pairs, followed by a wider discussion about the homework tasks and the overall process.

As per the SG study, workshop discussions were audio recorded and transcribed. Analysis followed the same process as that for the prior study.

FINDINGS FROM MORAL COMPASS

Below we present the findings from our analysis, which are grouped around two overall themes of *Interpretation and Critique* and *Navigating the Compass*.

Interpretation and Critique

This theme covers participant’s discussion around interpreting the content being presented to them in the MC Tagger, and on the process of making critique on tweets and its wider impact on the apps. This theme is divided into two sub-themes: *Interpreting Content* and *Critique and User Perspective*, each of which is discussed below.

Interpreting Content

Representing tweets in MC involved anonymisation by removing the author and disabling hyperlinks. Participants expressed that they struggled with interpreting tweets, noting there may be a deeper context: “*I thought that’s not fair. I genuinely thought there’s more to it.*” [P1, G1]. This also manifested as a desire to follow up tweets to explore the issues being discussed by the tweeters: “*There are things I think I would really like to know, for example how the housing situation has improved in certain places*” [P6,

G2] and “*Sometimes I want to look on the [Twitter] website to look at whole contents, but [hyperlinks] didn’t work - it made me most confused*” [P14, G3]. Reflecting on the second screening nature of the MC Tagger, the activity placed an attentional demand on the participants: “*I was very disappointed in myself [...] I found that I couldn’t multitask*” [P1, G1] and “*Sometimes I missed out like a couple of minutes, maybe, because I was trying to go through a lot of the tweets.*” [P6, G2]. However, others noted they balanced this attentional demand by using different methods, such as a “catch all” tag or using the ignore button: “*Something like ‘I love cannabis’, I just put as ‘irrelevant’ because it didn’t really say anything about the show*” [P6, G2] and “*I just ignored... some of them were so weird!*” [P9, G2].

It was clear that some participants were attempting to provide a balanced viewpoint of the Twitter stream through their tags. During Homework 2, one participant noted the tags used for the two-sided debate seen in the Twitter stream: “*I had ‘landlord sympathy’ but sympathy with tenants was just ‘sympathy’*” [P13, G3]. When presented with their own tags in Workshop 3, generally participants noted they were happy with what they had done: “*It’s funny to see the things that I’ve tagged them as but I do, I think I kind of stand by the things that I’ve said.*” [P13, G3].

Critique and User Perspective

The discussions around MC Tagger highlighted the presence of a tension between anonymised tweets and de-anonymised tweets. One participant described how anonymised tweets stopped prejudices forming about the tweeter: “*seeing them anonymously, I found it a lot easier to be impartial*” [P13, G3]. However, this was contradicted by others: “*I think I wouldn’t find much utility in that information without knowing [...] who they are.*” [P10, G3]. This reflection around prejudice also led to participants openly discussing their processes of self-censorship, or considering who might be viewing their tags: “*Actually it was me trying to police myself because two people were going to be reading it.*” [P1, G1] and “*I had to tag it as ‘mean’ because if the tenants [in the show] ... read this they would feel like they are being targeted*” [P6, G2].

One prominent discussion thread was the possibility of the user’s perspective and political viewpoint being reflected in the way they tag tweets: “*Somebody who’s quite right-wing or not in the same age bracket would have very different opinions and interpretations of what people were saying*” [P8, G2], and similarly, “*I would definitely be hesitant to read the rest of it, if I saw that somebody was tagging a really mean tweet as a funny one. I would think that the tagger is twisted*” [P6, G2]. Reflecting on a similar theme, another group suggested the problems that might be created when nominating a tagger. One participant sarcastically proposed, “*I want Stephen Fry to basically tag a load of things and make sure that I don’t see the things that he thinks are offensive*” [P13, G3]. In this vein, the

same participant identified that the MC would be a useful tool for censoring specific viewpoints out of the Twitter stream: *"I was wondering during using it for the tagging thing about the potential for it to be used for censorship and I don't really like the idea of that"* [P13, G3]. An interesting behaviour was noted in relation to the MC App users, where they would initially try to understand the political viewpoint and perspective of the person performing their tagging. This process of trust building was explained by one participants: *"[I] probably looked more at the more controversial words like the stereotyping"* [P2, G1], to see if they would have tagged them the same as themselves, while others noted it took them time to become familiar with their tagger: *"I think there's a sort of period of time where your kind of understanding the consistency [of the tagger]"* [P13, G3].

Navigating the Compass

This theme focuses on the participants' use of and reflection about using MC App, and specifically about the compass interface. Participants felt the compass was useful for viewing a large number of tweets, due to tweets being shown by turning the compass wheel: *"it was quicker and easier to look at the compass than it was to look at the timelines"* [P2, G1] and *"it was less effortful, you can consume more, rather than, Twitter when you're constantly scrolling up and down"* [P10, G3]. The ease of use was further drawn out when talking about the second screening experience: *"you could just almost flick through, look up, look down so it was quite easy to use."* [P2, G1] and *"I also liked that it wasn't too distracting"* [P13, G3]. The compass interface was also used in playful ways, to find unexpected or new tags and tweets: *"Certainly playing a bit. Sometimes scrolling a bit further... maybe by taking a whole turn back and forth, just to see where I would end up"* [P7, G2] and *"I wasn't purposely thinking 'I'll go back and look at...' It was more going round and round and round"* [P11, G3]. Some participants noted that ad breaks in the programme provided them time to reflect on the tweets and tags around the compass, without distraction from the programme itself: *"I'd say as the programme progressed, I probably in the ad breaks paid more attention to it because of the... tweets that were being generated"* [P10, G3] and *"That's why I liked the commercial breaks because it actually gave me a break to go back to the compass"* [P7, G2].

Significantly, participants described how they used the compass as a filter to look for tags of a specific kind: *"I wanted to look at the more positive comments so I tended to stop on some positive tags"* [P11, G3]. This sentiment was extended to second screening contexts where this would be useful: *"if I were watching, I don't know ... Strictly Come Dancing tweets, or Great British Bake Off tweets, I wouldn't want to see, in that context, racist tweets"* [P10, G3]. Subsequent to this, there was discussion about the qualities of different types of programme-related Twitter streams, and where debate fitted into it. Talking about cookery programmes: *"I just think that in some contexts,*

you don't necessarily want to see that, because it's not a debate" [P11, G3], was contrasted with the stream for Britain's Benefits Tenants: *"something like tweets about this programme, feels like a debate and it's quite appropriate"* [P11, G3].

DISCUSSION AND IMPLICATIONS

At the outset of this work, we set out to design and evaluate two smartphone apps that facilitate and promote more critical live-viewing of reality TV. From our evaluations of SG and MC we show that such interactions encourage more critical thinking around editing and production techniques and foster co-discussion and reflection amongst viewers. In this section, we provide a set of discussion points and associated design implications drawn from our evaluation. These are structured under two broad headings: (i) encouraging reflection on reality TV and (ii) critical reflection and co-viewing.

Encouraging Reflection on Reality TV

Here we discuss the design implications of both apps for provoking viewer reflection on TV, drawing on both our own findings and previous related research.

Designing for friction

There is an important tension between viewing the TV programme and interacting with the apps. SG participants expressed that using the app was an intense interaction, requiring them to search continuously for patterns within the programme, with MC Tagger being discussed similarly. Using MC App involved rotating and exploring the tags and tweets around the compass, which is an activity users can switch into and out of as they desire, with ad breaks being noted as a natural moment to interact and reflect more deeply on the tags and tweets. Users of the MC Tagger described how they were able to tag tweets at a steady rate during the programme, with the "ignore" button helping them skip those that proved too difficult. The design of both SG and MC demonstrates the effect different interactions have on the second screening experience with a view to guiding the type of reflection and discussion that occurs towards the programme.

In the context of civic participation, Korn and Volda [28], discuss the ways in which "friction", conscious design decisions that make interactions less seamless, which take a non-neutral stance or position, can be incorporated into the design of digital systems to encourage deeper critical engagement and responses from people in contexts and situations where passivity is the norm. Whereas Basapur et al [3] and Anstead et al [2] express concerns about the fluidity and smoothness of engagement between viewing across a TV broadcast and an application, we can view the intensity, and friction of the SG interaction as positive. The spotting process itself provoked viewers to engage more critically than they might normally in examining the production techniques and portrayal of characters. Participants were forced to engage more deeply with the content of the show by making trade-offs between creating

and adding “spots” with watching the show; and developing strategies where they focused more on sounds and speech rather than what was shown. Similarly, points of friction were seen in the MC Tagger, where participants were put into an interpretative position with little context for the tweets they tagged. While undoubtedly hard work, this aligns with Korn and Volda’s principle that “*designs for friction want to cause trouble. They do not want to help you; rather they place little obstacles in your way*” [28, p8]. Therefore, with the difficulty and intensity in spotting portrayals in reality TV or in tagging the morality of a tweet, we carved out “*space for reflection in the residue between activities*” [28, p8].

Managing flexibility & agency whilst enforcing criticality

At an interaction level, the compass interface of MC was found to be easy to use, and also allowed the serendipitous “discovery” of tweets & tags. The users toyed with the compass wheel, which led to a process of serendipitous discovery of tweets and tags some had not seen before. Future designs of second screening apps oriented towards reflection could scaffold this behaviour, e.g. encouraging serendipitous interactions [30]. It was also shown that participants used the compass wheel as a way to filter the tweets. By mapping tags to specific points on the compass, users were able to identify or avoid a tag they did not want to see, such as racist tweets. This process also extended to switching between types of content during the second screening process, moving between tags such as *humour* and *funny* to more critical and reflective tags such as *unfair* and *more to it*. Users also reported feelings of pressure and hurriedness in their tagging and exploring during the broadcasts of programmes, and that breaks for advertisements provided a similar opportunity to engage in more thoughtful tagging (e.g. to return to tweets that had been deemed too difficult to tag during the live broadcast) and open-ended exploration of the tagged corpus e.g. in the case of MC (cf. Korn and Volda [28] and DiSalvo [16, 17] on leveraging discomfort to provoke critique and reflection in software users). Here, the ‘light relief’ offered by breaks in programming provided opportunities to engage with different elements of the provided material. This suggests that if a second screening app designed to provoke criticality and reflection was *purely* focused on criticality, it may not be as successful as one that allows users to move between critical, reflective content, and more humorous (though less reflective) parts. The capacity to support critical reflection around co-viewing of broadcast media may, counter-intuitively, also rely on provisioning for less critically-oriented activities. Put differently, it may be infeasible to ask users to perpetually “lean forward” into non-passive engagements with the information they are provided, and some periods of “lean back” relaxation are seemingly required in order to potentially deepen and maximise engagement with the application in a broader sense (cf. Vaccari et al [37]).

Allow users to re-define what tags mean to them

It is clear that participants were reviewing their own “work” and resultant data throughout both evaluations. This also extended to their own definition for the behaviours, patterns and sentiments they were classifying, which aligns with Bodoff and Vaknin’s [7] depiction of tagging as a way of non-passively engaging with information, and as a means of encouraging users to reflect on their opinions around the information to be tagged. For example, one participant reflected how their spotting categories *cigarettes* and *drug use* began to overlap in their own use of the app, which then prompted a deeper reflection of their own views towards cigarettes and drug use. This is a clear example of a user reflecting on the content of the show, prompted by the use of SG. Future apps may include a user-editable “description” field accompanying each category or more thoroughly through a diary-type interaction where a user can record how their meanings have changed over the course of use. Design considerations may also include the capacity for users to remove, redact or rename tags, or to provide multiple tags for content to reflect the conflicting opinions that may be experienced by individual taggers.

Providing context

In re-visualising the Twitter stream in MC, as well as MC Tagger, users felt that, due to the anonymisation process and brevity, large amounts of context was lost. One of the affordances of the Twitter platform is that it allows users access to metadata (e.g. biographical information, recent tweet history, etc.) to contextualise and help situate the meaning of tweets. As participants in the workshops expressed, following up these details provides a potential strategy by which to glean extra information about a tweet and its author: e.g. their ideological standpoint, whether they troll, or who they follow. Without access to this extra contextual information, we can surmise this may have contributed, in part, to the difficulty experienced by MC users in tagging tweets. For SG, the context of the activity is within the programme itself, and therefore, whilst it does not involve an investigative process to understand extra context, it does demand more attention to the programme and effort on behalf of the user to translate that into the app. However, in line with “friction” as a design principle for both apps [28], we might also say that the lack of context required users to reflect on the meaning of tweets to a greater degree (as opposed to having those meanings easily explained by associated metadata). Hence, though provisioning some degree of context around information may be necessary, this should not be at the expense of providing opportunities to think about and critically evaluate and reflect on the information provided.

Critical Reflection and Co-Viewing

In this section, we explore how our findings – in tandem with previous literature – might be used as a platform to encourage and facilitate future critical reflection during *social* second-screening, or co-viewing.

The audience /'public' as a resource for critical thinking

SG and MC both encouraged its users to think about the audience reception of their tags and spots, which evidences Kammerer et al's [29] and Nelson et al's [34] claims that the social tagging process is not simply about annotation. Rather, tagging encouraged more critique and reflection around the users' own standpoints on an issue and how others might react, forcing the users to think about what their tag would mean shared publicly. In both, participants also openly admitted they *"policed"* or changed the way they tagged tweets and spotted patterns. This tension is unsurprising, given that existing work suggests that an increasingly critical engagement with broadcast media is premised on a level of interaction with them that goes beyond the passive reception of TV shows and their related user-generated content. As Baumer et al [4] note, when confronted with a morass of different and competing standpoints on a socio-political issue (such as with unfiltered social media feeds), it may be difficult to even identify and situate your own opinions within the wider debate. For designs that utilise social sharing of data, this is significant because it shows, in the context of polarising reality TV, that social tagging moves beyond simple annotation of content towards critical/reflective thinking around the users own viewpoints. Hence, balancing users' capacity to self-censure against the core mechanic of openly sharing genuine opinions with a real or imagined public is a key consideration for second screening applications designed to support critical/reflective thinking.

Support differing viewpoints

The unmoderated nature of the tagging and spotting activity was acknowledged by participants as allowing different opinions to be shared. MC was recognised as a useful tool for filtering such content, which could therefore also be considered as a tool for censorship. Such concerns might be addressed by actively promoting the difference of opinion through future re-design. For example, users could be prompted: *"you haven't viewed this compass point yet, is there a reason?"*, or *"are you aware that [opposite viewpoint] is being said over here?"* This would help to recast the idea of censorship as a resource for critical thinking and provocation – i.e. if you are only viewing the content you want, you might unthinkingly be censoring an oppositional view. Being urged to reflect on this filtering, rather simply being presented with filtered information may prompt deeper thinking about *why* you did not want to see it. Preserving divergent viewpoints in the design of second screening apps aligns with the principle of providing agonism in Adversarial Design [16]. This might be achieved in future re-designs that allow differing or opposite viewpoints to be presented in MC without necessarily forcing users to view them, whilst being wary at the same time that this might allow majority opinion to dominate.

Limitations & Future Work

Both apps were deployed in relatively controlled settings and participants were willingly participating in an organised study: as such, reflection and criticality may be heightened by participants thinking forward to the face-to-face workshop sessions more so than in normal day-to-day usage. Additionally, there is, by design, a tension between entertainment and engagement in the second-screening context. However, outside of the context of the research this may lead to disruption of users' entertainment. We acknowledge these issues as shortcomings of the work, and suggest that future work in this area should focus on methods for integrating these technologies into the everyday practices of TV viewing. As discussed above, we posit this may be achieved through encouraging playful, serendipitous interactions with the app, or allowing self-censure to encourage reflection and reduce tension around being judged by other users.

CONCLUSION

In this paper we report on the investigation of designing user interactions for critical second screening. We conducted our investigation through the evaluation of two smartphone apps: Spotting Guide and Moral Compass, which facilitated and promoted critical viewing of reality TV. Our work contributes to existing knowledge about how users of second screen apps can be encouraged and supported to think critically about reality TV, their own views towards it and how they understand the views of others. Our findings provide a set of implications for the design of second screening experiences that provoke reflection and criticality towards reality TV, and which can be used to inform future work. Notably, we identify how friction can be used in the design of second screening apps as an intentional design choice to encourage reflection and criticality. By urging users to pay attention to the programme, and to summarise their perception of tweets in a Twitter stream, we posit that our designs encourage and facilitate more thought and reflection regarding the framing of broadcast content. Moreover, by dividing attention and motivating users to search for additional content and engage with the apps, we make the interaction purposeful and show how social tagging can evolve into a reflective process.

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