Hashtag as Hybrid Forum: The Case of #agchatoz

Jean Burgess, Anne Galloway, and Theresa Sauter

Correspondence: je.burgess@qut.edu.au

Introduction: Hashtag Publics, Hybrid Forums

This chapter imports Michel Callon's model of the 'hybrid forum' (Callon, Lascoumes, & Barthe, 2009, p. 18) into social media research, arguing that certain kinds of hashtag publics can be mapped onto this model. It explores this idea of the hashtag as hybrid forum through the worked example of **#agchatoz**—a hashtag used as both 'meetup' organiser for Australian farmers and other stakeholders in Australian agriculture, and as a topic marker for general discussion of related issues. Applying the principles and techniques of digital methods (Rogers, 2013), we employ a standard suite of analytics to a longitudinal dataset of **#agchatoz** tweets. The results are used not only to describe various elements and dynamics of this hashtag, but also to experiment with the articulation of such approaches with the theoretical model of the hybrid forum, as well as to explore how controversies animate and transform such forums as part of the emergence and cross-pollination of issue publics.

We proceed on the understanding that publics are multiple and emergent—that is, they are constituted through their material involvement with issues and events, rather than pre-existing as a 'public sphere' (Marres, 2012). Digital media platforms are transforming both the nature of such publics and the means through which they engage with issues (Papacharissi, 2010; Bruns & Burgess, Chapter 1, this volume);

digital methods present significant new opportunities to observe, describe and understand how issue publics work. In digital media and communication research, it is so far been Twitter that has been most visibly the target of digital methods-based approaches to studying public communication in this way—see for example the chapters collected in *Twitter and Society* (Weller, Bruns, Burgess, Puschmann, & Mahrt, 2014).

Within such approaches, hashtags are often used to focus empirical research on the dynamics of public communication, on a range of traditional topics extending from elections to natural disasters and television audiences (Bruns & Burgess, Chapter 1, this volume; Bruns & Stieglitz, 2012; Deller, 2011), arguably leading to a saturation of what we might call 'hashtag studies'. Most such studies consider the hashtag to be a pragmatic communicative marker that serves to coordinate discussions and establish more or less stable and consistent groups of contributors (see Halavais, 2013 for an overview of the early applications of hashtags, or 'channel tags' as they were dubbed at first). Bruns and Moe (2013) highlight how hashtags generally operate at the macro level of communication on Twitter (with follower-followee networks being at the meso level and @replies at the micro level).

Bruns and Stieglitz (2012) differentiate between three different types of hashtags: *ad hoc* ones, which emerge 'in response to breaking news or other unforeseen events' (p. 165); *recurring* ones, which users employ to contribute repeatedly to a certain topic (such as **#agchatoz,** which we investigate in this chapter); and *praeter hoc* ones, which relevant organisations predetermine and encourage users to adopt when tweeting about a particular event, such as a conference or TV show. Bruns and Moe (2013) further distinguish between topical and nontopical hashtags. They suggest that *topical* hashtags are used to contribute to a discussion on a

particular topic. These can be long-standing themes (e.g., **#auspol**), backchannels to TV events (e.g., **#masterchef**), or reactions to particular issues or events (**#royalwedding**). *Nontopical* hashtags such as **#facepalm** or **#fail** are emotive markers and can be applied to any type of tweet. Nontopical hashtags are a deviation from the initially intended use of the hashtag, yet they still serve a communicative purpose.

While hashtags may have originally been intended as content markers (see Bruns & Burgess, Chapter 1, this volume), Halavais (2013) suggests that 'they have been used as prompts for conversation, to crowdsource ideas or resources, and often to express sarcasm or parenthetical commentary on a tweet' (p. 37). Tsur and Rappoport (2012) also note that 'the use of hashtags is a popular way to give the context of a tweet, an important function due to the length constraint'(p. 645). Bruns and Stieglitz (2013) reinforce this notion of the hashtag as context by stating: 'A tweet consists of much more than just 140 characters' (p. 69). Both topical and nontopical hashtags can also be used to flag community affiliation or the desire to belong (Yang, Sun, Zhang, & Mei, 2012). Yang et al. liken the hashtag to a 'coat of [arms]' that can be flaunted to demonstrate community membership. Weller, Dröge and Puschmann (2011) suggest that hashtags support the 'spontaneous creation of networks based on shared interests'. Rzeszotarski, Spiro, Matias, Monroy-Hernández and Morris (2014) refer specifically to 'Q&A hashtags' which users employ to post questions and seek advice or information. They suggest that these types of hashtags function 'both as a topical signifier (this tweet needs an answer!) and to reach out to those beyond their immediate followers (a community of helpful tweeters who monitor the hashtag)'.

Clearly, hashtags coordinate conversations, provide context and enable people to participate in discussion and request information. They can be emotive or topical,

long-lasting or ephemeral, user-generated or prescribed. In this chapter, we use a case study of the **#agchatoz** hashtag to take into account how the hashtag not only serves to coordinate discussions and their participants, but also plays a role in shaping these discussions themselves. In this way, we consider the *performative* role of the hashtag in materially shaping and coordinating public communication on specific issues, within and across social media platforms, as well as the performativity of the available methods for studying them. Because hashtags have material as well as symbolic features, they do not merely coordinate but also shape the dynamics of the 'ad hoc publics' (Bruns & Burgess, Chapter 1, this volume) that can be activated around an issue—indeed, we might even speak of how specific hashtags call specific publics into being.

This chapter focuses specifically on how some (but not all) hashtags can be understood as what Michel Callon and colleagues, in the context of technology and society studies, have called 'hybrid forums':

> Forums because they are open spaces where groups can come together to discuss technical options involving the collective, hybrid because the groups involved and the spokespersons claiming to represent them are heterogeneous, including experts, politicians, technicians, and laypersons who consider themselves involved. They are also hybrid because the questions and problems taken up are addressed at different levels in a variety of domains. (Callon et al., p. 18)

This conceptual framework is useful in our efforts to use social science research methods to understand emergent issues marked by complexity and uncertainty, because such an approach requires that we pay empirical attention to multiple, diverse perspectives—not only those of the most visible stakeholders but

also those of affected constituencies who may not explicitly see themselves as stakeholders, and/or may engage in non-normative, playful or 'unhelpful' ways (Michael, 2012). In exploring the possible forms and forums of 'technical democracy', e.g., in relation to nuclear power or genetically modified food, Callon et al. are discussing rather more formalised and more recognisably institutional spaces—indeed, the traditional institutions and fora of democracy. But in the contemporary media environment, digital methods have much to offer—not only because social media data can be used to identify and understand the dynamics of these hybrid forums, but also because social media platforms are in themselves platforms for the emergence and coordination of hybrid forums.

Further, social media is particularly relevant to the idea of the hybrid forum because of the convergence of everyday, interpersonal and public communication that is so deeply constitutive of all social media platforms—whether in Twitter, Facebook, Instagram, or Tumblr, we can observe official government information, live documentation of street protests, memes drawing on popular culture, and everyday snapshots playing an equal part in the public communication around a controversial topic; and hashtags are very often used to introduce such content objects into the stream of an issue-related public. And adding another layer of hybridity, the traces and dynamics of such contested issues emerge within a complex and hybrid media environment (Chadwick, 2013) partly constituted via social media *platforms*, whose volatile dynamics, material features and competing business models also need to be taken into account (Burgess, 2014).

The #agchatoz Case Study

Overview

A local variant on the original U.S.-based **#agchat** farmer advocacy or 'agvocacy' Twitter community, the AgChat Oz 'digital online community' co-founded by Tom Whitty, Danica Leys and Sam Livingstone originally had a mission to 'raise the profile of Australian agriculture by shining a light on the leading issues that affect the industry and the wider community'.[1] Weekly Twitter Q&A sessions use the **#agchatoz** hashtag to capture discussions of interest to the self-identifying agricultural community, ranging from personal issues such as succession planning and rural mental health, to work matters including sustainable farming methods and how to manage natural disasters, as well as more public concerns such as animal welfare and live export. Most discussions solicit a range of perspectives from producers, consumers, scientists, journalists and other professionals; sometimes discussions connect to other issues and their hashtags (such as #**banliveexport** for the issue of animal welfare in the meat industry), thereby causing a collision of constituencies. Both the hashtag and its organisers have been covered a number of times by the ABC (Australia's primary public service broadcaster) and have close relationships with it, especially its rural affairs news division and programming.[2]

In its explicit self-framing as a forum, its persistent weekly 'meet-ups', and the way it is understood by its most regular participants as a meeting place for agriculturalists, **#agchatoz** operates more like a large, distributed and loosely organised focus group (Callon et al., 2009, pp. 164–165) than an 'ad hoc public' (cf. Bruns & Burgess, Chapter 1, this volume); as we will see, however, its existence in the dynamic environment of Twitter provokes encounters with a wider range of issues, bringing **#agchatoz**'s self-defined 'community' of users into contact with other constituencies and stakeholders. Particularly acute issues and controversies

6

mediated via **#agchatoz** can be shown to quite significantly expand the 'inventories'
(Callon et al., 2009, pp. 28–30) of both agricultural issues and issue publics.

In the study on which this chapter is based, we used a custom installation of
the YourTwapperkeeper tool to collect 7 months' worth of data (from 19 July 2013–
19 February 2014) comprising 73,218 tweets containing the **#agchatoz** hashtag. This
dataset was subjected to a standard set of metrics (Bruns & Burgess, 2012; Burgess &
Bruns, 2012) with the aid of Gawk and Tableau, including identifying the patterns of
activity over time (including correlations between particular topics or issues and
particular levels of volume and diversity in the participation), identifying the most
visible and most resonant accounts (an inventory of actors), observing and visualising
the network structure of the hashtag's participating accounts (an indication of the
communities and/or publics associated with the hashtag), and exploring the co-
occurrence of other hashtags with **#agchatoz** (an indication of hybridity and diversity
of issues and publics). High-resolution versions of the data visualisations and some of
the processed data sets are available via a Digital Appendix to this chapter.[3]

What Are the Patterns of Activity Over Time?

Weekly discussions form the foundation of **#agchatoz** hashtag use. Each month
usually includes three topics set by the moderators and one 'mixed bag' session of
questions on any topic. Participation is relatively stable, with notable spikes around
particular topics, and a lull during the December–January seasonal hiatus. The
greatest spike in activity during our sample was the 3 December 2013 'Future of
#agchatoz' discussion. Questions revolved around desired values and outcomes, as
well how the community could ensure 'all members feel welcomed, respected and
heard'. This discussion had been preceded by the fourth largest spike of activity in our

sample: the 19 November 2013 topic '**#AgChatOZ**—the role of new media in telling agriculture's story', with questions focussed more generally on how social media could be used to support and grow connections between producers and consumers. Both discussions included significant and sustained engagement around how best to deal with different cultural values and individual opinions, both within the core producer-based membership and with those outside the core group, including consumers and activists. The second largest spike in activity from our sample was the 6 August 2013 topic 'Federal Election 2013', and the 3 September 2013 'Election Chat' follow-up was the fifth largest spike. Questions from both discussions focussed on perceived differences between political rhetoric and actual policies or initiatives, asking about specific benefits the industry could expect from different parties. Both times, the question was posed whether or not rural Australia's expectations of government were too great. The third largest spike in activity was the 1 October 2013 topic of animal welfare, although the related 22 October 2013 'Pest Animal Chat' did not garner especially great interest or engagement. The animal welfare chat also stood out for its explicit engagement guidelines:

> **#AgChatOZ** is Australia's leading platform to engage both rural and urban populations about agriculture and food. We are an open forum and invite all matters of opinion. Everyone is entitled to speak and share their view. Let's raise the standard tonight. This is not a platform for abuse or hatred, but a place that everyone is welcome for open dialogue. Through respectful conversation we can truly raise the bar.

[*Figure 1*. Tweets per day. See the Digital Appendix for high-resolution version]

But given our focus on 'hybrid forums', it is also important to note when there are spikes in the diversity of the discussions (more unique users per day = more

diversity). The greatest diversity of membership in our sample can be seen in the 4 February 2014 topic 'Government assistance & relief packages in the Agricultural industry', and notable diversity is also seen in the 21 January 2014 disaster recovery discussion. The second greatest diversity of membership can be seen in the 11 February 2014 topic 'Are we becoming Asia's Food Bowl?'—though this was not one of the liveliest discussions overall. Significant diversity is also seen in the 8 October 2013 topic 'Future Ag industries for Aus & the skills required to meet the demand...' and the 22 October 2013 'Pest Animal Chat'. Notably, although the pest animal chat had lower overall participation than the animal welfare chat, it had a slightly more diverse membership—the politics of human-animal relations energise debate across society. And finally, diversity of membership is also notable in the 14 January 2014 topic 'The Year Ahead'—perhaps reflecting a larger number than usual of participants 'checking in' after the traditional summer break over Christmas and New Year.

[*Figure 2*. Tweets and unique accounts per day. See the Digital Appendix for high-resolution version]

Using Shared URLs to Inventory the Issues

As an initial probing exercise into the inventory of issues associated with **#agchatoz** beyond the nominated topics for each week's 'meetup', we extracted the most shared URLs over the 5 months of data collection. The aggregated result gives an indication of the kinds of topical coverage that most mobilise and engage the **#agchatoz** participants.[4] By proxy, it also provides an initial sense of the most resonant issues and perspectives on them, as well as indications of new or unexpected actors becoming associated with the hashtag.[5]

Among the 25 most-shared URLs are several images, including humorous or political images, mostly organised around pro-framing advocacy, as well as climate change and coal seam gas (CSG) debates. For example, one of the most shared images, captioned (via the originating tweet), 'how to win the climate change debate in one picture' is an infographic showing current and historical average temperatures around Australia; another promotes Australian Bacon Week and another is a Twitter pic of a farm sign reading as follows:

> Notice: This property is a farm. Farms have animals. Animals make: funny sounds, smell bad, and have sex outdoors. Unless you can tolerate: noise, odors, and outdoor sex, don't buy a property next to a farm!

There are also links to informational, political and advocacy resources, including a press release about a New South Wales (NSW) farmers workshop for landholders on mining and coal seam gas, and an article in *Scientific American,* 'Are Fracking Wastewater Wells Poisoning the Ground Beneath Our Feet?', and a more pointed YouTube video shared by @QldCountryLife—a voice-over with stills presented by an Australian farmer addressed at urban greenies with a lack of respect for farmers, inviting them to 'get back to [him]' when they inevitably realise how much they need Australian farmers to survive. Also frequently shared was a press release by Australian National Party senator Barnaby Joyce urging us to 'keep a farmer in mind on World Mental Health Day' on 10 October 2013, as well as links to locavore blogs and campaigns against imported fruit and vegetables.

As we might expect, the issues most often circle around the most explicitly stated primary concerns of the core **#agchatoz** constituency. One of the primary activities represented in the **#agchatoz** conversation is 'agvocacy', which includes both organised lobbying and more ad hoc, vernacular and playful modes of

expression; through to structured, deliberative democratic engagement with high-stakes environmental issues affecting farming and rural communities, such as climate change and coal seam gas exploration; and even at times creating some counterintuitive alliances between the urban left and the rural right—even bringing the **#agchatoz** community into an unlikely alliance with the Greens (cf. the anti-CSG/fracking Shut the Gate campaign).

While much of the tenor of the conversation frames the hashtag as an opportunity to bypass media stereotypes and have a voice in national debate, there is also a fair bit of antagonism towards a supposedly uninformed city-dwelling culture who insufficiently value the role of agribusiness in Australia's society and economy, and there are some dramatic collisions of opposing viewpoints and organised political groups on issues like animal welfare and animal rights. But **#agchatoz** and its counterparts in other countries are also part of the vernacular culture of the Web, illustrated most colourfully by the international phenomenon of 'felfies'—short for 'farm selfie', where farmers pose for self-portraits in situ on the farm, often with a favourite sheepdog, calf, or tractor as co-star.[6]

#agchatoz and Its Social Networks

A first step in understanding how the **#agchatoz** participant pool might relate to existing issue- or interest-based communities was to visualise the users in the dataset as a social network.[7] The map is based on a data snapshot of follower-followee relationships among all accounts in the overall dataset. The snapshot was taken in April 2014, so it doesn't represent the dynamic, fluctuating ways that more or less permanent relations might be established or dissolved by participants in the **#agchatoz** hashtag, but in some ways it could be viewed in cumulative terms, as the **#agchatoz** meetups had been going on for a couple of years by this point (see Figure 3, and the Digital Appendix for a high-resolution version).

[*Figure 3.* Follower-followee network, nodes sized according to number of #agchatoz followers. See the Digital Appendix for a high-resolution version]

There is little contrast between the first two maps, indicating a very high degree of mutual follower-followee relationships, which we might take as indication of a strong core community of regular participants. There are quite distinct (perhaps even unusually distinct) 'communities' identified by the algorithm, which with manual coding have been identified as organised around Australian agricultural and farming organisations (the largest cluster), neighbouring the international agricultural community, with other clusters largely populated by 'foodies' (including urban food producers or retailers, cooks and locavore gourmets), traditional media organisations and MPs (especially rural ABC programming or journalists and rural politicians), and then the 'general' Twitter communities structured around progressive politics and digital culture and conservative Australian politics, respectively. The very co-presence of such apparently different social groupings within a hashtag discussion is

already generative of political hybridity (see Figure 4, and the Digital Appendix for a high-resolution version).

[*Figure 4.* Follower-followee network, nodes sized according to number of #agchatoz followees. See the Digital Appendix for a high-resolution version]

However, the third and fourth maps—in which nodes are sized according to their total Twitter followers overall and their level of tweeting activity on the **#agchatoz** hashtag, respectively—highlight some of the distinctive features of a deliberately constituted 'hybrid forum' such as this (see Figures 5 and 6, and the Digital Appendix for high-resolution versions).

[*Figure 5.* Follower-followee network, nodes sized according to overall number of followers. See the Digital Appendix for a high-resolution version

Figure 6. Follower-followee network, nodes sized according to number of #agchatoz tweets. See the Digital Appendix for a high-resolution version]

This helps us to see that there is a core of highly vocal users on the hashtag—the original organisers, the @agchatoz account itself, and a small number of highly active agricultural stakeholders. And most of these are accounts have been far more active in the **#agchatoz** data than they have been overall over the life of Twitter as a platform, or they are relatively young accounts in comparison to the 'Twitterati' group on the lower right-hand side, or both (see Figure 7, and the Digital Appendix for a high-resolution version).

[*Figure 7.* Follower-followee network, nodes sized according to total all-time tweets. See the Digital Appendix for a high-resolution version]

Using Co-hashtag Analysis to Inventory Issue Publics

Generating lists of the other hashtags that co-occur with **#agchatoz** in the data helps us to begin to understand the relations between **#agchatoz** topics and some of the many other issues, networks and communities that are coordinated via Twitter hashtags. A total of 5,903 additional hashtags appear in the data set.[8] The most commonly used hashtag within **#agchatoz** tweets is **#auspol** (as the primary hashtag for discussion of Australian politics, one of the Australian Twittersphere's favourite topics, it unsurprisingly occurred 3,750 times in the dataset), followed—often in the same tweet—by **#csg** (coal seam gas, 2,461 occurrences) and **#nswpol** (New South Wales politics, 1,382 occurrences). Rounding out the top five additional hashtags are **#freshproduce** (1,382) and **#pmaanznews** (1,377), both related to the Produce Marketing Association Australia–New Zealand. In addition to other state-based politics (**#qldpol**) and sectoral structural issues and events (**#drought**, **#nswfires**, **#harvest13**), individual agricultural industries are also well represented (**#ausdairy**, **#beef**, **#wheat**), as are cross-links to other **#agchat** communities in New Zealand, the U.K. and the U.S. (**#agchatnz**, **#agchatuk,** **#agchat**). The most common issues tied to the **#agchatoz** hashtag are specifically farmer-based, such as drought or youth in agriculture; more broadly and publically contentious, such as mining and live export; or, less commonly, climate change and genetically modified organisms (GMOs). These topics involve the widest range of publics coming into contact with each other around shared issues of concern, but not necessarily shared politics (**#fracking**, **#gas**, and **#frackoff**; **#supportlivex**, **#animalwelfare** and **#banliveexport**; **#woolworths**, **#whycoles**). Further down the long tail, the more mundane, human and affective aspects of rural life—with significant potential to engage the wider community—are

present (**#strongwomen**, **#farmpics**, **#felfie**, **#morningwalk**, **#youngfarmer**, **#passion**).

Conclusions

Following Callon et al. (2009), we argue that the sub-issues and controversies that play out via **#agchatoz** as a hybrid forum have the potential to act as 'apparatuses for exploration and learning' (p. 35). A combined reading of the **#agchatoz** network structures and the co-hashtag analysis provides preliminary indications that the collision of different issues and their publics in the social media environment may lead to the 'discovery of mutual, developing, and malleable identities that are led to take each other into account and thereby transform themselves' (p. 35); and that in part, this potential is provoked by the ways in which hybrid forums trouble the 'two great divisions' of Western societies: the distinction between domain specialists and laypersons, and the distinction between ordinary citizens and their political representatives (Callon et al., 2009, p. 35). Working within this conceptual framework, we have demonstrated how digital methods might be used to go beyond noting the loudest voices and dominant themes in binaristic debates, and instead trace more of the diversity of stakeholder and non-stakeholder perspectives, the substantive issues and topical diversions that come together within the kinds of hashtags that appear to operate as hybrid forums.

The communities and issues most obviously associated with **#agchatoz** are quite predictable in the context of Australian politics on Twitter. But down the 'long tail' the topical coverage becomes more diverse, less predictable, but also highly evocative of adjacent issues and publics where there might be considerable potential—if not yet actualized—for **#agchatoz** to provoke a redefinition of what

counts as 'agricultural' politics in Australia and who counts as a stakeholder in such a

politics. There might also be potential to actually promote a more enriched, dialogical

model of democratic engagement, in the context of a hybrid forum with the

participation of not only farmers and agricultural organisations but also the national

and local media, rural and urban food producers (and their animals!), politically and

environmentally engaged consumers, and politicians at all levels of government.

Future research and practical experimentation might explore the possibilities to

highlight, support and amplify the hybridity of forums like **#agchatoz**, and mobilise it

in the service of more dialogical modes of political engagement.

References

Bruns, A., & Burgess, J. (2012). Researching news discussion on Twitter: New methodologies. *Journalism Studies*, *13*(5–6), 801–814.

Bruns, A., & Moe, H. (2013). Structural layers of communication on Twitter. In K. Weller, A. Bruns, J. Burgess, M. Mahrt, & C. Puschmann (Eds.), *Twitter and society* (pp. 15–28). New York: Peter Lang.

Bruns, A., & Stieglitz, S. (2012). Quantitative approaches to comparing communication patterns on Twitter. *Journal of Technology in Human Services*, *30*(3–4), 160–185.

Bruns, A., & Stieglitz, S. (2014). Metrics for understanding communication on Twitter. In K. Weller, A. Bruns, J. Burgess, M. Mahrt, & C. Puschmann (Eds.), *Twitter and society* (pp. 69-82). New York: Peter Lang.

Burgess, J. (2014, January 16). From 'broadcast yourself' to 'follow your interests': Making over social media. *International Journal of Cultural Studies* [online first]. Retrieved from http://ics.sagepub.com/content/early/2014/01/13/1367877913513684.abstract

Burgess, J., & Bruns, A. (2012). Twitter archives and the challenges of 'Big Social Data' for media and communication research. *M/C Journal*, *15*(5). Retrieved from http://www.journal.media-culture.org.au/index.php/mcjournal/article/viewArticle/561

Callon, M., Lascoumes, P., & Barthe, Y. (2009). *Acting in an uncertain world. An essay on technical democracy* (G. Burchell, Trans.). Cambridge, MA: MIT Press.

Chadwick, A. (2013). *The hybrid media system: Politics and power*. Oxford, UK: Oxford University Press.

Deller, R. (2011). Twittering on: Audience research and participation using Twitter. *Participations, 8*(1). Retrieved from http://www.participations.org/Volume%208/Issue%201/deller.htm

Gunders, P. (2014, January 15). 'Herd' of a felfie? ABC Southern Queensland. Retrieved from http://www.abc.net.au/local/photos/2014/01/15/3926243.htm

Halavais, A. (2013). Structure of Twitter: Social and technical. In K. Weller, A. Bruns, J. Burgess, M. Mahrt, & C. Puschmann (Eds.), *Twitter and society* (pp. 29–42). New York: Peter Lang.

Marres, N. (2012). *Material participation: Technology, the environment and everyday publics*. London: Palgrave.

Michael, M. (2012). What are we busy doing?: Engaging the idiot. *Science, Technology & Human Values*, *36*(5).

Papacharissi, Z. (2010). *A private sphere: Democracy in a digital age.* Cambridge: Polity Press.

Rogers, R. (2013) *Digital methods*. Cambridge, MA: MIT Press.

Ross, C., Terras, M., Warwick, C., & Welsh, A. (2011). Enabled backchannel: conference Twitter use by digital humanists. *Journal of Documentation*, *67*(2), 214–237.

Rzeszotarski, J. M., Spiro, E. S., Matias, J. N., Monroy-Hernández, A., & Morris, M. R. (2014). Is anyone out there? Unpacking Q&A hashtags on Twitter. Paper presented at the ACM CHI Conference on Human Factors in Computing Systems, April 26–May 1, Toronto.

Tsur, O., & Rappoport, A. (2012). What's in a hashtag?: Content based prediction of the spread of ideas in microblogging communities. In *Proceedings of the 5th ACM international conference on Web search and data mining* (pp. 643–652).Seattle: ACM.

Weller, K., Bruns, A., Burgess, J., Puschmann, C., & Mahrt, M. (2014). *Twitter and society*. New York: Peter Lang.

Weller, K., Dröge, E., & Puschmann, C. (2011). Citation analysis in Twitter: Approaches for defining and measuring information flows within tweets during scientific conferences. Paper presented at *Making Sense of Microposts Workshop (# MSM2011). Co-located with Extended Semantic Web Conference, Crete.* Retrieved from http://ceur-ws.org/Vol-718/paper_04.pdf

Yang, L., Sun, T., Zhang, M., & Mei, Q. (2012). We know what@ you# tag: does the dual role affect hashtag adoption? In *Proceedings of the 21st international conference on World Wide Web* (pp. 261–270). New York: ACM.

[1] See http://www.agchatoz.org.au/what-is-agchatoz.

[2] See, for example, http://www.abc.net.au/news/2013-05-30/the-bush-bytes-back/4722248.

[3] The Digital Appendix is at http://mappingonlinepublics.net/?p=2998

[4] The complete list of the most-shared URLs is available as a Google Spreadsheet via the Digital Appendix.

[5] This list is based on the occurrence of shortened URLs only (using the Twitter t.co format), not expanded ones. Therefore we are likely to be over-representing retweets over original mentions. We have expanded these shortened URLs for ease of understanding here; broken and incomplete links were removed to produce a top 50 from 57 containing 7 incomplete links.

[6] See for example, Gunders (2014).

[7] Follower-followee network graphs were produced by querying the Twitter API for the follower and friends lists for each username in the **#agchatoz** dataset as at April 2014, and then constructing a network graph of follower-followee relations among **#agchatoz** participants in Gephi, adding overall status counts, overall followers, and number of tweets in the **#agchatoz** dataset as supplementary node attributes. The network was spatialised using the Force Atlas 2 algorithm. The visualisation was then filtered so that only nodes with a degree of 7 (a combined total of 7 follower or followee connections) remained visible. Gephi's modularity algorithm was used to calculate and then colour 'communities' whose members have higher-than-random affinity, resulting in a total of six visible clusters and a modularity score of 3.9 at the default resolution setting of 1.0. Manual review of the profiles attached to the Twitter accounts that clustered together in these 'communities' was used to identify some common characteristics; lists of participant account IDs were subjected to an additional, independent manual coding exercise to test the applicability of the resulting labels.

[8] The full list of additional hashtags is available as a Google Spreadsheet via the Digital Appendix.