Software and the struggle to signify: theories, tools and techniques for reading Twitter-enabled communication during the 2011 UK Riots

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Declaration

I certify that except where due acknowledgement has been made, the work is that of the author alone; the work has not been submitted previously, in whole or in part, to qualify for any other academic award; the content of the thesis is the result of work which has been carried out since the official commencement date of the approved research program; any editorial work, paid or unpaid, carried out by a third party is acknowledged; and, ethics procedures and guidelines have been followed.

Philip Pond

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SUMMARY

This thesis analyses communication on the micro-blogging service Twitter during the 2011 UK riots. It examines the complex constructive relationship between software and collective meaning-making during a period of acute social crisis and asks whether Twitter’s software-structures facilitated productive, democratic discourse. It seeks to advance the social study of software, to reconcile cultural and digital theory and to develop an innovative methodology for the empirical observation of discursive semiotic practices.

The UK riots began in London in August 2011. The shooting of Mark Duggan by the Metropolitan Police Service (MPS) sparked material and social destruction. Within a few days the riots were finished, but there followed a period of vociferous public debate and extraordinary state recalcitrance. Thousands of rioters were arrested, tried in specially convened courts and incarcerated at an unprecedented rate.

While politicians rushed to impose ‘Victorian’ condemnation on the moral failings of rioters and their families (Bridges 2012), the broadcast and print media delivered commentary that was reductive, politicised and polemical (Kelsey 2012). These concerns, combined with an absence of rigorous, critical oversight, suggest a failing of the public sphere.

Several theorists have argued that Internet media – websites, blogs, social media sites – should be capable of fulfilling the normative-democratic role seemingly vacated by ‘established’ corporate media (Dutton and Dubois 2015). The 2011
riots were one of the first public-political events in the UK to be extensively mediated by Internet technology.

A thorough review of existing literature suggests that analyses of ‘acute events’ have been undermined by insufficient empirical rigour, invalid theoretical assumptions and a lack of comprehension or specificity about digital technological. Consequently, an analysis of Twitter discourse during the riots requires precise technological definitions, a thorough understanding of relevant software (form and function) and a rigorous theoretical framework for interpreting the relationship between software and social-political action.

The framework defines technology in terms of its software-constructed affordances, which shape communicative conditions: fields of exchange, symbolic and representational practices and interfaces for information retrieval and processing. This framing emphasises the temporal and spatial dynamics of these conditions.

There is a growing consensus that the temporality of Internet-enabled communication may undermine democratic expectations, because the rapidity of information flow stresses the deliberative period (Barber 2006, Hassan 2012, Buchstein 2002). The conceptual framework identifies several ‘logics’ by which the software-constructed temporality of communication should interact with the normative requirements of deliberative exchange. These logics frame the development of an empirical methodology. Software is observed via its communicative structures; democracy is evaluated using an interpretation of communicative action (Jacobson and Pan 2008).
The methodology is applied to a sample of several thousand tweets collected during the riot period. Within that sample, several riot-specific hashtags (collectively, the *riot public*) are identified. Tweets containing these hashtags are extracted and submitted to thematic and deliberative content analysis. Temporality is assessed at each of Twitter’s structural communication layers (Bruns and Moe 2014) using proprietary analytics. The interaction between time-space and discourse is then considered comparatively.

Analysis of thematic content, deliberative potential and the constructive influence of Twitter time-space in the riot public produces the following key findings.

1. The most dominant thematic concerns reflect closely discourse in the wider mediasphere. Twitter users strive to explain the riots, seeking and analysing socio-structural causes. They attempt to define the rioters; often this involves locating rioters as outside the social, cultural and moral collective. Some users seek to implicate society more widely in the riot culture, particularly the political and professional classes who are charged with looting during the parliamentary expenses scandal and the financial crisis.

2. There is clear evidence of a relationship between software-structures and discourse. Twitter’s hashtag syntax supports thematically and deliberatively discreet discourse streams. Social complexity arguments tend to concentrate in the #UKRiots hashtag stream, which contains a higher percentage of adjunctive discussion tweets and is judged more productive. ‘Rioter as other’ tweets tend to concentrate in streams where adjunctive discussion is more emotional.
3. Deliberative tweets also concentrate in the #UKRiots stream, suggesting that there may be discreet hashtag cultures on Twitter – communities that are shaped by (or themselves shape) structural identifiers and are committed to a certain type of discourse. While such hashtag cultures suggest coordination, the effect may be illusory. By enabling different discourses to circulate independently, Twitter permits different *langues* that discourage deliberation. Analysis across the structural layers finds little evidence of ideal speech conditions, suggesting that Twitter’s algorithmic engines are doing little to coordinate discourse streams for deliberation.

4. Twitter is clearly deeply embedded in wider media systems. The majority of tweets contain links to external media, and this has implications both for the deliberative potential of tweets but also for the temporality of Twitter. In terms of deliberation, the logic of hyperlinking defers meaning in complex ways: analysis includes the primary destination of any hyperlink in any evaluation of thematic content or deliberative potential, but webs of hyperlinks extend digital texts through the network. Locating and restricting meaning is thus extremely difficult.

5. There is some evidence that the temporality of hashtag streams may reveal something about the dynamics of discourse coordination. As stream density increases, communicative reasoning may become more difficult: the situational efficacy of a hashtag is inversely proportional to the density of discourse flow. However, hyperlinking challenges the temporal unity of the tweet object and the notion of linear Twitter time may be unhelpful. Twitter time is a complex assemblage of relative flows in different structural and textual layers.
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CHAPTER ONE

INTRODUCTION

THE UK RIOTS

Early in the evening on Thursday 4 August 2011, Mark Duggan was a passenger in a minicab driving down Ferry Lane in Tottenham, north London (IPCC 2015). Following the minicab were four unmarked police cars carrying officers from London’s Metropolitan Police Service (MPS). Some of the officers belonged to a unit called Trident, which was meant to investigate gang-related violence in the capital; with them were armed officers from another unit called CO19. One of the cars “overtook the minicab, moved in front of it and braked sharply” (Cutler 2014, 5). The police were performing a “hard stop” – more formally, an enforced vehicle stop. Later, during evidence to an official inquiry and in submissions to the coroner, the police explained that they had “intelligence” that Duggan had tried to acquire an illegal handgun. According to police, he had recently collected the weapon from a contact in Leyton and was returning to the Broadwater Farm Estate in Tottenham.

Duggan and several police officers left their cars and stood on the pavement. An aerial photograph of the scene shows the first police car pulled onto the pavement, blocking it partly. “Around four seconds after the minicab stopped” one of the officers from the third car fired two shots, one of which hit Duggan in
the chest, wounding him fatally (IPCC 2015, 462). The Independent Police Complaints Commission (IPCC) later failed to find:

“material evidence to undermine v53’s [the police officer’s] assertion that he had an honestly held belief: (1) that he saw a firearm in Mr Duggan’s right hand and Mr Duggan’s right arm beginning to move; and (2) that his life or that of his colleagues was in imminent danger.” (ibid 6).

Despite the officers performing first aid, Duggan died within “a few seconds” of being shot. He was 29 years old.

The gun that Duggan was suspected of carrying was located 4.35m from his body according to the IPCC and between “10 and 20 feet away” according to the coroner, and over a fence. Subsequent investigations into the shooting have failed to resolve exactly what happened in the four seconds between the minicab stopping and the police shooting. The IPCC concluded that the “most plausible explanation for the location of the firearm, JMA/1, is that Mr Duggan was in the process of throwing the firearm, JMA/1, to his right as he was shot.” (IPCC 2015, 6). A jury, working with the coroner: “found that Mark Duggan had collected the gun... but did not have it in his hand when shot... having thrown it away as soon as he opened the minicab door and before he exited the minicab.” (Cutler 2014, 15).

Only the officer who had fired the shots gave a statement at the scene. After returning to a police station in Leman Street, the other officers made “brief entries in the evidence and action books after taking legal advice”. Full statements were only gathered on 7 August. The coroner lamented that the
initial statements were “bland”, “uninformative” and “did not include relevant detail” (ibid 20). He noted, also, “that there was considerable scope for conferring before any account was given” (ibid, 21).

Two days after the shooting, at approximately 5pm, a group of people walked from the Broadwater Farm housing estate towards Tottenham police station. Several reports estimated the size of the group differently. According to the BBC, “around 300” gathered outside the police station saying “they want ‘justice’ for Mr Duggan and his family” (BBC 2014). The Guardian newspaper reported that there were “around 200 protesters demanding answers over the death of Mark Duggan” (P Lewis 2011). A government paper long afterwards described the group as being the “family and supporters of Mr Duggan” and estimated their number to be 120 (DCLG 2013, 6). All accounts agree, however, that the protest was peaceful.

At some point during the evening, however, the gathering turned chaotic and violent. The BBC cited unconfirmed reports that “the incident was sparked off by a confrontation between a teenage protester and a police officer” (BBC 2011a). “What happened... is subject to debate, but what is clear is that tensions gradually escalated, as police made only limited attempts to talk to the demonstrators.” (P Lewis 2011). As far as the police were concerned, however: “There was no indication that the protest would deteriorate into the levels of criminal and violent disorder that we saw.” (MPS 2011b).

At around 8.20pm two police cars were set on fire, then more fires were started. “By 11pm, a double-decker bus had been set alight, and shops – mostly local businesses – along the high road broken into.” (P Lewis 2011). Widespread
looting was reported by major news outlets, much of which was perpetrated by “certain elements” not associated with the protest, the police alleged (MPS 2011b). The London Fire Brigade was called to 49 separate fires (BBC 2011a); the police reported that 42 arrests were made and 26 police officers were injured (MPS 2011b).

Calm appeared to have been restored on Sunday morning, but television news stations were broadcasting footage of burned-out buildings and of looting teenagers (Blight et al. 2011). The police announced that a “major investigation team” had been launched to respond to the disorder, while community leaders toured the damaged streets and condemned the “mindless” violence (BBC 2011a). Later in the day, reports emerged that looting was taking place in Enfield, a borough to the north of Tottenham, and in Brixton in south London, missiles were apparently thrown at police (Reuters 2011). Overnight and into the early hours of Monday morning, further incidents of rioting were reported in Islington, Ponders End and Walthamstow. The police confirmed “significant disorder breaking out in a number of our communities across London” and 215 arrests to date (MPS 2011a).

Through Monday evening and into Tuesday, rioting and looting spread to Croydon, Ealing, Woolwich, Hackney and other areas in the capital city. There were also reports of incidents in the West Midlands, Nottingham and Liverpool. In Birmingham, there was a fire in a police station (BBC 2011a). David Cameron, the Prime Minister, returning from a summer holiday, made a statement in front of Downing Street on Tuesday morning, in which he said:
“These are sickening scenes - scenes of people looting, vandalising, thieving, robbing, scenes of people attacking police officers and even attacking fire crews as they’re trying to put out fires. This is criminality pure and simple and it has to be confronted and defeated.” (Cameron 2011b).

He outlined measures to restore order, including “more police on the streets” and “even more robust police action”, aligning his government with “the side of the law abiding”. He also announced plans to speed up court “procedures and processes” and to leverage the “full force of the law” against those “responsible for this wrongdoing and criminality”. (Cameron 2011b).

Disorder continued on Tuesday night, however, in cities across the country: Manchester, Liverpool, Nottingham, Birmingham, Bristol, West Bromwich and Wolverhampton police all reported incidents. In the early hours of Wednesday morning, three men in Birmingham were killed while trying to protect community property from rioters; reports indicated that they were hit by a car that may have been driven at them deliberately (BBC 2011b). On Wednesday morning, David Cameron made another statement, in which he discussed deploying water cannons to British streets – something never previously permitted. Both the MPS and Greater Manchester Police (GMP) started releasing close circuit television (CCTV) stills of suspected rioters, using Facebook and Twitter to disseminate the images. Magistrates courts stayed open overnight to “fast track” the convictions of those already arrested (BBC 2011a).
Most of those convicted were young and male. The majority were charged with burglary and violent disorder offences and newspapers started to report on the exceptionally high percentage of custodial sentences being handed down – “a rate of 50-60%” when the rate for those offences was 3.5-10% in the previous year (Rogers and Evans 2011). The extraordinary sentencing reflected the will of the government, which both the Prime Minister and Theresa May, the Home Secretary, outlined in parliament on Thursday. The Prime Minister, especially, commended the “efficiency” of courts in dispensing “swift justice”:

“no phoney human rights concerns about publishing the photographs will get in the way of bringing these criminals to justice. Anyone charged with violent disorder and other serious offences should expect to be remanded in custody, not let back on the streets; and anyone convicted should expect to go to jail.” (Cameron 2011a).

Rioting, he said, “was not about politics or protest, it was about theft.” Mark Duggan’s death was used “as an excuse by opportunist thugs in gangs” to perpetrate “looting, violence, vandalising and thieving.” (Cameron 2011a). Echoing the Prime Minister, the Home Secretary declared that “we must never forget that the only cause of a crime is a criminal”, and lay further blame on the “violent gang culture” in British cities (May 2011). The parliamentary debate continued into the evening and police reported that they had made more than 1000 arrests and charged over 400 people (BBC 2011a).

Over subsequent weeks, details of some of those charges and the state-sanctioned punishments began to be reported in the press. The length of sentences themselves attracted attention. The Telegraph noted that the “average
length of sentence was 14.2 months, almost four times as long as the 3.7 months given for similar offences the previous year.” (Beckford 2012). Additionally, some of the crimes being sentenced in this way began to make headlines.

The cases of two young men, Perry Sutcliffe-Keenan and Jordan Blackshaw, from Warrington and Marston, two regional towns in northern England, are instructive in this respect. As the riots continued in London and other major cities, Sutcliffe-Keenan and Blackshaw independently did something very similar. Sutcliffe-Keenan created a Facebook page – a feature of the popular social network site (SNS) that allows users to aggregate content and relationships around a particular topic or interest – while Blackshaw created a Facebook event advertisement. According to press reports, Blackshaw’s event called on the “Mob Hill Massive Northwich Lootin” to take part in a “Smash d[0]wn in Northwich Town” on 8 August. He suggested a meeting place but in the event only the police attended. Sutcliffe-Keenan’s page was called “The Warrington Riots” and was created in the early hours of 9 August, after he had been drinking. When he awoke the next morning, he removed the page and apologised for a poor joke (Bowcott 2011).

Both men were arrested and convicted of crimes under two different sections of the UK Serious Crimes Act, 44 and 46, both of which deal with the encouragement and assistance of serious offences (Serious Crimes Act, 2007). The same judge, sitting at Chester Crown Court, proceeded to sentence both men to four years in jail. Claiming both sentences would act as deterrents, the judge made reference to a “collective insanity” gripping the nation, in light of which, the Facebook acts were “evil”, “disgraceful” and “revolted many right thinking
members of society”. The fact that neither Facebook page prompted rioting, or indeed, any social-physical manifestation other than a police response, was testament to the “prompt and efficient actions of police in using modern policing” (Bowcott 2011). The sentences were passed on Tuesday 16 August, less than two weeks after the MPS had shot Mark Duggan.

**Reading the Riots: Causes and Explanations**

This brief history as personification of the “collective insanity” that swept the UK in the summer of 2011 is hardly sufficient to do justice either to the events themselves or to their complex social causes.

Since 2011, there have been several substantive investigations into the causes of the riots. After the Brixton riots in 1981, the UK government had established an independent, judiciary-led inquiry, but the Conservation-Liberal Democrat coalition government opted against this approach in 2011. Instead, a Riots Communities and Victims Panel (RCVP) panel was appointed to investigate causes and make resilience-building recommendations (Singh et al. 2012). That panel’s report, made seven months after the riots, identified several contributory factors, including poor parenting, a lack of personal resilience, too few work opportunities and high unemployment, a problem with “brands” and materialism, low community cohesion and a lack of “trust” between communities and police forces (ibid 6-12). The report found no particular issue with government policy or with institutions of the state, beyond a perception of the
police that, while not “in any way accurate... must be damaging to the police’s relationships with the communities they serve.” (ibid 11).

The report made a series of recommendations aimed at building resilience and personal character, that is “self-discipline, application, the ability to defer gratification and resilience in recovering from setbacks” (ibid 7). Those recommendations included the suggestion that public services “take steps to ensure that all children have a positive role model”, new requirements for schools to develop policies on “building character” and then to assess students on “strength of character”, financial penalties for schools that fail to improve student literacy and increased efforts to get students “work ready”.

Recognising that there may be economic constraints on some communities, the report recommended that the government provide job guarantees for “all young people who have been out of work for two years or more” and encouraged more businesses to adopt corporate social responsibility activities (ibid 9). The authors were particularly concerned about the nebulous effects of “brands” on the wants and desires of young people, and advised educational programs to alert young people to the impact of advertising and branding techniques.

Concerning the police, the report suggested various improvements in terms of community communication and identified that there were perceptual issues concerning the independence of the IPCC.

There is persistent paternalism in the analysis, evident in many of its recommendations, and redolent of “Victorian values and underlying notions of the ‘deserving’ and ‘undeserving’ poor” (Bridges 2012, 8). It places responsibility mostly on the shoulders of the rioters (who it wants “appropriately punished”),
but also on their families and schools. Its recommendations for local council schemes to encourage volunteerism were criticised for coming “at a time when local councils’ own youth services and other social support services have faced devastating cuts under the coalition government’s austerity measures” (ibid 9).

There is little hint of any austerity-related impact in the report: in the section dedicated to youth unemployment, for instance, there is a recommendation that local public services fund a “Youth Job Promise” but no suggestion of where the necessary jobs will come from, nor how they will provide long-term, stable, rewarding and remunerative employment. The issue, it seems, is not one of structural inequality, or a material system in which profit is dependent on the ever-increasing sales of symbols and simulacra, but rather that certain young people lack the fortitude to resist (a lust for) those symbols to which they have no legitimate access.

If the RCVP was the official account of the riots, then the unofficial version was provided by the Guardian newspaper and the London School of Economics (LSE), who combined resources shortly after rioting had finished to produce an extensive “Reading the Riots” document, based on interviews with 270 rioters (P Lewis et al. 2011). Published in December 2011, it placed far more emphasis on socio-structural factors and political explanations for rioting. Its lead finding, for instance, was that “anger and frustration at people’s everyday treatment at the hands of police was a significant factor in the summer riots” (ibid 4). Another significant theme in the testimony of rioters was the impact of increased tuition fees, the closing of youth services and “the scrapping of the education maintenance allowance”. The authors note, however, that for many rioters
looting was opportunistic – “a perceived suspension of normal rules presented them with an opportunity to acquire goods and luxury items they could not ordinarily afford” (ibid 5).

Police behaviour in certain communities is an issue identified by other analysts too. Bridges (2012, 2) is critical of the specific behaviour of the MPS and IPCC following the death of Mark Duggan: “there was a catalogue of errors by both the police and the IPCC, without which any subsequent disorder might never have erupted in Tottenham or across London and the rest of the country.” He argues that, rather than an “orgy of consumerist-led looting”, the riots in Tottenham began specifically as an anti-police protest. This analysis draws attention to on-going police activities in certain communities, especially the so-called stop and search protocol, which allows police to detain and search citizens without warrants, and which is a tactic disproportionately targeted at young men, typically from ethnic minorities (ibid 4).

The fact that Bridges can locate so much responsibility for the riots with the police is significant, not least for what it says about policing in modern Britain, but also because it demonstrates the interpretative nature of the post-riots analysis. It is notable that so much analysis tends to regress to long-established British archetypes – the ideology and politics of class, morality, inequality, law and order.

This thesis is not intended to be a complete sociological analysis of riots. Rather, it is an analysis of how British citizens and the British state made meaning during those events – and how those meanings justified such an extraordinary judicial response. It reflects on the way that the riots and the rioters were
politicised, questions how the extraordinary judicial processes were justified, and explores how the mediasphere (Hartley 1996, Lewis 2008) formed, communicated and reformed meaning following what were, undoubtedly, tumultuous civic events.

Kelsey (2012, 244) has described how politicians and the national press sought first to depoliticise rioters and then to re-politicise them in a way that “mobilised a battlefield of ideological constructions.” On the one hand, right wing newspapers emphasised the “discourse of materialism and greed” as symptomatic of a “sick” underclass (ibid 257), a position that denies rioters political justification while, at the same time, leverages them for political purposes – specifically to denigrate welfare entitlements and unemployment benefits: “the depoliticised actions of rioters were eventually redefined as a politicised problem; a problem responsible for a sick society, to be cured by Conservative policy.” (ibid 257).

That post-riot discourse should proceed in this way was perhaps inevitable. Following the 2008 Global Financial Crisis, a Conservative-Liberal Democrat coalition government had come to power in 2010 after a campaign focused on budget deficits and promises to reign in spending through austerity measures (Emmott 2015). For the newly elected chancellor George Osborne, spending on social welfare was a key target for making cuts and so “benefits” became a central focus for socio-political argument. With austerity politics also prevalent across Europe (Blyth 2013), the riots – and particularly the looting that occurred during the riots – were quickly interpreted according to the terms of this prevailing political discourse.
Given the persistent disparity in these positions and the long-standing polemics of UK socio-political discourse, it is extremely difficult to identify any sort of consensus around what factors may or may not have contributed to rioting in the UK in August 2011. For one group of analysts, rioting is symptomatic of a morally-deficient “feral underclass” (Hastings 2011); for another, rioting is a manifestation of far more complex socio-structural and political grievances (Lewis and Ball 2011).

In general terms, the role of the media in reporting, interpreting and shaping the riots is a subject worthy of investigation in itself, but the focus in this thesis is narrower than a general account of media culpability. The focus in this thesis is on one type of media only – which is to say, one type of technology through which those events were mediated. This is an investigation of digital mediation, a study of the Internet, and the role that Internet technologies played, not in causing the riots, but in shaping the discourse around them.

A full explanation and justification for that aim will follow in the next section, but first it is necessary to establish why the UK riots require analysis of this type. Beyond the apparent social and political importance – and the historical interest – what is it about the riots that particularly demands a study of the media and mediated meaning-making?
CONCEPTUALISING THE RIOTS FOR STUDY

Perhaps the single most compelling reason for this focus is that the riots were clearly a complex phenomenon and yet the government strove to frame the rioters as criminals, “pure and simple”. This account – this public narrative – was fraught with contradictions. The rioters had to be hedonistic, wanton criminals, both driven by material greed and yet, somehow, operating wholly outside the social norms and structures that inculcated them. It was a position that had to be, at the same time, reductive and exceptional – these were ordinary acts (“criminality pure and simple”) but these were extraordinary circumstances. The judiciary, sitting through the night in specially convened court sessions, handed down extraordinary custodial sentences, as if to emphasise that there was nothing pure, simple or reductive about the behaviour (“collective insanity”). It was, in short, an ideological position to externalise the rioters, and to absolve the “societal structures that frame and condition social action” (Fuchs 2012, 388).

There is an important distinction to make here. The ideological struggle surrounding the riots is not the central concern of this thesis: it does not seek to elucidate causes, apportion blame or impose a cultural or critical reading on to the riots or the rioters. Rather, the central concern is the way that digital technology (Twitter) enabled the production and exchange of these ideological struggles – it does not examine Twitter itself as a central player within these language wars. In order to explain this position, and to outline why the UK riots are particularly important in terms of digitally-enabled meaning-making, first it is necessary to outline the key ideological arguments that the riots prompted.
Any discussion of riot-related meaning-making will have to engage with these ideological arguments, because they were so central to the mediated discourse.

According to Fuchs (2012, 386), during and after the riots, technology played a central role in this course: “Focusing on technology (as a cause or a solution for riots) is the ideological search for control, simplicity and predictability in a situation of high complexity, unpredictability and uncertainty”. Certainly, there was a close association between ideology and technology during the riots, though to suggest a mono-directional logic is possibly a misrepresentation: within David Cameron’s statements alone it is possible to distinguish between technologies of control (water cannons, CCTV cameras) and technologies of disorder (social media).

This thesis seeks to address questions about technology and public discourse during the riots. It is concerned with the functioning of Twitter – the potential for that technology to support constructive, productive meaning-making – but it is also concerned with socio-political processes and with democratic legitimacy. This second focus is important, partly because draconian punishments seemed to be levied with something approaching retributive glee, but mainly because the punishments raise vital questions about collective meaning-making during periods of acute social upheaval. It must be recalled that 2011 was a year of global mediated protest. A year that began with the politicians, academics and journalists commending protesters for using social media to challenge authoritarianism in the Arab Spring, ended with the Occupy movement, and included the UK Prime Minister proposing mass media shutdowns and surveillance in his own country.
That proposition, first raised in parliament on 11 August, was founded on a false premise – that rioters were using social media tools to coordinate their looting and to evade police (P Lewis et al. 2011) – but the role of social media in the riots is still worthy of study. As demonstrated already, in large part, the established media (the newspapers and news broadcasters) performed to their traditional ideological roles (Kelsey 2012). These newspaper tropes only provide half the picture, however, because for almost the first time in the UK, the riots represented a national, social upheaval that was extensively mediated via digital communication tools.

The temporality of the riots is particularly significant in this respect. As noted earlier, Mark Duggan was shot on 4 August. On 16 August two young men were sentenced to lengthy jail terms for online riot organisation that conspicuously failed to organise any riots. It took less than a week for the first penal sentences to be handed down, often to young perpetrators and often for offences that would normally not attract any such punishment (Bridges 2012). How could it be that society at large – the citizenry, the media and the political class – was quite so prepared, quite so quickly, to condemn so many young people to jail in such extraordinary circumstances?

**Mediated Mayhem: The Riots as an Acute Event**

Katz (1980) defined a set of circumstances under which, he believed, audiences engaged in an intense, communal consumption of media. He called it the *media event* – an event that sustains the mass attention of the audience, thus replicating
the sort of collected experience that models of media fragmentation and segregation would seem to argue against (Dayan and Katz 1992, Katz 1980). There were crucial elements or conditions necessary to sustain a media event. These were: 1. live transmission; 2. preplanning; 3. framing in time and space; 4. the appearance of a heroic personality or group (i.e. there must be a central personality or group of personalities, around which a narrative can be constructed); 5. drama or ritual significance; 6. "the force of a social norm which makes viewing mandatory" (Katz 1980, 4). For Dayan and Katz (1992) these events were integrative, a co-production of broadcasters and establishments, bringing the audience together in shared meaning-making practices.

The media event was very much a genre-construction of a particular age of broadcasting – one in which technology, production values and social mores combined to generate normative viewing practices. By the early twenty-first century that age had passed and Katz and Liebes (2007) updated the genre-typology to recognise the ever greater role that disruption played in collectivised meaning-making: “media events of the ceremonial kind seem to be receding in importance, maybe even in frequency, while the live broadcasting of disruptive events such as Disaster, Terror and War are taking center stage.” (ibid 158).

The significant difference between the ceremonial (media) event and the emergent disruptive event is the absence of pre-planning – or, at least, collaborative pre-planning between broadcasters and actors. This is not to suggest that media and disruptive actors do not collaborate in the production of disruptive events, but emphasises the ‘real time’ evolution of such events – something that makes problematic questions of control. “Disaster marathons...
are obvious threats to establishments, in which the organizers – the perpetrators – are an invasive force, far out of the reach of establishment control.” (ibid, 164).

Such a framing emphasises the acutely political nature of disruptive events. In an analysis that covers the September 11 terrorist attacks and US military campaigns in both Iraq and Afghanistan, Kellner (2004, 41) argues that “both Islamic Jihadists and two Bush administrations have deployed spectacles of terror to promote their political agendas”. If the live broadcasting of the September 11 attacks can be read as a new type of media event, then Kellner argues that the “media spectacle” served to “to whip up war hysteria, while failing to provide a coherent account of what happened, why it happened, and what would count as responsible responses.” (ibid 44).

According to this account, the hyper-politicisation of media coverage of the War on Terror was very much a collaboration between the media networks and different political actors promoting Manichean discourse. Under such circumstances, Kellner argued that it was better to turn to the Internet for “alternative information”: “It offers a wealth of opinion and debate, and a variety of sites... it also provides users with the potential to become literate and informed on a variety of important topics.” (ibid 59).

Kellner’s claim that the Internet can support discourse in addition (if not necessarily independent) from broadcast media during disruptive events, is surely significant. If Katz and Liebes (2007) could argue that more mobile television cameras were a significant influence in reshaping the archetypal media event, what might be the implications of a hyper-mobile media system, in which the audience is as much a source of content as the broadcaster?
This is a dramatic reconfiguring of the mediasphere (Hartley 1996). The mediasphere is a “smaller sphere” within the semiosphere – it is all the “output of the published media, both fictional and factual, on all platforms” and thus “encloses” the public sphere. “The idea is that the public sphere is not separate from but enclosed within a wider sphere of cultural meaning” (Hartley 2011, 169). Not only does the emergence of digital media add to the number and variety of platforms for publishing, it transforms access to those platforms as well (Coleman and Freelon 2015).

In a further update to the original media event concept, Burgess and Crawford (2011) defined the acute event, emphasising the increasingly participatory audience and the co-production of significant real-world events. These events, they argued, are highly mediated and frequently controversial – which drives “adjunctive conversations”, typified by “sharp peaks” in Internet discourse.

The UK riots clearly fit this genre: they were disruptive, highly politicised and extensively mediated. There was an obvious threat to the establishment, in response to which there was a “media spectacle” that favoured ideological interpretation above “coherent” and “responsible” interpretations. They also fuelled intensive Internet activity, both during the rioting itself and in the intermediate aftermath. What was the effect, though, of this emergent media type? Was the Internet any better than the national broadcast and print media at making citizens “literate and informed”? Ultimately, this is a question about discourse and democracy. Implicit in Kellner’s reading of disruptive media events is that certain types of mediation produce outcomes that are less democratic than others – they are more prone to manipulation, to ideological
regression, to simplification and stereotyping. It has been shown, already, that even lengthy investigations failed to produce political consensus. Newspaper reporting was ideological and political. Is there any evidence that Internet discourse was any more productive?

RESEARCH THEMES

It should be recalled that 2011 was a year in which the liberating and democratising potential of Internet media was supposedly realised on a global scale. There was a great deal written, spoken, imagined and asserted about society as it existed then, and as it could exist given the maturation of Internet technology (Jurgenson 2012, Comninos 2011, Shirky 2011, Tufecki 2011, Howard et al. 2011, Diamond 2010).

The power of the Internet to disrupt and to reconfigure established media discourses remains a popular and potent argument for progressive democrats, and this brief introduction to the UK riots illustrates some of the ways in which this argument is made. As such, it establishes some central themes that will become recurrent concerns in this thesis.

First is the inherently political nature of the riots. These politics play out in a hyper-mediated public sphere (mediasphere), as seems to be typical of these types of acute event and, in this summary reading at least, polarise around traditional conservative and liberal attitudes towards poverty and punishment. Second is that, in addition to enabling this public negotiation of meaning, the media plays a role in shaping that negotiation. That may happen overtly, through the right wing press pushing a particular interpretation of events, for instance.
There may also be a more insidious interaction between politicians and media producers, in which the dynamics of reporting favour one particular agenda over another (Lewis 2005, Kellner 2004).

Third, there is the suggestion that the nature or type (technology) of media involved may play a role in shaping the discourse. This is an idea that will be discussed extensively during the literature review chapters and the conceptual framework. Fourth, and finally, the temporality of the riots is important: the spread of rioting, the frenetic political response and the speed with which the state enacted retribution was extraordinarily quick. The state’s reaction was not an ordinary procedural response; it was extraordinary. Rioters were imprisoned in special court sessions before parliament had reconvened to debate the crisis. In such extraordinary circumstances, how does such a response acquire legitimacy? The temporality of the media becomes very important – can it respond to events quickly enough to support the sort of discussion (debate and negotiation) that might legitimise extraordinary political measures?

This thesis aims to examine the role of digital media in the cultural politics of the UK riots. In very general terms, it will investigate the role that digital media platforms, especially Twitter, played in enabling and shaping political meaning-making during the UK riots – particularly during the period following the initial unrest when the country was formulating some kind of procedural and emotional response.

It is aligned closely with the fields of cultural studies and Internet studies: it seeks to understand what were the political and social implications of media discourse and the role that communication technology played in constructing
that mediation. More specifically, it is an interpretative study of communicative democracy and a specialist analysis of Internet technology – a contribution to the emergent fields of software studies and social computing research, which – as the names suggest – seeks to describe what software is and to explore what software does in the material world (Freelon 2015, Fuller 2008).

As such, this thesis must achieve the following:

• First, it must develop a conceptual framework to define, describe and locate Internet technology.
• Second, it must apply that framework to the study of political discourse during the UK riots. This will require a suitable methodology, but it will also require a clear definition of political discourse.

This summary of thematic concerns makes it very clear that these are communication questions about a communicative process. Furthermore, the outcome – a reasonable, responsible political discussion – is explicitly a communicative interpretation of democracy.

There are many different interpretations of that word, of course, both historical and current (Coleman and Freelon 2015, Held 2006, Williams 1976), and those interpretations involve differences in emphasis that, in turn, affect any theory about how technology might influence democracy. The full implications of that communicative interpretation will require a thorough discussion and analysis. For now, it will suffice to recognise that the democratic norm typically invoked in discussions of the Internet and democracy is a communicative norm: the public debate of opposing political ideals.
CHAPTER SUMMARIES

With that overarching template in place, it is possible to look more closely at the individual objects of study. First, there is a media channel that may (or may not) allow democratic discussion to flourish. Chapter two aims to establish what the Internet is, what the Internet does, and how those two things translate into an object to be studied. This is not a simple task, necessarily, but it is absolutely essential. Confusion on this issue is a considerable limitation for scholarly endeavour (Wellman 2004). The confusion is understandable, to an extent, because the Internet is a multi-layered technology, involving many types of engineering specialty: it is a considerable task to master any sort of overview. There are also complex social dynamics that are central to any coherent understanding of the Internet in the world. Relatively few scholars are equipped to investigate the technological, the social and the phenomenological complexity of the technology, and full inter-disciplinary collaboration remains relatively rare (Freelon 2015).

In large part, then, chapter two is an attempt to define these different aspects of Internet technology, and to narrow these definitions sufficiently to enable productive investigation. The preferred approach is to define the technology first, starting with the network architecture and computing protocols, then the software powering the World Wide Web, and finally the individual applications that interact within that software. A central argument is that the Internet (both the noun itself and the suite of technologies it represents) cannot be theorised and analysed as though it has a mono-directional, mono-causal logic. Specificity lies in identifying and describing relevant applications within the Web, and in
understanding how the features of those applications shape communicative practices and behaviour.

Chapter three reviews existing literature on the subject of ‘digital democracy’ and develops that review into a specific concept for closer study. It asks two questions: how has the relationship between digital technology and democracy been studied historically and how should it be studied in the context of the UK riots? The literature review reveals that different theorists have relied on quite different interpretations of democracy: the result being that different logics are developed to connect cause and effect. This is not necessarily problematic, as long as these differences are recognised, but the literature review also reveals that, too often, this hasn’t happened.

For instance, advocates of action-orientated democracy have tended to focus on the connective structures of digital technology (Bennett and Segerberg 2012), while proponents of representational democracy see the Internet as a petitioning tool or a platform for e-voting (Wright 2015). In other words, democratic preferences have tended to shape technological definitions, and chapter three argues that this is problematic. On occasion, the result has been a reverse-engineered determinism, when a better approach is to “conceptualise the relationship of technology and society as dialectal” (Fuchs 2012, 387).

Chapter four is the conceptual framework. It identifies the relevant (communicational) logics and develops these for empirical analysis of public discourse during the UK riots – it also justifies the need for empirics in this area. That development process specifies the interactive mechanisms by which digital technology could, theoretically, shape democratic discourse.
Explanations of the technology-democracy dialectic have tended to emphasise either *organisational* or *communicational* dynamics. The relative merits of the groups are considered: theoretical and practical issues with the organisational group support the preference for an approach grounded in communication studies.

A specific description of the digital technology is established, as well as a clear definition of the democratic outcomes of interest. In order to establish empirical specificity, the conceptual framework returns to a recurring theme in the communicational logics (and in Internet studies more widely): the uncertain epistemological and ontological framing of digital time-space. To a greater or lesser extent, the different communicational logics invoke the idea that the social and cognitive experience of time-space is complicated by the act of being online. Information liberation arguments emphasise that digital flows are free from physical restraints; information overload arguments suggest that the temporality of these flows overwhelms human brains. Digital dualism perceives that the relationship between digital and physical time-space is probably important but poorly understood.

This focus on time-space is potentially productive. On the one hand, it should be possible both to theorise and to observe the temporality and spatiality of Twitter communication. On the other, there are clearly defined models to help evaluate the effect of time-space on discourse. The remainder of the conceptual framework establishes a theoretical justification for such an approach, and specifies exactly which models are best suited to the evaluative task.
In summary, first the conceptual framework seeks to establish a theory of technology that recognises the importance of defining an emergent technology in a way that limits confusing assumptions and supports contextual empirical analysis. This process must include a definition of what software is and what software does: how it interacts with networked protocols and with human users. Second, it seeks a theory of democracy, specifically one that identifies the type of democratic practice to which the technology supposedly contributes. Third, it describes a theory of interactive logic: an explanation of how technology and democracy shape each other that is both contextually relevant and available empirically.

Chapter five translates the conceptual framework into four research questions. Each research question is intended to interrogate a theme or logical argument from the framework. So, the first research question deals with the complexity of describing meaning-making through discourse on Twitter; the second with evaluating the deliberative potential of that discourse; the third with Twitter's software-enabled communicative structures – and the description of those structures in time-space; and the fourth the distribution of deliberative discourse across those temporal-spatial structures – that is, the assumed intersect between software construction and deliberative outcome.

The four research questions are:

**Question 1:**

What are the features of discourse in the riot public, and how are these features distributed across Twitter’s software-structural layers?
**Question 2:**

Is there evidence of deliberation, or at least of discourse that does not preclude a normative deliberative model?

**Question 3:**

What are the temporal and spatial dynamics of Twitter’s software-structural layers?

**Question 4:**

Can the attempts to record Twitter time and to characterise discourse within the riot public be combined/synthesised to interrogate the central claim in the conceptual framework: that digital technologies shape communication environments that are too fast for deliberative democracy?

The chapter includes an extended methodological discussion, which explains the rationale behind the research design. The discussion explores some of the critical issues involved in developing a methodology for the specific research project (that is, a methodology to interrogate the research questions), but these issues also apply to Twitter research more generally. The focus on Twitter time-space is innovative – theories of network time continue to be developed – and there have been few attempts to subject these theories to empirical analysis. Consequently, it is necessary to spend some time translating the research questions into a coherent methodology, delineating methodological issues and justifying methodological decisions. This methodological discussion precedes a detailed
description of the research design – including data collection, processing, analysis and presentation methods.

**Chapter six** reports on the findings of the empirical research planned in **chapter five**. Observations are organised into sections corresponding to the first three research questions: first, discourse is described in terms of its material and thematic content; second, the deliberative potential of that discourse is assessed; third, the temporal and spatial affordances of Twitter's communicative structures are recorded and displayed via a range of interpretative metrics.

**Chapter seven** discusses those findings, addressing each research question in turn, and asking how the empirical observations inform the research question and the conceptual framing behind it. Once the thematic and deliberative coding have been evaluated, and the distribution of discourse across Twitter's software-structures described, the chapter considers in detail the relationship between time-space and deliberative potential.

**Chapter eight** is the concluding chapter. It returns to the central concern of the thesis: and critically analyses the deliberative potential of Twitter during the UK riots. That analysis involves several steps. It aims to move beyond the normative analysis required by the conceptual framework and to consider Twitter's deliberative role within the wider mediasphere. In other words, it contextualises the specific findings about the riot public, and compares discourse on Twitter to discourse in other spheres of public debate. Did digital communication technologies enable productive (responsible) political discourse during the 2011 UK riots in a way that national print and broadcast media did not?
In addition, it reflects on the conceptual framework and the methodology derived from it, identifies limitations and discusses ways in which these limitations could be addressed. Finally, it addresses the wider question of research into digital democracy and suggests several priorities for future research efforts.
CHAPTER TWO

REVIEW: THE STRUCTURE OF SOFTWARE

INTRODUCTION

The primary focus for this chapter is to define the Internet as an object to be studied. The introduction established the centrality of different media in the intense meaning-making processes that happened during and after the UK riots. Additionally, it identified an important theoretical complaint about so-called traditional media: namely that they are prone to hysteria, polemics and manipulation, and that this undermines their contribution to democratic discourse (Kellner 2004).

Since the Internet emerged as a potentially transformative technology in the nineties (Castells 1996), several theorists have argued that it has the potential to reinvigorate the democratic potency of public discourse (Tufekci and Freelon 2013, Benkler 2006, Rheingold 2000). A full discussion of that democratic potential – how it has been conceived, formulated and studied – follows in the next chapter, which argues that a weakness in much of this work is a lack of specificity about what constitutes Internet technology.

A key aim for this dissertation is to deliver an empirical account of Internet communication during the UK riots that can support a critical analysis, without resort to assumption and generalisation. This requires specificity, and this chapter will argue that critical and conceptual specificity is dependent upon
technological specificity. Ultimately, that involves a narrow focus on a single media type (an application) and a discussion that is limited to the particular properties, affordances and logics of that media (Joinson and Piwek 2013, van Dijck and Poell 2013, Jurgenson 2012, Hutchby 2001). This does not imply that the media operates in isolation. There are institutional, personal, strategic, informal and accidental connections between all media types, and so to describe one media or one connection is to ignore countless others. Bruns et al. (2012, 5) use the term “media ecology” to refer to the “increasingly complex relationships among professional media outlets, online social networks, and mobile media.” It is simply not possible, however, to conduct a taxonomy of all these media and all these connections, so vast is the media system and so complex are the relationships and connections between media types.

THE ROLE OF THE INTERNET IN THE MODERN MEDIASPHERE

The term mediasphere emphasises the dense and interactive flows of meaning and mediation that circulate the globe via countless communication channels (Lewis 2008, Hartley 1996). It mirrors Appadurai’s canonical conception of mediated globalisation whereby the media provides “large and complex repertoires of images, narratives and ‘ethnoscapes’ to viewers throughout the world, in which the world of commodities and the world of ‘news’ and politics are profoundly mixed.” (Appadurai 1991, 299). It is important to recognise the complexity and the evolving dynamics of this space. Clearly, emergent communication technologies have changed the mediasphere considerably and
rapidly. As Castells argues: “the boundaries between mass media communication and all other forms of communication are blurring” (Castells 2009, 64). A principal feature of the modern media ecology is convergence: not only are different media forms (texts, audios, videos, software) deeply interactive, they are increasingly delivered via the same communication channels, so that the Internet, for instance, is a medium through which printed news, radio shows, movies and interactive games all stream.

The mass media industry is global, powerful and increasingly concentrated. As McChesney and Schiller (2003, iii) point out, however, the contemporary media ecology was not produced by technological development alone but by: “a political force – the shift to neoliberal orthodoxy – which relaxed or eliminated barriers to commercial exploitation of media, foreign investment in the communication system and concentrated media ownership.” . Corporate media and mainstream politics continue to be heavily represented (Turner 2010). So while Castells can argue that technology “does not determine society: it is society” (Castells 2005, 3), it is important to recognise the social, political and commercial dynamics that influence the application of that technology.

As Castells notes, developments in media practices often appear to follow developments in technology. As such, an analysis of the modern mediasphere is, in part, an analysis of modern media technology (though it should not be limited to just that). This means that a study of modern media is also partly a study of the shifting dynamics between media and the fluctuating influence (both commercial and social) of different technologies. For instance, print media includes newspapers, magazines, periodicals and books, among other forms, but
the circulations of the once dominant newspapers have been in decline across most national and international markets for several years, with only a few exceptions.

In 2015, Pew Research Centre reported that “newspaper circulation fell again in 2014”, continuing a trend that has been ongoing for at least a decade (although there was a slight upturn in circulation in 2013) (Barthel 2015). In 2008, “for the first time in roughly 15 years of asking the question, fewer than half of all Americans report reading a daily newspaper on a regular basis... Only 34% say they read a newspaper yesterday, down from 40% in 2006.” (PEW 2008, 17). Young people (under 25) are especially unlikely to read a newspaper. Efforts to move print publications online remain nascent and involve notable difficulties as far as protecting content and generating revenue are concerned. While some newspapers, like The Guardian, for instance, have discovered large global readerships, this has proved no guarantee of profitability.

Losses from print advertising continued to be greater than any gains made from digital advertising (ibid). Revenue generating schemes such as ‘pay walls’ and subscription services have proved profitable only in certain circumstances; some news outlets have also experimented with philanthropic models and grant-based funding (Birbrair 2015). These alternative models remain in their infancy, however, and the future remains uncertain: “newspaper executives at the New York Times... have asked whether there will be a print version of their paper in ten years” (Ahlers 2006, 29).

Broadcast media is usually taken to mean both television and radio, and of course within those two are several more sub-categories, including public,
commercial, cable and satellite television. Television has been the “archetypal medium of mass communication” since the 1960s and radio the “medium of mass communication most adaptable to individual schedules and audience locations” (Castells 2009, 59-61, Williams 1975). While the audience for printed news has declined in the US, PEW reports that television news audiences have held steady and, in the case of cable networks, increased in recent years (Matsa 2015, PEW 2008). Television broadcasting has developed from a highly centralised system at its inception, to a “diverse and decentralised broadcasting system based on enhanced transmission capacity” (Castells 2009, 59). According to surveys and census data, television access approaches ubiquity in the West and, across the world multiple television channels are available in most homes. So television remains a highly influential media – arguably the most influential – but Castells identifies two changes that he considers significant. The first is the proliferation of multiple TV channels catering to specific audiences, and the second is the practice of recording and re-watching programs according to individual preferences. As such: “television remains a mass communication medium from the perspective of the sender... it is often a personal communication medium from the point of view of the receiver.” (Castells 2009, 60).

Despite this apparent fragmentation, ownership of television media is increasingly concentrated – a trend that applies equally to radio. Indeed, across all types of media, vertical integration, mergers and takeovers have created a situation in which a few global corporations control vast swathes of media content. According to Steger (2009), in 2006, eight media companies accounted
for approximately two-thirds of all the worldwide revenues generated by the communication industry (somewhere between $250 and $275 billion).

McChesney and Schiller (2003) have documented how, in the United States at least, a few corporations came to dominate communication systems; they describe how monopolistic contracts in the early privatisation of state-built communication infrastructure created a few incredibly wealthy companies. These companies resisted regulation in the name of a free press – where once free was taken to mean free to investigate and to print without interference or hindrance, it has increasingly become aligned with neo-liberalism and a notion of a free market. This freedom resulted in an increasingly homogenised industry, in which the early competitive diversity of the newspaper market became “a concentrated site of massive profit generation” (McChesney and Schiller 2003, 3). In their account, the US model was exported to the world via the neo-liberal politics of Regan and Thatcher:

“The conventional explanation of globalized communication centres on technology: that radical improvements in communication technology make global media flows and global business operations feasible and that, in general, this is all to the good. However, this is a misleading account. Underlying new communication technology has been a political force – the shift to neoliberal orthodoxy, which relaxed or eliminated barriers to commercial exploitation of media, foreign investment in communication systems, and concentrated media ownership.” (ibid, 6).

An intense period of global expansion and market consolidation created an industry dominated by “nine transnational corporations (TNCs): General Electric
(owner of NBC), Liberty Media, Disney, AOL Time Warner, Sony, News Corporation, Viacom, Vivendi Universal and Bertelsmann.” (McChesney and Schiller 2003, 9). These companies, together with some “second tier” media firms now “control much of the world's media: book, magazine and newspaper publishing; music recording; television production; television stations and cable channels; satellite television systems; film production; and motion picture theatres” (ibid, 12). That situation has not changed much in the intervening decade. The 2011 Finkelstein Review of Media and Media Regulation in Australia found that three organisations (Fairfax, News Ltd and APN) owned 92% of newspaper titles in the country (Finkelstein and Ricketson 2012).

This concentration of ownership and the commercialisation of news may explain, in part, why print and broadcast media fail to deliver socially responsible commentary on acute events like the UK riots (Kellner 2004). Some authors perceive a threat of Western cultural imperialism, typified by this relentless “Hollywood juggernaut” (McChesney and Schiller 2003, Ritzer 1983). The inevitability of cultural imperialism may be exaggerated, however, as cultural flows appear a good deal more complex and interactive than this homogenising model would predict. Nevertheless, such extreme concentration of media power challenges perceived wisdom about the essential role that the media plays in relation to democracy and political institutions. The presumption (itself relatively recent) that media content – particularly news coverage – will be impartial and objective is undermined by several examples of media corporations pursuing policies (and producing content) aligned specifically with their own commercial and political interests (Dover 2008).
A media industry, in which a handful of powerful conglomerates dominate, creates a situation in which relatively few people have extraordinary influence over the information flowing into those communication systems. The production of media content is restricted to a few, highly concentrated organisations; moreover, within those organisations, a managerial hierarchy means that decisions over the production of content are further restricted. Such a business model not only creates a class of professional information producers, it also places creative, political and moral authority over media content in the hands of a small cabal of media gatekeepers (Shirky 2008, Kahn and Kellner 2007).

The Internet is said to challenge this business-model. Most media products can be digitised, copied and shared – text, video and audio files for instance – and the sheer availability and accessibility of information challenges the supply-limiting media concentration model. Additionally, the number of media channels has increased dramatically, liberating the technologies of transmission and distribution. This is the foundation of the network understanding of these technologies. Instead of being broadcast en masse from a single producer, information (media) flows between connected individual nodes, “circulating through the channels of connection between nodes.” (Castells 2009, 20).

Whether it's print (blogs), photographs (Flickr), audio (SoundCloud) or video (YouTube), the internet enables individuals to create and distribute media product. Different terms exist to describe the change: internet technologies are called participatory, interactive or social, for instance. In essence, the terms all describe the same feature of the technology: namely, that audience members can produce content almost as easily as they can consume it. As Castells describes it,
internet media are “not media in the traditional sense. Rather they are means of interactive communication” (Castells 2009, 64). This creates a new trend in the global mediasphere – the decline of mass media and the rise of “mass self communication”.

It should be noted that the apparent democratisation of media access and production is not solely a phenomenon associated with digital technology. Graeme Turner has described in detail the mass production of media status, especially through the construction of celebrity – a trend that is just as common in television as it is on YouTube. This demotic turn is a fundamental shift in the function of media, which has “increasingly directly participated in the construction of cultural identity” (Turner 2006, 154).

It should also be noted that, for Turner, this demotic turn is not so much a democratisation of media production – as it is for Hartley (1999), for instance – as it is an “accidental” by-product of cultural practices that are, essentially, exploitative (Turner 2010). Symbolic hierarchies continue to dominate a mediasphere that increasingly produces and consumes celebox celebrities as a type of content production.

“No amount of public participation in game shows, reality TV or DIY celebrity websites will alter the fact that, overall, the media industries still remain in control of the symbolic economy, and that they still attempt to operate this economy in the service of their own interests.” (ibid, 157).

Clearly, the two themes – the supposed flattening of hierarchical media channels into communication networks and the audience’s ability to mass self-
communicate – are closely related. The modern media ecology is one in which all different types of media, and different communication technologies, are deeply embedded in each other, so that information flows in complex, multi-layered and multi-directional systems (Appadurai 1991). As such, the development and widespread dissemination of Internet communication technologies is clearly an incredibly significant trend in terms of shaping late-age modernity, driving globalisation processes and in configuring the contemporary mediasphere. These technologies are, quite demonstrably, changing the way that media is produced and consumed, and changing how information flows between socially connected individuals and within social formations. As such, understanding their influence has great commercial, political and social significance. As described, these technologies make it easier to produce media and harder to control its distribution.

McChesney and Schiller (2003, 15) suggested that “commercially viable media content Internet sites remain few and far between – and, today, it would be difficult to find an investor willing to bankroll any additional attempts.” Within the decade, in 2012, the company Facebook floated on the Nasdaq at $38 a share, pricing the company at $16 billion (Raice et al. 2012); the micro-blogging service Twitter prepared its own initial public offer (IPO) in 2013 and, for a time, was trading at a value approaching $20 billion (Shefrin 2013). So investors have not proved reluctant, though the type of media company in question is somewhat different from what the authors might have anticipated. In some respects, their structure and their function are different from the global corporations dominating traditional media forms; in other respects the similarities are
Between 1999 and 2013 the number of Internet users on the planet grew from under 40 million to 2.7 billion (ITU, 2013). The rapid expansion of portable communication devices, including smartphones, tablets and e-readers, means that the Internet is an increasing mobile technology. Globally, there are 6.8 billion mobile telephone subscriptions (more than two billion mobile broadband subscriptions), and in several regions the number of subscriptions outstrips the population. Some forecasts predict that more people will have mobile broadband access in 2018 than currently have standard mobile subscriptions – all of which means that Internet-delivered media is an increasingly significant force in systems of culture and communication (Lewis, 2008).

Audiences, while always implicated in the interactive creation of meaning, are increasingly available for study, principally because of mass self-communication (Castells 2010). The role that the audience plays in interpreting texts and attaching meaning to social action is visible in a way that it has never been previously. This creates a curious tension for social research, including empirical research. The negotiation and attachment of meaning to social action feels unknowable because of its complexity and yet, because of Internet technologies and big data capture, it is also tantalisingly accessible for study.

Defining the Internet for study

Perhaps because the Internet is so available for study (Internet technology is 

remarkable.
increasingly ‘present’; Internet media penetrates all aspects of the human-social experience; data capture tools are increasingly available to researchers) analyses of effects and outcomes have sometimes proceeded without much prior consideration of what is being studied. The word Internet, itself, is imprecise. It is used to refer to a range of technologies, often in ways that are not strictly correct, at least not from an engineering or computer science perspective (Morozov 2013b, Latour 1990). The word is capitalised throughout this thesis to emphasise this epistemic uncertainty; the Internet can be said to have an objective existence in a few cases, certainly, but not in all the ways the term is used. This is still a proper noun, the name often given to a thing, but in ways that often complicate the thing itself. This lack of specificity can hamper both theoretical and empirical analysis.

It’s a contentious issue for Evgeny Morozov, who has enthusiastically and repetitively denounced the “enduring emptiness” of Internet theory, reserving particular scorn for popular Internet theorists such as Tim O’Reilly and Clay Shirky. O’Reilly (2007) is credited with introducing the semantics of ‘Web 2.0’ into Internet theory, while Shirky (2008) has argued extensively for the collaborative properties of Internet media. In an article for The Baffler magazine, Morozov deconstructed O’Reilly’s role in conceiving and promoting several influential ‘memes’ that carry significant knowledge-currency in the realm of Internet study and entrepreneurship (Morozov 2013a). Effectively, Morozov emphasises a constructionist perspective on the Internet. He argues that terms like Web 2.0 (or cognitive surplus) trade on an assumed objectivity and specificity when really they are laden with assumption and highly reductive.
To avoid both assumption and misapplication it is important, right at the start of this dissertation review chapter, to define key terms and to make clear the provenance of these definitions. Most often in this thesis, Internet is used as collective noun, a heading in a conceptual media taxonomy – to group together a range of technologies that employ networking protocols in order to facilitate distributed connections and communications, as in Internet communication technologies.

This raises a classification issue: what is an appropriate taxonomy for Internet technologies? When is it valid to group individual applications under the same conceptual umbrella, and when is it nonsensical? In another sense, it is a far more fundamental problem: a question of how best to conceive, formulate and explain both what technology is and how technology functions in society. This is because the relationship between a technology and the humans who use that technology can be complex and contested, and a shift in the emphasis of the conceptualisation will alter the logic behind the taxonomy.

The debate surrounding this relationship has a long and contentious history and much of that history is well beyond the scope of this discussion. On the one hand, students of Marshall McLuhan emphasise that “the medium is the message” – an analysis that locates technological form right at the centre of the human experience (Coupland 2010).

For McLuhan:

“the ‘message’ of any medium or technology is the change of scale or pace or pattern that it introduces into human affairs. The railway did not
introduce movement or transportation or wheel or road into human society, but it accelerated and enlarged the scale of previous human functions, creating totally new kinds of cities and new kinds of work and leisure.” (McLuhan 1964, 8).

On the other hand, social constructionists, including Raymond Williams, are careful to emphasise the social practices and cultural forces embodied in technology and its application (Williams 1975). Williams was highly critically of McLuhan’s medium-centric theorising, which he characterised as technological determinism, or the assumption that social action is best explained by the technologies that make that action possible. Determinism exaggerates the role of technology at the expense of the individual subject, and it associates function too closely with effect. For Williams, there are social (and subjective) elements throughout the development and application of new technologies. Social reality is a co-construction: situated in social and cultural norms and structures, partly human endeavour, partly subjective and partly technological.

Can these two positions be resolved to produce a framework for understanding technology (and a definition of the Internet) that is neither deterministic nor relativist? In Manuel Castells’ account of modernity, technology plays a starring role, and yet he is at pains to make it quite clear that this role is not deterministic. Technology is socially constructed: “the Internet provides ample evidence that the users, particularly the first thousands of users, were, to a large extent, the producers of the technology.” (Castells 2005, 4). As Thomas Hughes wrote in his account of the electrification of western society, any “effort to explain the change involves consideration of many fields of human activity,
including the technical, the scientific, the economic, the political, and the organizational. This is because power systems are cultural artefacts.” (Hughes 1983, 2). At the same time, however: “technology is a necessary, albeit not sufficient condition for the emergence of a new form of social organization based on networking, that is on the diffusion of networking in all realms of activity on the basis of digital communication networks.” (Castells 2005, 4). Society makes technology, and technology remakes society, and so the two are bound together: technologies “are both causes and effects of social change” (Hughes 1983, 2).

However, to say that “technology is society”, as Castells does, seems unsatisfactory. It appears, for instance, to make the two factors wholly encompassing of each other: if technology is society, then how is it possible to perceive, or observe, or explain any sort of social action beyond technology and vice versa? Perhaps it is not meant to be: humans and technology have always been entangled in the co-construction of society. At the same time, however, to ‘base’ a new form of social organisation on networking is to suggest that technology is not so much a “sufficient condition” as a sufficient pre-condition of social change. Otherwise, what’s to say that humans didn’t design social network technologies to suit a mode of social organisation – diffuse, distributed, networked – that was already in existence? The risk of circularity is evident.

Castells is able to conceive of the technology before the social change with which he associates it. Whereas knowledge and information have been central in all historically known societies: “What is new is the microelectronics-based, networking technologies that provide new capabilities to an old form of social organization: networks.” (Castells 2005, 5, my emphasis). It makes no difference
whether the new network is an evolution of an old form, or a new form in and of itself, what matters is that it is new, that it didn't exist previously, and that it exists now because of technological change that came first.

In a universal sense, perhaps, technology and society are inseparable, but in the narrower process of seeking explanations for social events, for empirically observed phenomena, theorists frequently resort to technological explanations that aren't quite deterministic. These explanations may simply be the most recent link in a techno-social causal change stretching back millennia, but in the short term – in the immediacy of interest – it makes some sense to place technology before society, or society before technology, as the situation dictates – provided, of course, that there is an empirically plausible, theoretically reasonable explanation for a causal relationship.

The question becomes: how best to do this? How should the relationship between a technology and its human users be formulated to allow for construction and determination on both sides?

One possible solution – certainly one that has gained favour in the anthropological and ethnographic fields – is to adopt and to adapt the concept of affordances originally proposed by James Gibson, a cognitive psychologist. For Gibson, writing about the relationship between animals and the environment, an affordance was something offered or suggested by the environment to the animal: it “implies the complementarity of the animal and the environment” (Gibson 1979, 56). Gibson’s argument was that behaviours or actions become possible only through interaction between man and object (objects being the “furniture of the earth”). When observing an object, man sees not some innate,
intrinsic or absolute qualities but instead affordances – what seems promising in terms of object-human interaction. For technology theorists trying to avoid determinism, this is a useful distinction.

The object (software) affords certain actions: it shapes but does not determine them. As Joinson and Piwek (2013, 8) suggest, the utility of affordances is that “they imply a direct, in some cases designed, link between the properties of an object, material or tool, and the uses to which it is put.” For Hutchby (2001, 444), affordances are: “functional and relational aspects which frame, while not determining, the possibilities for agentic action in relation to an object.” The question then, of course, is what functional and relational aspects? Where are they located, how can they be identified, and by what mechanisms, exactly, does that framing of agentic action take place?

According to boyd (2011, 39): “affordances... shape how people engage with these environments. The properties of bits — as distinct from atoms — introduce new possibilities for interaction.” In other words, Hutchby’s “functional and relational aspects” are properties of bits themselves, of the primary information units in computing. This seems too sweeping a generalisation – it doesn’t discriminate sufficiently between the vastly different software technologies that run on the Internet using bitwise computer processing. Rather than reducing all Internet technologies to elemental properties, it is surely more productive to conceptualise the Internet as a layered technology, with each layer having different properties that interact to present a system of affordances to the end user, users or social institutions. From beneath this user-facing surface may emerge traces of deeper affordances (networking
potential, processing speed and so on, the properties of 'bits'). It thus becomes possible to conceive both local and pervasive affordances operating simultaneously, the first being particular to specific applications or interfaces, the latter lurking in the deeper layers of the Internet architecture, shaping these local interactions.

Best (2009) seeks to develop the concept of affordances critically, starting with the premise that a central feature of digital technology is the issue of control. Reframing the notion of enabling affordances, Best argues that “the more competent a technology's functional and perceived affordances, the greater the experience of user control” (ibid 1015). A technology can grant its users an experience of control – the ability to manipulate it for particular purposes. More specifically:

“When a technology accomplishes its professed aim and does what it is supposed to do – when it fulfils its functional affordances – a user will most likely feel in control of the task. When a technology is easy to use and understand – when its perceived affordances are sufficient – a user will most likely feel in control of the technology.” (ibid 1020).

On the other hand, users can also be confronted with the sense of being controlled by technological architecture ix, an experience which must be negotiated by “modifying use, modifying the technology, decreasing use and acceptance” (Best and Tozer 2012, 401). Rather than enabling human potential, digital technology (code) is an obstacle, with “power to layer commands constricting use” (ibid, 402). The concept of affordance must be flexible,
therefore, to account for this power struggle between deterministic code and adaptive, sometime recalcitrant users.

The challenge, then, in defining the Internet for study, is to provide both a full account of the objective technological properties, and a conceptual framework that can integrate those properties into a constructivist account of social action. Software studies is an emergent field that seeks to explore how “digital objects, languages, and logical structures... makes possible much of the contemporary world.” (Fuller 2008, 1). It is a critical enquiry into the affordances of software for social action and, as such, is a guiding rubric for this thesis. Instead of being something ephemeral and elemental, digital technology is bundled software – an object in the world, itself constructed from digital objects, bits, languages and logical operators. Twitter is bundled software running on the Internet (constructed from pipes and protocols). Users interact with that software through web browsers, smartphone applications, desktop clients and various other user interfaces. Through this interaction Twitter affords certain behaviours, one of which is communicative interaction with other Twitter users. The purpose of this thesis is to explore this interaction between software and discourse, to unpack the shaping logics and to ask whether Twitter affords the sort of communication compatible with existing democratic practices.

Distinct software applications may be layered similarly and may present affordances that are similar, and this is what van Dijck and Poell (2013) identify as logics. Social media – Facebook, Twitter, Instagram and so on – may be discussed as a group usefully because each is an assemblage of similar logics, which is to say that they share affordances. Equally, deeper affordances –
networking potential, processing speeds and so on – may penetrate across a wider range of software applications – ultimately, all software applications that run on the Internet are shaped, at least in part, by the technological architecture of networked computing. In order to fully comprehend Internet software, then, it is first necessary to comprehend the computing and communications technology that permits the software to run.

**NETWORKED COMMUNICATION PROTOCOL**

Alan Turing defined a computer as a programmable digital machine, one capable of carrying out operations or calculations on a data store according to instructions reducible to binary numerals (Turing 1950). The full implications of that definition are too broad for exploration here, but suffice to say the computing technology enables all types of complex processing and communicative capabilities. In the simplest possible sense, the Internet is a series of connections between computers made possible by packet switching technology (Leiner et al. 2009). The problem is that this rather simple mechanical definition is easily expressed in far more expansive terms. For instance: “The Internet is at once a world-wide broadcasting capability, a mechanism for information dissemination, and a medium for collaboration and interaction between individuals and their computers without regard for geographic location.” (Leiner et al. 2009, 22). There is nothing hugely controversial in that second definition except that it begins to include features that are enabled by the Internet, rather than limiting itself to features that are
strictly technological. This subtle difference is too often the cause of imprecise and inaccurate claims about the scope and the science of the Internet.

Packet switching technology was originally a project of the US government, through its Advanced Research Projects Agency (ARPA) (later called Defense Advanced Research Projects Agency (DARPA)) and Massachusetts Institute of Technology (MIT) scientists (Abbate 2000). Packet switching, put simply, is the ability to transmit information between digital computing machines in data streams consisting of blocks or packets. The ability to connect computers this way was conceived and described by different scientists in several papers during the early 1960s (Leiner et al. 2009, Kleinrock 1964). A series of collaborations between researchers, their laboratories and the US government led to the engineering, in 1968, of ARPANET – the first functioning packet-switching network of computer-computer connections. The US government’s interest in this nascent technology was primarily born of defence and security concerns: ARPANET promised a distributed and interconnected data store, which would be resilient to any one of its individual connections failing – a potential valuable attribute in the face of a nuclear strike or some other Cold War catastrophe (Castells 1996).

ARPANET grew in size and complexity over the next few years as engineers added networking protocols and began to develop applications to run on the new technology. An application is defined here as a collection of technologies – front and back end software, databases – that operate synchronously to enable a particular function or service. Email is an example and was first demonstrated in 1972: “a harbinger of the kind of activity we see on the World Wide Web today,
namely, the enormous growth of all kinds of “people-to-people” traffic.” (Leiner et al. 2009, 24). The transformation of ARPANET into the Internet relied upon changes to the original communication protocols, which are essentially digital rules – or programs – governing how data should be exchanged in networked systems. The original ARPANET protocols were, for various reasons, too inflexible to allow open-architecture networking, of the type envisioned by the Internet's pioneers. An engineering solution to this inflexibility was developed and first described in 1973 (Leiner et al. 2009). The Transmission Control Protocol/Internet Protocol (TCP/IP) remains the principal communication protocol governing Internet communication and is particularly notable for the way that it allows so many different applications to run on the same underlying network architecture.

This, of course, is the key distinction. So many features of what is commonly called the Internet are, more accurately, applications that run on the Internet and its TCP/IP architecture. As ARPANET evolved into the Internet, via many different, smaller scale networks (CSNET, USENET), the communication applications that the network supported became increasingly integral to the concept of the Internet itself, so that in 1985, the Federal Networking Council (FNC) – a US federal body set up to manage the sharing and coordination of infrastructure costs and development – issued the following definition:

*The Federal Networking Council (FNC) agrees that the following language reflects our definition of the term “Internet”. “Internet” refers to the global information system that -- (i) is logically linked together by a globally unique address space based on the Internet Protocol (IP) or its subsequent
extensions/follow-ons; (ii) is able to support communications using the Transmission Control Protocol/Internet Protocol (TCP/IP) suite or its subsequent extensions/follow-ons, and/or other IP-compatible protocols; and (iii) provides, uses or makes accessible, either publicly or privately, high level services layered on the communications and related infrastructure described herein. (Leiner et al. 2009, 30).

The uncertainty between where the Internet ends and Internet applications begin is problematic in the social sciences. The situation is well illustrated by a related term: network. Strictly speaking, in the language of computing and digital communications, a network is a distributed system of digital computers that connect and coordinate according to a set of pre-defined communication protocols (Leiner et al. 2009, Castells 1996). There is a strict determinism inherent in the term: it implies that the things connected (the computers) and the connections between them have certain properties determined by the rules of digital computing and the protocols. The phrase social network, however, though assumed to exist because of the digital network, cannot include any such determinism. So how is the social network like the digital network at all? A social network is a loose collection of relationships identified between different humans beings – the network part of the phrase has very little to do with networking as it is commonly understood in the Internet context (Marin and Wellman 2010, Scott 1988).

Castells theorised that globalisation (social) forces:
“could only be effectuated because they have at their disposal the global networking capacity provided by digital communication technologies and information systems... This is, in fact, what separates, in size, speed, and complexity, the current process of globalization from previous forms of globalization in earlier historical periods.” (Castells 2009, 24-25).

It is little exaggeration to say that the network is the dominant concept in contemporary research in digital media and communication. It has gained prominence through the work of authors like Yochai Benkler (2006), and is supported by a variety of quantitative network science techniques, which take advantage of modern processing power to analyse and summarise relatively accessible social media big data (Hansen et al. 2011). Castells has documented in detail how networked computing power is transforming finance, industry, politics, the media and several other critical components of human social experience. According to this interpretation, contemporary globalisation becomes a function of network reconfiguration and of microelectronic technological development — especially communication technologies. “Digital networks are global, as they have the capacity to reconfigure themselves, as directed by their programmers, transcending territorial and institutional boundaries through telecommunicated computer networks.” (Castells 2009, 24).

The many arguments that emphasise the networking logic of digital media are, on the whole, effectively comparative statements: digital communication technologies are networked structures whereas broadcast and print technologies are not. According to Castells (2009, 64), internet media are “not media in the traditional sense. Rather they are means of interactive
communication”. This type of interactive mass self-communication challenges a media industry in which a handful of powerful conglomerates dominate, and in which relatively few people have extraordinary influence. Moreover, it is argued, within these organisations, a managerial hierarchy means that decisions over the production of content are further restricted. Such a business model not only creates a class of professional information producers, it also places creative, political and moral authority over media content in the hands of a small cabal of media gatekeepers (Kahn and Kellner 2007).

Mass self-communication via networks is meant to disempower these privileged roles and the institutional structures within which they reside. The modern media ecology is one in which all different types of media, and different communication technologies, are deeply embedded in each other, so that information flows in complex, multi-layered and multi-directional systems.

The network-affordance approach sees Internet communication technologies as agents of socio-structural reconfiguration. In turn, these ‘networked’ groupings enable new patterns of information transmission, new forms of social organisation and the potential for redistributing power between social actors. This approach is a recurrent theme in a great deal of analysis. The use of the term network in sociology “conjures up strange but surprisingly powerful images of social reality” (Scott 1988, 109).

"The word network indicates that resources are concentrated in a few places – the knots and the nodes – which are connected with one another – the links and the meshes: these connections transform the scattered resources into a net that may seem to extend everywhere." (Latour 1987,
Network theory appeared in classical sociology long before it was adopted by Internet theorists or, more widely, proponents of mathematical social network analysis.

“Sociology, from its earliest days, has been concerned with the ways in which the social relations between people constitute a distinct reality *sui generis*. This realm of social structure was seen as produced through the intersection of chains of action and their unintended consequences. While classical sociologists may have disagreed among themselves on the question of whether such structures were reducible, in principle, to the constituent social actions of the people who produced them, there was a general agreement that social structures had distinct and important properties which provided the basic subject matter of the discipline of sociology. It was, perhaps, in classical German sociology that this viewpoint was most explicitly allied with the metaphor of a ‘network’ of social relations, the social world being depicted as an intertwined mesh of connections through which individuals were bound together.” (Scott 1988, 109-110).

There are two points to emphasise. First, a network approach to sociology is inherently a structural approach, which inevitably reduces the role that meaning-making plays in connecting social reality and social action. It assumes that the network is an overriding influence on human behaviour; as such, it tends to ignore individual subjectivity. Second, the network begins as a metaphor in sociology – social relations are described as network-like. This is a very different
position from an “American and British concern... for the structural properties of networks of social relations” (Scott 1988, 111). At some point in the evolution of network theory, the metaphorical element was forgotten and the social relations themselves assumed the structural properties of being networks.

Erickson (2012, 912) cautioned that one risk behind adopting the network metaphor as the default analytical tool (a prism through which to view all Internet communication technologies) is that “the use and articulation of metaphors, particularly spatial metaphors, can have remarkable effects upon our perceptions.” What he was referring to is the difficulty in abstracting social complexity in an attempt to better understand it, and then re-applying that abstraction as though it were an objective actualisation of the social. This becomes a particularly acute issue if the abstraction – in this case, the network – reduces complexity in order to make a situation intelligible. For instance, social network science (SNS) approaches to studying internet communication technologies often map network graphs, in which the connections between users are identified and plotted. These graphs are then used to identify the influence of particular users, for instance, or to compute the strength or the inwardness of the network.

Apart from the self-fulfilling circularity of these approaches (the network is defined by the means used to define it), there is a worrying necessity to assume that all connections function effectively the same. Even the more sophisticated network analyses only take into account a handful of parameters when considering different types of connection (one directional or reciprocal, for instance). Furthermore, all nodes are assumed to function according to their
position in the wider network (Marin and Wellman 2010). As such, network sociology is more concerned with the relationships between individual subjects than the subjects themselves. The complex liminal and subliminal processes that generate individual consciousness are subjugated to the network-governed positioning (and information processing capacity) of individual nodes.

Network analysis comes with a range of associated terminology (nodes, links) and derived theories that are better at describing the behaviour of computers than they are human beings. When the approach is welded on to human activity, the danger is that the abstraction is both too generic and too removed from the experience. In other words, we force our description of human behaviour to seem like the behaviour of computers precisely because we are analysing human behaviour as though it were governed by networked communication architecture. It is the difference between saying that humans send messages to each other about protests in Iran using networked communication technology, and saying that humans protesting in Iran are part of networks defined by that communication technology. This risks demoting or, worse, ignoring all other sorts of social relationships. As Erickson observes presciently: “networks, if they exist, must at least be a part of society, and if not, if they are all of society, then we are just swapping one unknown thing for another.” (Erickson 2012, 912).

Even disregarding this uncertainty, how useful is the network for unpicking these systems and for understanding how they work? It is one thing to describe these systems in the new mediasphere and to say that they are network-based, but how much explanatory power is there in such a statement? In essence, a network is nothing more complex than the connections between things; calling
something a network doesn’t explain the nature or the effect of those connections. The sociologist Wilhelm Baldamus felt that the use of the network metaphor in the social sciences was remarkable because it had “hardly any explanatory power to start with” (Baldamus 1982/2010, 107).

The power of the network metaphor comes from its description of the “invisible bonds” that connect individuals in “criss-cross mesh of connections” (Scott 1988, 109). In other words, within society individuals are connected to each other in variable, complex and tangled relationships. This is hardly a revelation; rather it is shorthand for a state that defies logical and intelligible disentanglement. As Erickson (2012, 913) writes: “network sociology is conceptually vacuous as it is merely applying a different range of labels to objects identified in the world, and will often apply a number of different labels to the same phenomena.”

The properties of the network metaphor that are relevant, then, are not properties that do much to explain, simplify or otherwise explicate the functioning of social reality. This is particularly a problem for social network analysis when it is applied to Internet-enabled social construction. Rather than explore the complex entanglement of affordances suggested by the original metaphor, these approaches tend to emphasise the properties of the computer networks and to apply these to the social structures under consideration. This is convenient and tempting, perhaps, especially given the preponderance of self-labelled social networks in social media. However, these two types of network are not the same: they are subtly but significantly different. The original network metaphor emphasises the complex entanglement of social relations (which can assume an infinite variety of forms, defying easy categorisation), whereas the
appropriation of *computer networks* implies a logical and mathematically resolvable system that adheres to the distributed, packet-switching logic of computing systems. In short, the interpretation of affordances in social network analysis is confused and prone to technological determinism.

The preference in this thesis is to avoid social network analysis as a tool for exploring human communicative behaviour and social structures, and only to use the term network to refer to applications whose function, to some extent, is determined by the network architecture of the Internet. So, for instance, Facebook is a network tool because it runs on a network technology, not because it creates social networks between its many users.

On the whole, the software applications of interest in this thesis – i.e. those that people were using to discuss the UK riots – are children of the World Wide Web, itself an application that runs on the Internet: “The Internet is like a network of electronic roads criss-crossing the planet – the much-hyped information superhighway. The Web is just one of many services using that network” (Cailliau and Gillies 2000, 1).

The Web is actually a suite of integrated technologies, famously invented by Tim Berners-Lee, a software engineer at CERN, in 1989 (Berners-Lee and Fischetti 2000, Connolly 2000). The first is Hypertext Markup Language (HTML), in which web pages are written, and which is read and interpreted by browser applications in order to display content. The Uniform Resource Identifier (URI) is an address system necessary for locating individual resources stored somewhere in the Web-running domain of the Internet. Finally, the Hypertext Transfer Protocol (HTTP) is employed to request and retrieve Web-specific resources. It
is simply another communication protocol, just specific to the Web, but it is highly influential in that it permits the linking of resources and the creation of the ‘web’ effect that is so crucial to our understanding of digital information flows and connectedness (Berners-Lee et al. 1994/2003).

The development of HTML, URI and HTTP made possible, for the first time, the Internet applications that served content in a way that was accessible to general computer users (Abbate 2000). Crucial to this development was CERN’s decision to make these technologies public and royalty-free in 1993. In the early nineties, web documents were very different from their modern equivalents: Berners-Lee’s invention permitted the identification and retrieval of information via the Internet, but it did little to make that information as engaging, appealing or as influential as it is now. That transition was vital for transforming the Web from a communication and information tool into the social and culture ecosystem it is today (Hindeman 2010, Cailliau and Gillies 2000).

Facebook and Twitter are Web technologies that run on the Internetxi. They are alike and they are different because although they make use of the same underlying network, they are designed, engineered and used differently: they enable different services and different communicative experiences. Sticking with precise technical definitions permits a clear distinction between these technologies, based on programing choices (code), data storage and User Interface design. The benefit of a software studies approach is that it seeks to combine a deep understanding of software with the social analysis of practices through which software is realised. The following extended quote from Bernhard
Rieder is particularly instructive in terms of defining software technology in terms of its social significance:

“ultimately, if our business is not with the matter of how mechanical computation is possible in the first place, but with software as an object in-the-world... The elegant concept of computation then quickly begins to bloat up with many different things: real computers, not just abstract Turing machines; real software, lodged in tight networks of other software, all written for a purpose; knowledge, ideas, skills, tools, methodology, habits, and values that permeate practices embedded in layers of social organization, cultural configurations, economic rationales, and political struggles.” (Rieder 2012).

The challenge for empirical researchers is to be cognisant of the factors that make computation “bloat up” in this way. More often than not, this means a formative micro approach to software studies, rather than sweeping or comparative macro approaches. It is a reminder to be somewhat suspicious of any approach that claims to explain the role of social media – or any suite of technologies – in complex social processes. Software may bloat, but as Rieder implies, it can do so in many different ways.

**DEFINING SOFTWARE FOR STUDY**

When politicians, commentators and academics discussed the role of the Internet in the riots, both during and after, they tended to be discussing social
media software (Hansard 2011, P Lewis et al. 2011). Facebook and Twitter are both examples of social media; so are media-sharing applications like YouTube and Instagram, direct messaging services like WhatsApp and blogging tools like Tumblr and Medium. Some of the tools have a lot in common while others seem quite different. José van Dijck and Thomas Poell (2013) have developed the notion of social media logic to frame and discuss these similarities. They contrast their social media logic with an established framework developed for mass media communication, and seek to identify grounding principles common to these networked applications. They decide upon four: programmability, popularity, connectivity, and datafication. “The logic of social media, rooted in these grounding principles and strategies, is gradually invading all areas of public life.” (ibid 2).

Social media logic continues to assume an over-arching homogeneity framing different Web technologies, and this remains somewhat problematic. The advantage of social media logic is that the grounding principles are sufficiently specific to permit an analysis of whether these different technologies enable the sort of effects that the authors claim. As they write:

“The quick rise of social media platforms in the first decade of this century was part of a more general networked culture where information and communication got increasingly defined by the affordances of web technologies such as browsers and search engines... Inferring from these conditions, we contend that social media logic refers to the processes, principles, and practices through which these platforms process
information, news, and communication, and more generally, how they channel social traffic.” (ibid 5)

So, for instance, through the application of opaque algorithms to choreograph user interaction with their communicative capabilities, social media technologies shape the relational activities of their users, even though “content is not just programmed by a central agency, even if this agency still has considerable control; users also participate in steering content.” (ibid 6). Similarly, popularity “is conditioned by both algorithmic and socio-economic components” (ibid 7) depending upon the particular characteristics and user groups of individual technologies. The authors describe individual mechanisms for conditioning and promoting popularity for Twitter, Facebook and Google, moving the discussion from a broad social media logic towards more technology-specific investigation.

This sort of approach, in which specific principles are used to construct an overarching logic, still recognises a network influence, but as an individual force or dynamic within the techno-social construct, rather than as a determining superstructure. The focus then moves to the ability of individual software applications to connect users in ways that might previously not have been possible, rather than on abstract super logics that supposedly transcend the intricacies and affordances of individual technologies.

In developing a definition of software for social research, it is important to note the difference between software and the data that the software produces – which is then captured and studied. van Dijck and Poell call datafication: “the ability of networked platforms to render into data many aspects of the world that have never been quantified before” (ibid 9). This is a key concept in Internet studies,
and explains both the interest for many social scientists in Internet technologies but also many of the approaches taken to studying these media. While the principle of datafication may be useful in terms of constructing a social media logic, it should be distinguished from big data.

Big data has a narrow technological definition from computer science – datasets large enough to require super-computer processing (Manovich 2011) – and a much broader, fuzzier definition from the social sciences and Internet-affiliated commentary. Big data is the notion that datafication enables new approaches to analysis and new forms of empirics based, essentially, on a principle of “total knowledge” (Bowker 2014). It “seems to combine the grand scale and generalizability of methods like national surveys with the granularity and detail of close textual analysis, ethnography, or participant observation.” (Driscoll and Walker 2014, 1746).

The concept is deceptively simple: users supply applications like Facebook and Google with all sorts of information about themselves, and this interaction creates yet more information about communication patterns and preferences. All of this information is recorded inherently by the applications, processed algorithmically and typically used to modify or improve the function of those applications – as well as to monetise users for advertisers. The added ability to store this information long-term in massive databases and to automate many forms of investigation has led to some dramatic claims about the changing nature of knowledge and enquiry. One commentator declared the “end of theory” as big data rendered statistical necessities like sampling and extrapolation obsolete (Anderson 2008). Bowker (2014, 1795) explains that “we are moving
from the knowledge/power nexus portrayed by Foucault to a data/action nexus that does not need to move through theory: All it needs is data together with preferred outcomes.”

Big data, though, is another term that can obscure more than it reveals, including meanings and assumptions that are both value-loaded and debatable. boyd and Crawford (2011, 4) complain that such thinking betrays an “arrogant undercurrent in many Big Data debates where all other forms of analysis can be sidelined by production lines of numbers, privileged as having a direct line to raw knowledge.” Such thinking denies subjectivity, makes unsupportable claims to objectivity, and siphons off knowledge creation to an array of unknown algorithms that may be complex but cannot be value-neutral. Furthermore, it engenders a type of technological solutionsim – the ideology that any problem, social or personal, can be solved by collecting sufficient data and promoting algorithmically-derived efficiencies:

“Recasting all complex social situations either as neatly defined problems with definite, computable solutions or as transparent and self-evident processes that can be easily optimized—if only the right algorithms are in place!—this quest is likely to have unexpected consequences that could eventually cause more damage than the problems they seek to address.”

(Morozov 2013b, 5)

It has been a huge boon to the social sciences to discover that so much data is both rich in detail and relatively accessible. Indeed, it might be suggested that, in recent years, many big data studies were conducted precisely because they could be done, and not necessarily because they should be done, either from an
ethical or a critical perspective. There is also a risk that data accessibility directs research towards certain technologies above others, and that this happens irrespective of critical interest in the technology.

In this thesis, for example, there are good reasons for concentrating analysis on Twitter, because it enables a fluid and open form of communicative exchange that is particularly of interest, but it must also be acknowledged that it remains comparatively easy to ask for and to retrieve data from Twitter’s application programming interface (API). A search for “Twitter” on Google Scholar returns nearly five million results, and yet the actual number of Twitter users represents a tiny fraction of the global population, and is concentrated mainly in the US and Europe. The nature of that data too – and it is not an objective form; data is defined by programming choices and released discriminatedly – must also be considered carefully. As Driscoll and Walker (2014, 1747) explain: “The ontology of native Twitter objects is subject to change without warning, and different data sources provide tweets in entirely different formats.”

Nevertheless, many researchers are taking advantage of datafication to produce analysis that is informed, nuanced and insightful. A full summary of that research is not possible; the scope and volume of research is simply too great. Certain applications are better represented than others, either because they are popular with users or because they are accessible and subject well to analysis. A search of the literature reveals that two software applications in particular have dominated research efforts.

Facebook has well over a billion users, according to the company’s own information, and approximately a billion of them use the application – either
through its desktop website or smartphone client – every day (Statista 2015a). Twitter has 284 million users active each month – again, according to the company itself – three-quarters of whom are based outside the US (Twitter 2015a). In terms of the global population, perhaps, these numbers are not so impressive, but these two companiesxvi (Facebook, especially) dominate the social media landscapexv and, it must be said, the attention of the academic community. The overwhelming majority of big data research papers – quantitative efforts to explore an emergent, *global* communication technology – focus on two companies who are based a short drive from each other in San Francisco.

On the whole, papers that concentrate solely on Facebook are not reviewed here unless they offer propositions or insights that are relevant and common *across* the social media categorisation. The focus in this thesis is on Twitter and its role in socio-political meaning-making. For reasons that will become clear, Twitter is regarded as an archetype: a software bundle that, in many ways, reflects the utopian logics of Internet connectivity (Lewis 1998).

The Twitter code base is partly available for public inspection and partly proprietary (Vaughan-Nichols 2012)xvi. It is clear, however, that to define Twitter as “an object in the world” involves far more than inspecting the code base – it requires a close study of how that code base shapes affordances into logics and how those logics shape social action.
Though the technology was only introduced in 2006, Twitter has become a “mass phenomenon” according to some researchers (Weller et al. 2014, xxix). It is certainly the case that while the size of its user base is less than one-fifth of the size of Facebook’s, it is often used by high profile individuals, already prominent on other media. Wu et al. (2011) conducted a survey of user profiles on Twitter and discovered that “elite” users (that is media, celebrities, organisations, and bloggers) generate nearly half of the Uniform Resource Locator (URL) links shared on the service. They also noted that celebrities tend to use the service to communicate with other celebrities, bloggers with bloggers and so on.

Twitter users send in excess of 400 million tweets each day (Weller et al. 2014). A tweet is a short-form message structure that explains why Twitter is commonly referred to as a micro-blogging service. In its early days, the company prompted users to tweet by asking “What are you doing?”, the idea being that users would blog about personal activities and experiences. It now asks “What’s happening?”, a change meant to reflect that “Twitter is used for a range of communicative practices” (Bruns and Moe 2014, 15). “A birds-eye view of Twitter reveals that... people are witnessing accidents, organizing events, sharing links, breaking news, reporting stuff their dad says, and so much more.” (Stone 2009). Perhaps it is better described as a short-form messaging service, not dissimilar from earlier web-messaging services such as chat rooms and from Short Message Service (SMS) technologies. It is different from these technologies in part because, by default, messages are sent publicly. Unless a user specifies otherwise, any tweet that he or she posts can be accessed by anyone with an
Internet connection.

This feature allows for some interesting dynamics in respect to how users source information from the application. User A can opt to follow user B, which means that any tweet that user B publishes will automatically be added to user A’s timeline — a live stream of content curated from different sources: user A’s followed accounts plus, algorithmically-derived suggestions and, these days, promoted content. This enables complex webs of follow-followed relationships to develop and makes Twitter particularly appealing to network analysts. These relationships can be reciprocal – A follows B and B follows A – but they do not have to be, and it is easy for researchers to distinguish between the two types.

Bruns and Moe (2014) define three structural layers of communication on Twitter. They call this follower-followed exchange a meso layer, and note that for individual Twitter users, followers constitute something akin to a personal public (Schmidt 2014). The ability to establish these publics is one of the “fundamental affordances which determine the flow of information on Twitter” (Bruns and Moe 2014, 16). In addition to this middle level of exchanges, there are micro and macro levels, defined by two syntactic conventions in tweet composition.

At its simplest, a tweet is a 140 character text string, including spaces and symbols, that allows a user to answer the “What’s happening?” prompt. However, users have developed conventions and practices to extend this functionality, and Twitter has co-opted some of these conventions into the design of the application. Tweets are frequently used to share URLs, making Twitter an important linking application for other information on the Web (Moe
The proliferation of URL-shortening services such as ow.ly, bitly.com and goo.gl has enabled Twitter users to fit resource locations comfortably within their tweets, leaving space for additional information and comment.

Twitter users employ the # symbol to align their tweets with particular topics. The use of the hashtag is a product of co-development between Twitter and its users, and often cited as an example of benevolent and accommodating adaptability on behalf of the company. However, Halavais (2014, 30) argues that Twitter “did more than merely make formal the informal workarounds of its users. These appropriations often displaced social practices that better represented the diversity of users and their needs, replacing them with model uses (and users) imagined by Twitter’s developers.”

The hashtag is Twitter’s macro communication layer. A keyword is attached to the # symbol (e.g. #LondonRiots) so as “to mark a tweet as being relevant to a specific topic and make it more easily discoverable to other users” (Bruns and Moe 2014, 17). In theory, this means that a tweet containing a hashtag has the potential to reach many more people than the direct followers of the publishing user. However, it should be noted that there is great variability in the way that users interact with the Twitter application: “the majority of users contribute to the Twittersphere via third-party applications” (Halavais 2014, 31). It cannot be assumed that users follow a hashtag in the same way that they follow individual users, nor that users interact with one hashtag in the same way as another. However, in certain circumstances, and for certain topics, the inclusion of a hashtag within a tweet may reflect the user's intent to contribute to an ad hoc
issue public (Bruns and Burgess 2011). It should also be noted that it is very easy to query the Twitter API for hashtags. This may have contributed to the attention the hashtag receives from Twitter researchers.

Twitter’s micro communication layer consists of @reply conversations. Independent of follower-followed relationships, it is possible for user A to insert a tweet into user B’s timelines by appending the @ symbol to user B’s Twitter username and including this within the tweet (e.g. “@userB thanks for the tweet. How are you?”). This behaviour is now an integral part of Twitter’s design. It is possible to start @reply conversations automatically: a button is embedded in every tweet to enable this function, and the web application uses JavaScript to deliver an @reply dialogue box whenever there is a ‘hover-over’ prompt. Furthermore, Twitter and most Twitter clients will notify user B whenever @userB appears in the body of a published tweet. This feature, sometimes called the @mention, is often distinguished from the @reply because any user can mention any other user at any time: there is no requirement for an initial tweet to prompt the response.

Finally, there is an important syntactic convention that may be viewed as operating across the different structural layers. The syntax for a retweet is straightforward. User B can retweet user A’s message either manually by appending RT to a reply to the original tweet, so that it reads “RT @userA...” or via an automated button that works in a similar way to the @reply button. The practice of retweeting:

“is inherently designed to move tweets across layer boundaries: Twitter users habitually use them to bring messages from the hashtag level to the
attention of their own followers (in the form of manual or ‘button’ retweets), or even to that of specific recipients” (Bruns and Moe 2014, 22).

These four conventions support a complex variety of communicative practices. @replies and retweets can be chained together, so that user interactions and comments are layered upon the original message, creating a far more complex matrix of meanings than might originally have been intended. There are other conventions too, including the MT (mass tweet) and .@reply (used to broadcast engagement in an @reply exchange to followers), and there is also direct messaging functionality, so that users can conduct conversations privately but remain within Twitter’s infrastructure. These additional conventions will be discussed and explained where necessary. To start with, however, it is sufficient to introduce the hashtag, the @reply and the retweet, because knowledge of these conventions is essential for even a cursory exploration of Twitter research.

Within a year of its release, researchers were attempting to determine why anyone would use Twitter, focusing very much on its micro-blogging functionality. Java et al. (2007) attempted to describe “the topological and geographical structure of Twitter’s social network”, capturing data from a period when Twitter was just beginning to become popular beyond its founding community (ibid 2). They found that Twitter was most popular in the US and Europe, and that those users who followed many other users, also tended to have many followers of their own. Neither discovery seems particularly surprising in hindsight, but it is interesting to note that only “one eighth of all posts in the collection contain a conversation and that this form of communication was used by almost 21% of users in the collection”. At that stage in Twitter’s development,
users were primarily posting updates “about daily routine or what people are currently doing” rather than using the application for communicative exchange (ibid 7). Twitter did not support user-user conversation initially. The @reply convention was a user-driven innovation that was still being adopted in 2007.

In 2009, when the application had 41 million users and it was a good deal easier to access the API, Kwak et al. (2010, 1) questioned whether Twitter was primarily a social network or a news media, via a “quantitative study on the entire Twittersphere and information diffusion on it”. Their analysis suggested that micro-blogging was no longer the primary activity of Twitter users. Taking advantage on an emergent feature of the application – trending topics (an algorithmically-derived list of popular or oft-mentioned key words) they showed that “the majority (over 85%) of topics are headline news or persistent news in nature”.

They also identified an apparent relationship between the numbers of tweets posted per user and the number of followers, though their graphs also imply a saturation or flattening effect above a certain number of followers. While there is a certain sense to this relationship, the observed correlation between tweets and followers reveals little about why or how tweets should translate into followers. Using Twitter’s time zone data field, they calculated “the time differences between a user and r-friends”, computed an average and assumed that users within the same time zone were more likely to be similar. They found that up to a threshold (2000 followers) the “median time differences of the user and r-friends stays below 3 hours”. Once a user has 5000 followers, however, the medium time difference is six hours (ibid 4). In other words, it appeared as
though smaller follower lists tend to be more local. Global reach tended to be a product of many followers, and popular Twitter users tended to have media profiles beyond the confines of the application.

Huberman et al. (2008) took a rather more nuanced approach to the Twitter network, reasoning that attention scarcity limits the number of interactions between users to far smaller networks than those implied by follower-following lists. They noted that although the “standard definition of a social network embodies the notion of all the people with whom one shares a social relationship, in reality people interact with very few of those ‘listed’ as part of their network.” As such, they distinguished between a social network represented by the Twitter API and the social network that matters to the user in question. This approach, at least, takes into account some of the criticisms raised earlier, particularly the complaint that automated social network analysis reveals little about the type of relationships identified between users.

They differentiated between a user’s followers and friends, a friend being someone to whom the user has directed two or more @replies. Whereas the correlation between posts (their assumed measure of productivity) and followers appeared to saturate (i.e. once a certain number of followers is reached, the number of posts levels off), the post-friends relationship continued to grow. This, the authors suggest, implies that reciprocated attention is an important driver of activity on Twitter. They also conclude that Twitter users have a small number of friends compared to their follower-following connections. “This implies the existence of two different networks: a very dense one made up of followers and followees, and a sparser and simpler network of
actual friends.” (Huberman et al. 2008).

Such a finding, clearly, would have important implications for any theory of *how* Twitter users were employing the application to communicate. It should be acknowledged that this supposed relationship between friends/followers and Twitter productivity, assumes that the attention drives activity. Of course, this is less likely to be the case when follower numbers grow very large – unless an account is automated (a bot of some sort) there is simply not time in day to compose sufficient tweets. Additionally, it must not be forgotten that large Twitter followings are often driven by celebrity status, or by a media profile beyond Twitter. In these circumstances, very different dynamics are likely to be in play, affecting both how a user attracts followers, but also how the user chooses to communicate on Twitter.

In an attempt to address precisely this question, Wu et al. (2011) sought to discover: “who says what to whom on Twitter”? Their approach was very much located in the effects tradition of communication theory, and is not one that is endorsed here necessarily. They found “that although audience attention is highly concentrated on a minority of elite users, much of the information they produce reaches the masses indirectly via a large population of intermediaries” (Wu et al. 2011, 2). They concentrated on URL inclusions in tweets “because URLs point to online content outside of Twitter; they provide a much richer source of variation than is possible in the typical 140 character tweet” (ibid 3). By tracking the tweeting and retweeting of selected URLs, their analysis revealed that hyperlinks tend to originate from a small group of “elite” users before they are retweeted through chains of intermediaries to reach the “ordinary” users.
The destination of those hyperlinks was difficult to determine, but by restricting analysis to URLs specific to *New York Times*, the authors categorised content into subject areas, including business, sport, health and technology.

Taking an even more mechanistic approach, Cha et al. (2010) attempted to quantify influence among Twitter users for the purpose of designing better marketing campaigns. They identified three characteristics of the Twitter application that they took as proxies for calculating the influence of any given Twitter user: in-degree (more simply, the number of followers), retweet rates and @mentions. While this work exposed some interesting dynamics of the Twitter user-base (celebrities are widely followed, content aggregators are often retweeted) it offers little insight into how the audience engages with content – the nexus of influences – or, indeed, how the audience is configured around these influential users xvii.

This classification of users into elite and ordinary categories may seem familiar. In the effect models tradition, content was perceived to pass through influential actors in channels connecting the mass media to public opinion (Katz and Lazarsfeld 1955). Though communication theory has largely moved beyond effects models, the elite category is reminiscent of Jürgen Habermas’ description of “elite” agents of mediated political communication in the public sphere (Habermas 2006). Wu et al. (2011) subdivided their elite Twitter users into four categories – media, celebrities, organisations, and bloggers – user types that would fit well into Habermas’ model, though Habermas, of course, appears to have little time for bloggers (Bruns 2007).
boyd et al. (2010, 1) described the conversational dynamics of retweet chains and noted that individual motivations for Twitter activity are complex: “issues of authorship, attribution, and communicative fidelity are negotiated in diverse ways”.

The ability to categorise Twitter users and to track the flow of information between them has framed a good deal of research into the technology without ever really revealing a method that enables meaningful cross-context exploration of the application. Bruns and Stieglitz (2012, 162) noted that “comparative research on a large number of discussions, their dynamics and patterns is missing”. In response, they proposed a series of metrics for comparing hashtag-centric communication data. The same authors have also argued for a more systematic approach to the application of metrics, and proposed standardised methods for the collection and processing of data (Bruns and Stieglitz 2013, Bruns and Burgess 2012). While it is most likely desirable to have a standardised framework within which to work with these technologies, the authors’ proposals were guided by their preferences for particular tools and data processing techniques. In the main, this involved third-party applications rather than direct engagement with the API and the data. At the very least, such an approach inserts another layer of code – unknowable to most researchers – into the process. If the aim is to increase transparency and to limit uncertainty, then it is probably better to urge researchers to engage directly with their data gathering and processing methods, rather than be guided by the preferences and limitations of third-party tools.

As it is, calls for standardised approaches betray a desire for quantitative
objectivity, and it may well be that such objectivity is simply not attainable in this context\textsuperscript{xix}. For many researchers the API itself remains a black box (Driscoll and Walker 2014, Morstatter et al. 2013): it is an assumption that the streaming samples most researchers collect are random and representative. Furthermore, the complexity of the inter-connected modern media ecology ensures that complex confounding relationships – often context-specific – will undermine most attempts at objective cross-context comparisons (Ruths and Pfeffer 2014). A headline-grabbing attempt to model social network site usage epidemiologically was widely critiqued for the multiple assumptions and methodological mistakes it made (Cannarella and Spechler 2014).

Researchers must be aware that their choices and assumptions in the collection and processing of data are as relevant as their interpretative findings. Just as good programming involves meticulous documentation and explanation of code, good research involving code must maintain a similar documentary rigour. For that reason, it is particularly useful when social research and computer science teams work together and publish their efforts independently. For instance, Anderson and Schram (2011) reported on their work to develop a “data analytics infrastructure” to support different social science research teams. Beyond the inherent value of describing the computing choices and strategies involved, what is particularly notable is the complexity of the decision-making processes and programing logic required to address the type of questions the researchers wanted to ask.

For individual researchers, operating without rare research agreements with Twitter, or expensive commercial datasets from Twitter’s corporate data
providers, it is almost impossible to capture tweets across the full duration of an event. There are a couple of reasons for this. It is very difficult to determine exactly when an event begins and ends. Mark Duggan was shot by the Metropolitan Police on 4 August. The protests in Tottenham took place on 6 August in the afternoon. Rioting began in the evening but only spread elsewhere on 7 and 8 August. A Twitter researcher would have to have been collecting tweets already to capture all of these events. Over three years later, tweets are still being sent under the various hashtags.

Without considerable computational resources, it is almost impossible to maintain a continuous connection to the Twitter API. Even if a connection can be maintained, Twitter's terms of use make it almost impossible to query the API continuously in a way that might be useful. The outcome is that researchers must either anticipate events like the London riots (and, of course, the hashtags that will be used to discuss these events), or respond as quickly as possible once these events have begun. Twitter permits limited historical access to tweets through its API, and this access is opaque and becoming ever-more restricted. As such, datasets collected in response to major social, political and environmental crises often start poorly, end disappointingly and are incomplete in the middle.
CHAPTER THREE

REVIEW: PROGRAMMING DEMOCRACY

INTRODUCTION

This second review chapter looks to advance the discussion of communication software and to consider more closely its potential for providing outcomes that could reasonably be said to be democratic. It is an initial response to the claim that Internet communication tools can contribute to more productive discourse, increasing plurality and liberating information for the education of the citizenry (Kellner 2004). It aims to answer two questions: how has the relationship between technology and democracy been studied, and how should it be studied in the context of the UK riots?

In the first instance, however, it is necessary to define democracy in this context. The word democracy has many meanings; there are different versions of democratic theory and different interpretations of that theory in action. These differences affect any analysis of communication and political action. As Hindeman (2010, 5) notes, those “who discuss the Internet’s impact on political life are enormously fond of the word democratization, yet public discussion has used the word democratize in at least two distinct senses.” The first sense, he argues, is normative or aspirational, and frustratingly imprecise, in a way perhaps best articulated by George Orwell:

“It is almost universally felt that when we call a country democratic we
are praising it: consequently the defenders of every kind of regime claim that it is a democracy, and fear that they might have to stop using that word if it were tied down to any one meaning.” (Orwell 1946/2003, 346).

The second use of democracy is normative-descriptive, in that any mechanism by which Internet technologies “amplify the political voice of ordinary citizens” is automatically called democratic (Hindeman 2010, 6). The fact that the Internet does amplify citizen voice, cannot be taken for granted of course.

The political theorist Henry Farrell has proposed three mechanisms by which social media can effect socio-political action – and according to which they might be called democratic. First, Internet technologies may affect collective action, lowering communication costs and making it easier for political groups to recruit or to organise themselves (campaigns, issue-advocacy, protests, voting). Second, these technologies may make it easier for like-minded individuals to locate each other and cluster – a process he calls homophily (a coinage that is context-specific, though it draws on ideas from network science, and the propensity of certain groups to resemble each other). Third, they may affect individual propensity to disguise or falsify true political preferences, which may be significant in authoritarian regimes especially (Farrell 2012, p 8-9).

These mechanisms assume an action-orientated model of democratic politics. Social media is conceptualised as an enabler of group formation and collective action – an approach that seems to suit the political study of protest movements. An application like Facebook, for instance, may make recommendations for a page to like or a group to join based on past expressions of political preference or through association with political activity of one’s Facebook friends (Vitak et
al. 2010, Elmer et al. 2009). Twitter, meanwhile may suggest users to follow based on already existing follower-followed relationships. Suggestions may also arise more organically through retweeting or favouriting practices. Some of these linkages and suggestions depend upon algorithmic processing and filtering, and introduce an entirely new layer of complexity into definitions of software-enhanced politics.

Discussing the competing claims on democracy pursued by various ideologies during and after the 2003 invasion of Iraq, Lewis and Best (2003, 2) argue for a more radical interpretation of the concept – one that recognises that “democracy is a complex and multi-dimensional concept, that is subject to ongoing semiotic disputes and “language wars”. In this interpretation, democracy and democratic action are the result of discursive cultural and communicative processes – claims to democracy are grounded in the semiotic struggle and legitimacy is a product of linguistic hegemony. Rather than an ideal or normative achievement, then, democracy is either “all that is good or virtuous in the modern state” or it is the “expression of public approval for the government and its actions” (ibid, 2).

If democracy is imagined as a communicative process, either a discursive and sometimes violent struggle following Lewis and Best (2003) or a deliberative act following Habermas (1991), (Habermas 1984), then Farrell’s mechanisms are less well-suited to explaining social effects. The preference, in this thesis, is to treat democracy as a communicative process, and to concentrate on technology’s influence on the mediation of this communicative process. It will not assume a priori that democracy is idealised deliberation or language wars; rather, it will seek to study democratic communication, which for simplicity it will call
discourse, and to explore which interpretative description of democracy appears most appropriate.

**The democratic context for the UK riots**

When the proposal for this thesis was being drafted in the autumn of 2011, a “democratic impulse” (Hassan 2012) was supposedly transforming the Middle East: Tunisia was heading for elections, Egypt was attempting a post-Mubarak transition, Gaddafi had been overthrown and killed and protesters in Syria were demanding the resignation of Bashar al-Assad. The democratic stock of social media had never seemed higher (Jurgenson 2012). In mid-2015, as the thesis approaches completion, the apparently inevitable march of democracy (Kaldor 2011) is looking somewhat disorientated. It has been waylaid by authoritarianism in Egypt, chaos in Libya and four years of horrible state-sponsored and sectarian violence in Syria (Dyer and Hille 2015) that threatens to destabilise, once again, vast swathes of the region.

If the more excitable analysis had been correct, then the Arab Spring was notable mainly because protesters were tweeting during their protests. Indeed, at times it became difficult to see the political protest as anything other than a communicative act, such was the attention given to Facebook and Twitter in the academic analysis (Harlow and Johnson 2011, Hounshell 2011). It was not uncommon to read that protests in Egypt were a “Facebook Revolution”, for instance xx. Adopting Larry Diamond’s (2010) description of “the modern, interrelated forms of digital ICT – the computer, the Internet, the mobile phone,
and countless innovative applications for them” as “Liberation technology” (ibid 70), Snider and Faris (2011, 49) claimed that Facebook and Twitter were a “main cause” of political transformation in Egypt. In effect, two social media applications (one of which was barely five years old and hardly used outside the West) had become so influential that they were centrally implicated in mass protest movements of incredible organisational and ideological complexity. How did this happen?

In part it happened because there was a strong intellectual (and political) desire in the West for it to happen (Morozov 2011b). In 2009, following a presidential election, a popular uprising led, in part, by the opposition Green Movement, disputed the victory by incumbent Mahmoud Ahmadinejad. Videos of protesting students were uploaded to YouTube, people wrote blogs, and the social-messaging service Twitter “drove people around the world to pictures, videos, sound bites, and blogs in a true reality show of life, dreams, and death.” (Pfeifle 2009). Indeed, so strong was the perceived influence of Twitter in coordinating the post-election protests, the US State Department asked the (US based) company to delay scheduled maintenance work to avoid disrupting communications among the protesters (Musgrove 2009). “Through it all, no one seemed to wonder why people trying to coordinate protests in Iran would be writing in any language other than Farsi.” (Esfandiari 2009).

As Morozov has argued, far too much of our theory connecting Internet technologies and social-political processes over-simplifies the social dynamics of technology use, and over-plays the emancipatory power of network communication. It is a type of “cyber-utopianism: a naïve belief in emancipatory
nature of online communication that rests on a stubborn refusal to acknowledge its downside.” (Morozov 2011b, xiii, Lewis 1998). Morozov is ever-keen to emphasise the ideological aspects of cyber-utopianism: the neoliberal and neoconservative tendencies of a technology culture born and nurtured in Silicon Valley.

Was 2011 simply a repeat of 2009, when claims made about Twitter’s role in Iran were contradicted by cursory explorations of what actually happened on Twitter? Certainly aspects of social media logic were co-opted into democratisation arguments and used to imply that Internet technologies would challenge authoritarian and anti-democratic regimes through the irresistible logic of their functioning (Jurgenson 2012). So, for instance, social media connectivity made it impossible to isolate the population in Egypt from information about events in Tunisia (Howard et al. 2011). Similarly, across the region, the speed of social media made it impossible for repressive state apparatus to respond sufficiently quickly to stamp out individual protests, allowing a protest momentum to build, to the point that it became irrepressible (Tufecki 2011).

Clay Shirky has argued that the more “promising way to think about social media is as long-term tools that can strengthen civil society and the public sphere” (Shirky 2011, 5), something he calls an “environmental view” of Internet Freedom. Which tools though, and by what mechanisms in which contexts? Why should all social media tools work the same? Certainly Shirky is able to provide examples of communicative practices that appear to have been involved in political movements (he references cell phones and the impeachment trial of
Philippine President Joseph Estrada, for instance) but there is no systematic social theory to explain why specific technologies will make specific types of political behaviour more likely. Rather, to accept Shirky’s analysis, is to be content with a “basic truth — that communicative freedom is good for political freedom” (Shirky 2011, 4).

There is a considerable body of literature that takes this “basic truth”, which is really a context-free assumption, and uses it to argue that Internet technologies engender social and political freedom. Several broad themes run through this work: that the spread of the Internet is a little like the rise of the printing press (Jarvis 2012); that like the printing press, the Internet will transform social institutions and endeavours (Shirky 2008, Benkler 2006); that information shared via a network is harder to hide and harder to censor (Tufekci 2011, Brooke 2011); that emancipated information creates an informed and politically dynamic citizenry (Shirky 2011); indeed, that the very nature of Internet communication, its speed or its virality makes social change if not inevitably then exceedingly more likely (Hoang and Lim 2012, Tufecki 2011, O’Reilly 2007).

There is nothing inherently problematic about the apparent political motivation behind some of these arguments (Hammersley 1995); rather the issue is with a perceived lack of conceptual and methodological rigour.

Bennett and Segerberg (2012, 743) argue that social media logic extends to “digitally networked action (DNA)” (that is action enabled by digital communication), which they credit for initiating and sustaining several protest movements including the Put People First (PPF) campaign, *Occupy* and *los indignados* in Spain. In effect, they suggest that the bloating effect described by
Rieder is uniform across a range of software, the implication being either that these different applications are remarkably similar or that effects are predominantly socially constructed. This sort of reasoning relies on a Castells-inspired network structuralism. They describe how late age modernity has produced an “engagement with politics as an expression of personal hopes, lifestyles, and grievances,” especially among younger generations (ibid 743). This emergence of political positioning resonates in a society increasingly structured according to weak tie social networks:

“networks are established and scaled through various sorts of digital technologies that are by no means value neutral in enabling quite different kinds of communities to form and diverse actions to be organized, from auctions on eBay to protests in different cultural and social settings.” (Bennett and Segerberg 2012, 744).

This produces a logic of connective action as opposed to collective action, which is the established political-science and social movement formula for explaining how individual action frames can be mobilised into collective political action. At the “core” of the collective action logic is “the recognition of digital media as organizing agents.” (Bennett and Segerberg 2012, 752). Bennett and Segerberg offer a quasi-specific explanation of the mechanisms through which this network logic effects itself:

“Such digital mechanisms may include: organizational connectors (e.g. web links), event coordination (e.g. protest calendars), information sharing (e.g. YouTube and Facebook), and multifunction networking platforms in which other networks become embedded (e.g. links in Twitter and Facebook
posts), along with various capacities of the devices that run them. These technologies not only create online meeting places and coordinate offline activities, but they also help calibrate relationships by establishing levels of transparency, privacy, security, and interpersonal trust.” (Bennett and Segerberg 2012, 753)

A potential criticism of this approach is that different Internet applications (software) are conceptually reduced to the digital networks upon which they run – they are presumed to reconfigure human social organisation without any real regard for how users and individual applications might interact. YouTube, Twitter and Facebook simply become homogenous platforms contributing to an over-arching logic of multifunction networking. The specificity, when it comes, is entirely concerned with describing the types of network and the types of action that these networks produce. The communication mechanisms, the “real software, lodged in tight networks of other software, all written for a purpose; knowledge, ideas, skills, tools, methodology, habits, and values that permeate practices” (Rieder 2012) are largely ignored. In other words, like much network-focused analysis, there is a problematic determinism inherent to this type of utopianism: human culture is determined by the systems and apparatuses that it mobilises for specific communication purposes.

It is overly simplistic to assume a liberating logic for any technology, which may: “work in favor of freedom of expression by making it easier for us to express ourselves, but at the same time they also tend to work in favor of surveillance by making more of our private information public.” (Morozov 2011a, 62). In a 2011 report for the activist group Association for Progressive Communications (APC),
Alex Comninos considers the value of the “Facebook revolution” rhetoric in light of complicating socio-political dynamics and concludes:

“While the terms ‘Twitter revolution’ or ‘Facebook revolution’ may not be accurate, the assertions that ‘the revolution will be tweeted,’ ‘the revolution will be live-blogged’, and ‘the revolution will be streamed’ do have credence in the cases of Egypt, Tunisia, Syria, Bahrain and Libya. These events involved masses of people protesting on the streets, many using mobile phones to organise the demonstrations and to spread their messages.” (Comninos 2011, 7).

Beyond the Egyptian government’s decision to switch off Internet access between 26 January – 2 February, where is the evidence that Twitter and Facebook were being used in this way – to organise demonstrations and to spread messages (effectively mechanisms one and two in Farrell’s schema)? On one level, it is possible to point to Facebook pages – *We are all Khaled Said* and the *6 of April Youth Movement* both “called for demonstrations on 25 January” (Comninos 2011, 8) – and Twitter hashtags that refer directly to protest events. However, as Iran showed in 2009, the presence of people on Facebook and Twitter discussing and promoting protest movements is not sufficient to prove on the ground action. Internet technologies enable distanciation (Giddens 1990). Beyond, television footage of young Egyptians in Tahir Square with mobile phones, what is the empirical evidence for these claims?

It should be easier than ever before to gather empirical evidence about these sorts of communication practices. The datafication of communication means that considerable information is available about individual cases of mass self-
communication. Howard et al. (2011, 2) gathered “a unique database of information collected from Facebook, Twitter, and YouTube” to explore the role that these applications played during the Arab Spring. They concluded that social media “played a central role in shaping political debates”, was “integral” to physical protesting and “helped spread democratic ideas across international borders” (ibid 2-3). There remains an issue, however. How easy is it to convert social media data points into ‘objective’ conclusions about communication practice? A closer reading of the authors’ methods suggests that a more cautious approach would be advised: the knowledge extractable from the data is neither that persuasive nor that conclusive.

For instance, the authors state that “about 25 percent of the population in Tunisia and 10 percent of the population in Egypt has used the Internet at least once” (Howard et al. 2011, 6). These are small minorities. Given this baseline, what does it matter if “30 percent of the people actively contributing to Twitter conversations inside of Tunisia were women” (ibid 6) or that “18 percent of the Tweets about the Tunisian uprising came from inside Tunisia, 8 percent from neighboring countries, and 32 percent from outside the region” (ibid 10). Relative to the populations of these countries, these are tiny percentages and yet they are being handed enormous socio-political agency. Given such a low baseline, it is surely inappropriate to align use of social media with “average citizens” because the limited sample excludes three-quarters of the population of these countries.

The authors conclude that “a spike in online revolutionary conversations often preceded major events on the ground.” (ibid 23). This conclusion prompts a
couple of questions. First, a coincidental spike in social media interest with a physical protest or demonstration is not evidence of causation. Indeed, given *a priori* knowledge of a physical demonstration, it would be peculiar in the extreme if there were no corresponding increase in interest communicated via social media. Second, how is it possible to identify a “revolutionary conversation”? So much data is available that such a task is almost always automated, but defining and identifying “revolutionary conversation” algorithmically is inherently reductive – to the point that apparently objective observations quickly turn “to polemics rather than substance... to provide rhetorical support for grand, sweeping arguments” (Farrell 2012, 1).

The purpose of this critique is not to deny the democratic potential of social media, nor to pre-empt the analysis of communication practices during the UK riots. It may well be that social media played a significant role in the Arab Spring; the issue is that such a claim needs to be conceptually justifiable and supported by rigorous empirical analysis. The critique is intended to support an argument that, to date in Internet studies, conceptual framing remains in its infancy and empirical analysis has not been sufficiently rigorous. The required weight of evidence has not yet been provided.

Critics of cyber-utopianism must also be aware of making macro arguments based on limited observations (Gladwell 2010) and of concentrating too much on examples that suit a purpose (Morozov 2013b). The situation is almost always too complex for polemics, and that is why Farrell’s call for robust conceptual hypotheses and detailed empirical work is so important – even if it only produces cautious and context-specific findings.
An approach that might reveal something about the mechanistic relationship between social media and democracy seeks to describe “information flows”; that is recurring patterns in the communicative exchanges supported by Internet applications. At least two independent research teams have applied such an approach to Twitter datasets collected during the Arab Spring, Twitter being a technology that lends itself to analysis in this way. Lotan et al. (2011, 1375) define information flows as “sets of near-duplicate tweets”, the implication being that ideas encoded into language (information) persist, and are identifiable, as long as that language doesn’t change – or doesn’t change much\textsuperscript{xiv}. In the case of Twitter, such information flows are generally retweet chains – in this example “any group of retweets that included 19 or more posts in the Egypt dataset, and 16 or more in the Tunisia dataset.” (ibid 1382).

The authors proceed to identify influential actors within these retweet chains and analyse how those actors were responsible for creating and distributing content on Twitter. Their approach permits a specific and detailed analysis of Twitter information flows, tracking individual tweets from source through various retweets, edits and amplifications. In doing so, they identify considerable overlaps between information flows in separate Tunisia and Egypt datasets, which they conclude: “suggest that patterns of Twitter usage simply highlight pre-existing relationships among people with similar interests. That is, there is a set of people interested in events like the Egyptian and Tunisian revolutions that Twitter makes visible.” (Lotan et al. 2011, 1397).

Alternative explanations include the idea that Twitter becomes a convening place for people with similar interests (an example of homophily in Farrell’s
terminology), or that Tunisia produced a learning effect that proceeded to influence Twitter use in Egypt. Interestingly, when reviewing the sources of their information flows, the researchers discovered that “news on Twitter is being co-constructed by bloggers and activists alongside journalists” (Lotan et al. 2011, 1400). Such a finding presumably has implications for any Habermasian interpretation of social media: the public sphere is opened up to a greater variety of citizen voices. In general, this careful, close reading of Twitter use combined with cautious but theoretically grounded conclusions, seems a far more productive approach to studying social media applications during complex political events.

Starbird and Palen (2012) adopted a similar approach, choosing to investigate retweet chains to identify patterns of diffusion and influence on Twitter during the Egyptian protests. Diffusion can be a problematic term when applied to communication studies but the approach reveals some interesting observations regardless. The authors argued that “consideration of the retweet mechanism reveals a good deal about information contagion across a large number of people and how this behavior figures into social movements” (ibid 2). They noted that 30% of the most retweeted Twitter users were in Cairo during the protests, a finding that challenges the assumption that the most influential Twitter users are Western media personalities – celebrities and journalists. At least in this case, Twitter seems to have been responsive to physically-located tweets that “contained information about meeting times, injuries, violence, supplies needed, etc.” (ibid 1), perhaps because Twitter at-large found these tweets particularly notable:
“While witty and humorous tweets experienced “sticky” retweetability, serious tweets remarking on violence, especially violence against the media, and asking for support were also among the most popular... Popular tweets from locals also included first hand reports of violence or tactical information” (ibid 6).

Another potential explanation is that Egyptians in Egypt were over-represented in the Egypt-specific Twitter audience (i.e. the Egypt ‘public’ was predominantly a national concern). Neither conclusion would be particularly surprising, perhaps, but both would shed some light on distanciation dynamics – and both would challenge, to an extent, the criticism that undermined much of the Iranian-Twitter commentary. Significantly, journalists and media outlets were prominent among the most retweeted users: seven of the ten most retweeted accounts were established media figures.

The detail in this type of analysis is rewarding. The authors identified the most retweeted tweet in their dataset and were then able to trace the ‘life’ of this tweet, observing how different meanings were attached to it by different users, through minor edits to the text and changes in emphasis. The tweet itself, a visual pun that used block Ascii characters to mimic a computer load bar, is adapted in different ways to illustrate “freedom loading”, “dictator uninstalling” and to compare the relative progress of protests across the region. The authors compared the frequency of this tweet across their different groups, and discovered that very few variations on its theme originated from Egyptian users.

There is something particularly notable about these types of analysis and it is important: they proceed without consideration of the physical-social,
temporal-spatial contexts of the Twitter users producing the tweets that are being analysed. Clearly there are ethnographic and anthropological arguments for situating these users better, for exploring who they are, where they are, and how they use social media as part of the socio-cultural reality. A critique of the analysis of Tunisia’s uprisings was that it assumed too much about the minority of Tunisians who actually use Twitter. This does not mean that such analysis demands a full ethnographic account of the study population – this is a textual dissertation, happy to interpret democracy through signs and communicative practices. As Grimmer and Stewart (2013, 1) have argued in favour of textual analysis: “Politics and political conflict often occur in the written and spoken word”. However, it is surely the case that textual analysis can be strengthened by a closer analysis of context and the recognition of situated users.

So, for instance, it could be highly instructive to add a temporal dimension to this analysis of retweet flows. Were early retweets located similarly, or was there immediate global diffusion of popular messages? Did the relative distribution of this tweet change over the study period? This is information that could, potentially, reveal a great deal about the democratic potential of these flows and offer some insight into the relationship between dis-embodied Twitter communication and the physical-social distribution of Twitter users. Developing a temporal-spatial approach for specific and ‘located’ analysis is a primary aim in this thesis.
DEMOCRACY AND THE LONDON RIOTS

The discussion of the Arab Spring provides important context for the UK riots, both in terms of recalling the media focus in 2011 and providing an introduction to the dominant themes and ideas in digital-political theory. These were the popular and academic narratives when the riots occurred, they are useful background, but the riots and disorder that occurred across London and other English cities in August 2011 provide a specific, critical platform for analysing the relationship between democracy and social media within an advanced Western content.

As established, there was never much suggestion that Twitter was responsible for riot organisation or promotion – apart from a remarkable claim (and a threat to “stop people communicating” by social media) made by the Prime Minister in parliament. If there were any blame for riot organisation support, then it was directed at Blackberry Messenger, an encrypted messaging service that was never very common and hastened its own demise when the service failed globally for several days in October 2011. There is less temptation, then, to consider Twitter as an organising force for the riots. In some ways, then, this makes it easier to consider the application simply as a media channel – to normalise it in some respects – and to question what contribution it made to meaning-making practices in a dense but discordant mediasphere.

There is also a gap in the literature that needs addressing. In the introduction chapter, several references were made to different reports, critiques, analyses and interpretations of the UK riots, but these hardly dealt with the role of social
media in riot-related meaning-making. Fuchs (2012) established that there was widespread media condemnation of social media rioters, but critiqued this condemnation as unjustified. There has not been a thorough empirical investigation of how social media enabled (or inhibited) responsible political discourse during the riots. Such an investigation would be a worthy addition both to a historical understanding of the riots themselves, but also to the wider body of digital-political theory.

It was established earlier in this chapter that there are different approaches to imagining and to studying democracy (Held 2006). The analyses of social media use during the Arab Spring tended to assume either an action-orientated approach or a discursive communicative one, but not both together – either social media helped protesters identify each other and organise, or it contributed to revolutionary conversation and a rising tide of emancipatory conviction. It’s not that the two democratic models are mutually exclusive, or even contradictory as such: as Farrell has suggested, there can be different mechanisms by which social media affects democratic processes. However, analytic approaches tend to be driven by theoretical preferences, and as far as this thesis is concerned, the communicative approach is superior to the action-orientated one.

The reasons for this assumed superiority have also been established already, but a quick review may be beneficial. Action-orientated models assume that Internet technologies confer on their users some of the properties of the underlying network architecture. Such logic is uncomfortably close to determinism, implicitly ignores the complexity and unpredictability of individual meaning-
making practices and relies on a network structuralism that has very little explanatory power (Morozov 2013b, Erickson 2012, Rieder 2012, Lewis 2005, Baldamus 1982/2010). These are not criticisms of action-orientated political theory, but of the techno-socio interaction model. In short, this thesis is happy to accept the idea of social media logic, but not in lieu of a social construction model that fully considers the interaction of communication technologies, meaning-making processes and dominant social structures.

For these reasons, a communicative approach to democracy is considered preferable. It is important to note that this preference is not meant as an implicit endorsement of communicative models above participatory ones – or, indeed, the republican, liberal or pluralist models (e.g. Held 2006). Clearly there are limitations to this approach, as there are to assuming any type of normative democratic model (Loader and Mercea 2011, Agamben 1993). Rather, it is an endorsement of a particular approach to framing the study of Internet communication technologies. It may well be that the connective action approach is a highly productive one (Bennett and Segerberg 2012), but in its present application and in this analysis, it does not pay sufficient attention to individuals and their complex meaning-meaning practices. At the heart of the machine, there remains an unexplored black box, and this thesis aims to shed some light on its workings.

**THE PUBLIC SPHERE AND DELIBERATIVE DEMOCRACY**

With the decision made to focus on communicative democratic models, Jürgen
Habermas looms large in the discussion. For better or for worse, as Roberts (2009) has written, debates about the Internet and politics have long revolved “around a set of assumptions about the nature of political communication and the functioning of what is often referred to as the ‘public sphere’.”

“Political philosophers have also worked in recent years to expand the notion of political voice, with a torrent of scholarship on what has come to be called deliberative democracy... these deliberative democrats all agree that democracy should be more than just a process for bargaining and the aggregation of preferences. All suggest that true participation requires citizens to engage in direct discussion with other citizens.” (Hindeman 2010, 7).

In other words, there has long been an assumption that, through their social media logic, applications like Facebook and Twitter are ‘democratising’ because they extend and strengthen civil society and the public sphere (e.g. Shirky 2011).

In the formative days of the Internet – both as a popular technology and as an academic concern – scholars repeatedly called on Habermas and his theories of the public sphere, deliberative democracy and communicative action to explain how the Web could empower citizens and invigorate democratic processes (Rheingold 2000). These are normative theories – explanations of how democracy should work in an idealised context, where deliberation and reason are guiding principles. The validity of such a context, including its origin in Enlightenment thinking has been debated extensively, and it is not a debate that needs to be reignited here (e.g. Love 1989). Rather than weighing the absolute validity of deliberation, reason and communicative action as concepts, the aim is
to look at how those concepts have been used in Internet studies, and to ask if they might be used more productively in future empirical investigations.

Primarily, Habermas has been used to argue that the Internet enables a type of communication that is closer to the normative model than had previously been the case. Two main logics have been invoked in support of this argument. First, Internet technologies supposedly have the potential to liberate publishing from media gatekeepers and established interest groups. By lowering communication costs and by de-restricting access to media platforms, the Internet is meant to enable all citizens to participate in (and contribute to) deliberative discourse, invoking reason and seeking consensus. As Dan Gillmore (2004, xviii) wrote: “The ability of anyone to make the news will give new voice to people who’ve felt voiceless—and whose words we need to hear.” Quoting the Delaware Supreme Court (Reno v. ACLU, U.S. 521 (1997)), Michael Hindeman noted that it was “held as a matter of fact that ‘the Internet is a unique democratizing medium’ that allows ‘more and diverse people to engage in public debate’” (Hindeman 2010, 3). Benkler (2006) coined the phrase “networked public sphere” to describe a communicative dynamic more open, more accessible, and more informative than the one dominated by traditional broadcast and print media.

The second logic to find popular support curiously mixed Habermas’ Enlightenment pursuit of reason through deliberative exchange with the very postmodern idea that the Internet could liberate users to navigate and construct their own identities. Sherry Turkle, writing in Wired, explained that “There are many Sherry Turkles”, one of whom is “the cyberspace explorer, the woman who might log on as a man, or as another woman, or as, simply, ST.” (Turkle 1996).
The assumption was that this ability to navigate the self, and to re-identify oneself, enabled all citizens to engage in the public sphere on an equal footing. Much like in Habermas' coffee houses – his *Tischgesellschaften* of eighteenth century France (Habermas 1991) – on the Internet there “was disregard of social status, a fundamental parity among all participants such that the authority of the better argument could win out over social hierarchy.” (Dean 2001, 244). On a message board or in a chat room, it didn’t necessarily matter if a user was the company CEO or the janitor – social credentials were stripped away, and in the pursuit of reason ideas could triumph on merit alone.

It wasn’t especially long before critics began to point out that the Internet didn’t work very often in the ways that were being described. Dean (2001, 246) “highlights the inability of Habermas’s... concepts of the public sphere to deal adequately with the complexities of the information age.” Not only does the Internet fail to replicate the civilised and rational environment of Habermas' coffee houses, “the regulatory fiction of the public sphere privileges a theorization of political norms” (ibid 247). In short, the normative restrictions of the public sphere model are actually very unlike the techno-socio reality found in Internet chat rooms, on message boards and, these days, on social media. Far better, she suggests, to adopt “a civil society model” that “presents a move toward heterogeneity and contestability as well as an acknowledgment of the contingency, variety, and potential for violence among the diversity of political styles and engagements” (ibid 250).

In order to illustrate this point, it is worth quoting the passage at some length:

“To return to *Salon*’s discussion groups: from the standpoint of the public
sphere, the discussions seem, at best, a kind of banal content enabled by a software program installed so as to draw in consumers and advertisers or, at worst, a set of irrational and often demeaning rants of the privileged few against a disenfranchised many. From the standpoint of civil society, however, the discussions appear much more as specific expressions of curiosity, play, or engagement, expressions that may well be hateful or maligning but are not therefore outside of or beyond politics. Instead, they are linked to other inter-actions and possibilities as part of an extended network of political meaning and opportunity, subjugation and interpellation, cooptation and resistance." (Dean 2001, 253)

Buchstein (2002) identified several points of argument where normative claims ran up against the reality of Internet technologies. First, because Internet technologies involve a monetary cost – either the purchase of the computer, or of connectivity, or of the education and the knowledge to make use of these tools – they are distributed unevenly. Rather than stripping away social hierarchies, then, the Internet replicates them, even at the point of access. As Benjamin Barber argued a little later:

“Because many people think the answer to the digital divide is the hundred-dollar computer, we must remind them that literacy is also a prerequisite to technological access... to buy fifteen years of education in order to be able to use a computer sensibly costs a lifetime of wealth.” (Barber 2006, 4).

Second, Buchstein noted that private companies were increasingly controlling Internet architecture and applications – a process made inevitable by Bill
Clinton’s Federal Communication’s Act in 1996, which privatised emergent Internet technologies and left oversight and regulation to the market (Barber 2006). Buchstein imagined that this would “change the character of the Internet, making it an instrument of further commercialization.” At the same time, the migration of ever more communication practices online would create a new panopticon – a state of constant surveillance – and “increase government agencies’ and capitalist companies’ capacity for control” (Buchstein 2002, 250).

There were other issues too, less concrete perhaps, but in some ways more worrisome. Cyber utopians argued that the Internet enabled citizens to access all the information they required on any subject – anyone could publish; anyone could access that published content – but the flip-side of this was that there was an enormous amount of information to process. In such circumstances, how can any one citizen read it all, verify it all, process it and make use of it in the pursuit of reason? Furthermore, the speed at which the information circulated was seemingly unprecedented, and the concern was that it made deliberation – the process at the very heart of communicative democracy – impossible.

“Above all, communication on the Internet is fast… democracy is a process based on deliberateness. It is about slow and prudent movement… Democracy is not just about collective decision making. It is about deliberate collective decision making. Deliberation is absolutely essential. The difference between the tyranny of the majority and real democracy is deliberation.” (Barber 2006, 7).
Human beings have only so much conscious processing power, and such ubiquity and speed could cause “information overload” (Buchstein 2002, 253). Furthermore, citizens weren’t actually part of this information circulation, they were sitting in front of their computer screens, detached from it both physically and, it was assumed, conceptually too. In such circumstances, could citizens be trusted to engage, listen, deliberate and respond in a normative fashion? These are questions that are taken up elsewhere in this thesis, as both digital dualism and the logic of network time are central to the conceptual framework.

In terms of democracy, then, the technology is ambiguous (Barber 2002). Similarly, the effect of any media logic is also ambiguous. Rather than eliminating media gatekeepers, Hindeman (2010, 13) argues that the Internet shifts the “exclusivity” of these roles “from the production to the filtering of political information.” For Hindeman, the infrastructure of the Internet plays a crucial role in enabling some sorts of political action and constraining others. These contrasting dynamics are neither unambiguously positive nor negative: certainly they are not inherently democratising. He highlights hyperlink technology and the pattern of linkages between websites that promotes some sites towards the top of search engine rankings and relegates others into general obscurity.

As anyone who has started a blog on a whim will testify, there is a huge difference between speaking and being heard. “On the Internet, the link between the two is weaker than it is in almost any other area of political life.” According to Geiger (2009) “hierarchies of popularity do exist, but the common conception is that a relatively unpopular blog can... be transported up the chain to the most popular blogs – if and only if it interests enough bloggers in the middle.”
However, for Hindeman, the techno-social reality is that these middle ranking blogs simply do not exist in anything like the necessary numbers. He “finds powerful hierarchies shaping a medium that continues to be celebrated for its openness” (Hindeman 2010, 18). Above all else, he argues, these techno-social relationships are complex and poorly understood, by citizens and by scholars too.

Turner (2006, 158) also cautioned that “there is no necessary connection between, on the one hand, a broadening demographic in the pattern of access to media representation and, on the other, a democratic politics.” Greater diversity does not necessarily produce democracy, partly because symbolic hierarchies persist and media power remains concentrated in institutions and media industries. While YouTube may enable the publication and dissemination of user-generated content, it also streams commercial product, re-asserting the primacy of this content (while, at the same time, benefitting from what is, essentially, vast amounts of free labour) (Turner 2010).

Habermas thought that rather than strengthening the public sphere, “the rise of millions of fragmented chat rooms across the world tend instead to lead to the fragmentation of large but politically-focused mass audiences into a huge number of isolated issue publics” (Habermas 2006, 423). It has been suggested that view betrays a fundamental lack of understanding about Internet technologies and the people that use them: “participants in online communities are complex... to speak of them as fragmented and isolated ignores or rejects the reality that especially online, individual publics are multiply connected” (Bruns 2007). Further, as Geiger (2009) notes, it is a view that overlooks specific
techno-complexities of the Internet. “Habermasians should not fear fragmentation, but instead integration: the blogosphere as a public sphere is constructed and unified not by ideal discourse, but algorithms.” In other words, then, the technology that makes a discursive public sphere possible is precisely the technology that can undermine it.

Dean’s principal complaint was that Internet technologies do not enable rational and deliberative exchanges in the way that the normative public sphere requires. In one sense, then, it is a complaint about the structural and environmental dynamics of the communicative space, but in another it is a very specific critique of the type of communication that takes places via Internet technologies. The broader question of whether or not Twitter is respectful, reasoned, deliberative and rational, rests first and foremost on whether tweets – and the meanings that users encode into tweets – are those things. In other words, the appropriateness of the normative assumption is judged according to the communicated content. Certainly, this is an abstraction but, as Dean argues, it is an abstraction that is at the heart of the public sphere and, it must be said, a necessary one to restrict (and make possible) an analysis of Internet technologies.

The interweaving of technology, computer code and socio-democratic practices brings the discussion full circle back to software studies and bloated technology (Rieder 2012). It articulates, quite clearly, that to better understand the relationship between the Internet and democracy, researchers must first explore the complex interactions between code, devices, their users and communicative practices. In terms of normative deliberative models, that means exploring in detail the technologies themselves, the communication that takes place via the
technologies, the structural and material distribution of resources across the public sphere and so on. It is a multifaceted process, and far too great an undertaking for one thesis. The focus in this thesis is restricted to communication on Twitter – to describing content and the dynamics of content flow.
CHAPTER FOUR

CONCEPTUAL FRAMEWORK

INTRODUCTION

During the 2011 UK riots, a complex but necessary social debate was reduced to a polarised and politicised language war by mainstream media channels (Kelsey 2012). Some authors have claimed that this behaviour is symptomatic of a commercialised mass media (McChesney 2013, Lewis 2005, Kellner 2004), in which the pursuit of profit and influence tends to override any editorial or ideological commitment to responsible, educational public discourse. It has been suggested that digital media channels could restore the integrity of mediated discourse (Dutton and Dubois 2015, Birchall and Coleman 2015, Shirky 2011, Diamond 2010). The UK is a modern digital society with high numbers of social media users – and channels including Facebook and Twitter were actively used to discuss the riots (Ofcom 2015). Even so, parliament reduced rioting to something “criminal” and “simple” and the state responded with extraordinary judicial sessions and unprecedented punishments (Beckford 2012).

There is a suspicion that cyber-utopians have overestimated the restorative potential of digital technologies. Either these media do not support the sort of responsible and productive discussions that some have claimed, or they do so in such a way that it does not much influence (or improve) established democratic
procedures and institutions. In order to explore these suspicions, two chapters were dedicated to reviewing and critiquing existing literature.

The first literature review chapter defined and described digital media, both in technological terms, but also conceptually. It found that, historically, a lack of specificity has been an issue for Internet studies, perhaps because the Internet is such a complex assemblage of multi-layered networked architectures, software and individual communication media. Consequently, the aim was to establish the Internet as an object to be studied, with attributes that afford behaviours. It argued at length that technological specificity is a necessary precursor to any description of affordances and it introduced the concept of media logics to help categorise technologies with similar affordances. According to the proponents of that theory, the shared affordances of certain digital media technologies (social media) shape logics that have “changed the conditions and rules of social interaction” (van Dijck and Poell 2013, 1).

The chapter concluded that social media logics can act as a conduit between robust technological descriptions and social theory: they define the “processes, principles, and practices through which these platforms process information, news, and communication, and more generally, how they channel social traffic” (van Dijck and Poell 2013, 5). The second review chapter argued that a lack of precision in this framing has undermined some digital-political theory, but identified several elements of social media logic (process, principles and practices) through which digital media might influence democratic practices.

These elements are summarised in table 1.
<table>
<thead>
<tr>
<th>Logic</th>
<th>Outcomes</th>
<th>Mechanism</th>
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<tr>
<td>Information access</td>
<td>• Freedom of ideas&lt;br&gt;• Greater pluralism&lt;br&gt;• Increased access/voice</td>
<td>Communicative democracy</td>
</tr>
<tr>
<td>Information overload</td>
<td>• Deliberation impossible</td>
<td>Communicative democracy</td>
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<td>Digital divides</td>
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<td>Residual hegemonies</td>
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<td>Digital dualism</td>
<td>• Separation of online/offline politics&lt;br&gt;• Digital activism does not translate to social outcomes</td>
<td>Communicative democracy</td>
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<td>Networked politics</td>
<td>• Connective action&lt;br&gt;• Weakening of hierarchies&lt;br&gt;• Digital activism</td>
<td>Action-orientated democracy</td>
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Table 1: a summary of the major interpretations of social media logic relevant to democratic theory
Different interpretations of social media logic emphasise either the networking affordances of digital media or the communicational affordances. This difference in emphasis inevitably invokes a different interpretation of democracy. Either democracy is conceived in terms of organisational and action-orientated outcomes (e.g. connective action), or it is a communicational act – a process of information sharing, value assignment and discursive legitimacy. This conceptual framework chapter will focus on developing a rigorous account of how the communicational affordances of digital media can influence a communicational interpretation of democracy. Partly, this is because there remain conceptual issues with a strict network-structural theorisation of digital media. Moreover, the focus on the UK riots demands a communicational approach: the central critical concern is how state-centric social actions claimed legitimacy through political discussion in the public sphere.

Theorising Twitter as a Communication System

In simple terms, this conceptual framework must establish how best to study the contribution that Twitter made to public-political discourse during the UK riots, given the normative expectations of communicational democracy. There is a more fundamental conceptual case for adopting a communicational approach to this conceptual framework: it locates these efforts within a tradition of cultural research and current academic efforts to understand modernity. It is beyond the scope of this thesis to theorise modernity; it will suffice to say that representation, distanciation and mediation are central to many theorists’
accounts of modern social reality (James 2006, Steger 2005, Appadurai 1996, 1991, Giddens 1990). With that in mind, it is clear that the Internet is centrally implicated in globalisation processes, in cultural practice, in national and international imaginaries and, indeed, in on-going attempts to rationalise and to theorise these phenomena.

According to Castells (1996), the development of networked computing tools during the later half of the twentieth century heralded a communication revolution that, in turn, reconfigured all aspects of the human social experience. The changes:

“could only be effectuated because they have at their disposal the global networking capacity provided by digital communication technologies and information systems... This is, in fact, what separates, in size, speed, and complexity, the current process of globalization from previous forms of globalization in earlier historical periods.” (Castells 2009, 24-25).

James (2006, 22) argues that these systems are extensions of “traditional global connection” and he cautions against any attempt to “dehisricize the process of global extension.” This, perhaps, is an additional risk of over-emphasising the networking logics of digital media: it exaggerates the discontinuity of modern representational systems. Internet technologies may destabilise communicative representation, but reality – the negotiation of presence and absence – has been mediated since the evolution of language and writing. By emphasising the communicational affordances of digital media, it becomes possible to draw on a rich and detailed body of theoretical work.
For instance, in what is now a canonical essay, Appadurai (1991, 295) was concerned with the developing “tension between cultural homogenization and cultural heterogenization.” The prevailing wisdom among globalisation scholars was that global interconnection principally meant the advance of western cultural hegemony, via westernisation, “McDonaldization” and commoditisation (Ritzer 1983). In contrast, Appadurai wanted to emphasise that these forces are “indigenized” when they are brought into new societies. “The new global economy has to be understood as a complex, overlapping, disjunctive order, which cannot any longer be understood in terms of existing center-periphery models (even those that might account for multiple centers and peripheries).” (Appadurai 1991, 296).

As an alternative to these centre-periphery models, Appadurai proposed five dimensions of global-cultural flow. He gave each one the suffix scape to indicate that they were “deeply perspectival constructs”; so much so that he explicitly described these scapes as “imagined worlds”. The five scapes were: the ethnoscape, the mediascape, the technoscape, the finanscape and the ideoscape. The finanscape, for instance, maps pretty much directly on to the economic dimension. The ethnoscape refers to the global movement of people as tourists, migrants and refugees, and the disparate and diverse communities that these diasporas create. The technoscape, quite broadly, describes the global configuration of all technologies, including industrial (steel manufacturing), computational and so on. According to Appadurai, the distribution of these technologies is increasingly driven by capital flows, political relationships and the availability of high-skill/low-wage labour — a complex, causative matrix that
frequently confounds attempts to study it.

The mediascape and the ideoscape are deeply associated with each other: they are “closely related landscapes of images.” (Appadurai 1991, 298). Essentially, the mediascape describes the private and public electronic media able to produce and disseminate information to local, national and transnational audiences. To quote Appadurai at some length:

"What is most important about these mediascapes is that they provide (especially in their, television, film and cassette forms) large and complex repertoires of images, narratives and ‘ethnoscapes’ to viewers throughout the world, in which the world of commodities and the world of ‘news’ and politics are profoundly mixed. What this means is that many audiences throughout the world experience the media themselves as a complicated and interconnected repertoire of print, celluloid, electronic screens and billboards. The lines between the ‘realistic’ and the fictional landscapes they see are blurred, so that the further away these audiences are from the direct experiences of metropolitan life, the more likely they are to construct ‘imagined worlds’ which are chimerical, aesthetic, even fantastic objects, particularly if assessed by the criteria of some other perspective, some other ‘imagined world’.” (Appadurai 1991, 299).

The ideoscape consists of “concatenations of images” but those images are overtly of a political nature and are frequently either state-driven or driven by parties attempting to capture state power. According to Appadurai, the ideoscape carries “master narratives” such as the Enlightenment, which was “constructed with a certain internal logic and presupposed a certain relationship
between reading, representation and the public sphere” (Appadurai 1991, 299). The destabilising — or loosening — of this particular narrative since the nineteenth century, associated with a concurrent destabilising of Euro-American hegemony, has created a global politics defined by micro-struggles between different nation states, political cultures and ‘keywords’ (Appadurai 1991, 299). In Appadurai’s account, then, the politics of the ideoscape assumes something akin to language wars (Lewis 2005), in which keywords battle for meaning and prominence in a mediated public sphere. Meta narratives, political posturing, and struggles for state-legitimised power are contested in a densely populated mediasphere where meaning-making is subject to disjunctive interactions between producers, audiences, governments and culture.

So, while the mass media create and disseminate information that then must be selected and filtered by the audience, influential socio-political and corporate forces project ideologies — their filtering structures and frameworks — that compete for primacy in the new global mediasphere. As Lewis writes:

“the transformation of the world into a global media sphere is the result of a dynamic interaction between macro processes (history, economy, technology, politics and modes of social organization) and the profoundly intimate and intricate microcosms of a person’s life — the realm of the individual subject.” (Lewis 2008, 3-4).

The Internet is increasingly a medium where this cultural and symbolic exchange takes place. As such, the affordances of Internet technologies have profound implications for the construction and the conceptualisation of social reality.
In the mid-1990s the MIT psychologist and anthropologist Sherry Turkle published excerpts from her book *Life on the Screen* in the popular technology magazine *Wired*. Turkle discussed her postmodern approach to analysing the Internet and its effect on users, and described a liminal moment – a transition from “a modernist culture of calculation toward a postmodernist culture of simulation”. In this simulated world, humans were able to experiment with different identities, playing with surface representations of themselves to suit different contexts, and discovering that identity wasn’t necessarily fixed, but that it could be variable and fluid. The Internet, still a young and exploratory technology, appeared to offer “laboratories for the construction of identity” (Turkle 1996).

This analysis seemed to endorse the Internet as a place for excitement, exploration and liberation. Following Lacan, Turkle perceived that “in its virtual reality, we consciously construct ourselves” (Turkle 1995). In her more recent writing, however, the Internet is a distracting and isolating technology. She writes:

“the heroic story is not the whole story. In virtual worlds and computer games, people are flattened into personae. On social networks, people are reduced to their profiles... We are increasingly connected to each other but oddly more alone: in intimacy, new solitudes.” (Turkle 2011, 19).

The promise of exploration and communion has been replaced by a warning of distraction and isolation. “Our new devices provide space for the emergence of a new state of the self, itself, split between the screen and the physical, wired into existence through technology.” (Turkle 2011, 16). In 1996, Turkle thought that
the Internet's simulated virtual reality made real the conscious construction of the self – that is the ability to explore and to discover different interpretations of the self online, and to occupy multiple identities, variably and fluidly. In 2011, however, that promise had become a distraction, a false dogma, which served to deny the authentic or real self.

In Turkle’s terms, computing is “the precedence of surface over depth, of simulation over real, of play over seriousness” (McCorduck 1996). In her account of multiple selves being constructed and negotiated online, there remains a fixed, modernist sense of real self in the physical world.

The central critique of this digital dualist perspective is that it imposes an artificial distinction on two types of reality and ties that distinction to Internet technologies (Jurgenson 2011a). Digital dualism is the idea that the internet exists in one place but not another, or that it constitutes a ‘reality’ distinct from our prevailing reality – what we might call the offline, physical or natural world. “Digital dualists believe that the digital world is ‘virtual’ and the physical world ‘real’” (Jurgenson 2011b).

Central to this debate are issues of representation and symbolism: the perceived separation between the digital sign and real referent. Understanding this issue of separation is central to understanding the relationship between Internet communication and democracy (and, indeed, the relationship between the individual and the state). It is directly relevant to the politics of the UK riots, of course. In the cases of Perry Sutcliffe-Keenan and Jordan Blackshaw, the state argued that creating a riot Facebook page is exactly the same as inciting rioting in the physical world, but in their defences, neither Sutcliffe-Keenan nor
Blackshaw accepted this was the case. Much of the commentary on these cases struggled to reconcile these digital crimes with the severity of the punishments (Travis 2011).

The idea that Internet democracy is somehow separate, or less real, than the physical has profound implications for an analysis of riot discourse. Jean Baudrillard wrote:

“it would be interesting to see whether the repressive apparatus would not react more violently to a simulated holdup than to a real holdup. Because the latter does nothing but disturb the order of things, the right to property, whereas the former attacks the reality principle itself. Transgression and violence are less serious because they only contest the distribution of the real. Simulation is infinitely more dangerous because it always leaves open to supposition that, above and beyond its object, law and order themselves might be nothing but simulation.” (Baudrillard 1981/1994, 20).

These concerns are made explicit in the logical elements described in table 1. Some political theorists worry that digital democracy, if it occurs, will forever be detached from the physical-social institutions through which state-centric democracy is practised (Buchstein 2002). Others point to the low-effort, low-return practices of digital democracy – so called clicktivism or slacktivism (Gladwell 2010, Granovetter 1973). The point is that these concerns are a response to the communicational affordances of digital technologies, just as much as the logics that emphasise information liberation and overload. The aim of this conceptual framework, then, is to establish how software constructs
affordances that disturb or disrupt established processes of cultural and symbolic exchange. In terms of the globalised mediasphere, that translates into a study of representational flows.

The discussion so far has touched on some complex ideas, but it has established that the communicational logics unite around issues of representation, presence-absence and cultural flow. These are issues for all communication technologies, but there is a profound sense that the Internet (a manifestation of late-age modernity) is responsible for new types of communicative exchange, new representational dynamics and new forms of simulation. Representational dynamics are fundamental to the organisational logics of digital democracy, as well as the communicational ones. Either the organisational logics must assume a linear, effects model of communication, or they must first resolve these representational complexities.

The theory being advanced is that the dynamics of these representational flows will be constructed partly by the affordances of technologies used to facilitate the flows. This emphasis on the dynamics of flow is supported by a general agreement among globalisation theorists that the nature of change in modernity (that is, its rate, intensity and reach) is just as significant as the type of change being described. “The dynamism of modernity derives from the separation of time and space and their recombination in forms which permit the precise time-space ‘zoning’ of social life” (Giddens 1990, 16-17).

In other words, a conceptualisation (and empirical analysis) of Twitter-enabled discourse during the UK riots, must engage with the temporal and spatial dynamics of that discourse. Not only do time and space play a crucial role in
theories of techno-mediated modernity, the communicational logics of digital democracy explicitly invoke the temporality (information overload) and spatiality (information liberation, dualism) of digital flows.

THEORISING DIGITAL TIME-SPACE

David Harvey has argued that modern media and communication technologies disturb the relationship between presence and absence in profound ways. Mass television ownership, for instance, is responsible for “collapsing the world’s space into a series of images on a television screen” (Harvey 1990, 292). For Harvey, simultaneity is contingent with time-space compression – ever present historically, but increasingly intense during the second half of the twentieth century – a process driven by the “accelerating turnover” in material production and the “parallel acceleration in exchange and consumption” (Harvey 1990, 285).

In order to accelerate, time cannot be absolute in a Newtonian sense; it must be relative and experiential. Several theorists have argued that, in the human life-world, time and space are produced socially (Schmid 2008, Lefebvre 1991). It becomes possible to conceive different timescapes (Adam 1998), temporal-flows particular to certain modes of existence and experience. Castells (2010) refers to biological time and glacial time; Hassan (2009) defines clock time, which set the tempo for industrialisation and “began to supplant the eons-old experiential (and diverse) relationships that humans had with time”. Indeed, “through the convergence of the clock, industrialization and modernity, time was transformed from a mode of subjective experience into an abstract value.” (Hassan 2009, 55-
For Castells (1996, xxxi) too, “major social changes are ultimately characterized by a transformation of space and time in the human experience.” Both time and space are reconfigured according to the structural dynamics of the network. “The key spatial feature of the network society is the networked connection between the local and the global.” (Castells 1996, xxxv).

“Micro-electronics-based digital communication, advanced telecommunication networks, information systems, and computerized transformation... transformed the spatiality of social interaction by introducing simultaneity, or any chosen timeframe, in social practices, regardless of the actors engaged in the communication process”. (Castells 1996, xxxii).

He coins the term space of flows to describe this simultaneity of social practices regardless of distance, contrasting it against a space of contiguity, in which communication requires physical proximity (a theory in which cities become communication systems). Physical and electronic networks coexist, so that information flows in local (physical) and distant (electronic) networks simultaneously and interchangeably. For instance, Facebook seems to permit close personal relationships to thrive at distance; financial exchanges are pre-programmed to proceed on foreign exchanges, according to conditions in distant markets.

Timeless time is the “systematic perturbation in the sequential order of the social practices” performed in a given context (Castells 1996, xli). Those
sequential orders may previously have been dictated by biological or natural rhythms (biological time), by industrialisation and capitalism and the mechanisation and organisation of time (clock time), or even by long-scale imaginings of an evolutionary future and past (glacial) time. Timeless time appears to mean the attempted denial of these timescapes in favour of a technologically-enabled annihilation of time: multi-tasking, flexible working, instant messaging, hyper-speed financial transfers, electronic instant wars and so on. The underlying claim is that socially constructed time is increasingly abstracted and variably collapsing towards simultaneity; that advances in technology enable this abstraction; and that there may be conflict between this automated immediacy and more natural, evolutionary timescales.

The emphasis on simultaneity is crucial for the intra-referential production of time and space, but it is also key to understanding how and why time-space is considered so central to modernity and to its perceived discontinuities. The modern age seems to be characterised by an acceleration in this production process, and the collapse of space through time, or the simultaneity of experience.

Paul Virilio has argued that acceleration lies at the heart of modern social organisation and transformation. Dromology, that is the “relentless logic” of speed, underwrites measures of urban space and social progress, so that, in addition to a political economy of wealth, we must also acknowledge that there is a political economy of speed (Armitage 1999). In Virilio’s telling, this is a military logic also, the creep of hyper-fast warfare into all corners of social governance and architectural planning: “Everything in this new warfare becomes a question
of time won by man over the fatal projectiles toward which his path throws him.” (Virilio 1977, 46). The logic is inescapable, hardwired almost into social forms and political institutions. “Governance by speed (by states or otherwise) is logistics, and logistics, like the oceanic vectors from which it is born, is omnidirectional.” (Bratton 2006, 12).

Robert Hassan suggests that acceleration is linked to the decline of Fordist industrial models and a “logic of scale” that “took its time from the rhythms of modernity” and was measured by the clock (Hassan 2009, 20). In the modern network society that spatial (scalar) logic has been superseded by a temporal-neoliberalism – so that the “increasing rapidity at which we produce, consume and distribute commodities is now the core process, the central factor in the ‘economy of speed’.” (Hassan 2009, 21). Within this economy, speed is fetishised and technology is implicitly a part of this dynamic.

“...In our culture of speed, almost every product or service emanating from the economy of speed is now promoted as faster and more efficient with the corollary being that we will become faster and more efficient, more in tune and, somehow, lead better-quality lives.” (Hassan 2009, 26).

This is especially significant for the conceptual framework because of the effect that it may or may not have on meaning-making. Harvey considered volatility a principal effect of time-space compression.

“Time-space compression always exacts its toll on our capacity to grapple with the realities unfolding around us. Under stress, for example, it becomes harder and harder to react accurately to events... The difference
this time is that there is not even time to agonize. And the problems are not confined to the realms of political or military decision-making. For the world’s financial markets are on the boil in ways that make a snap judgement here, an unconsidered word there, and a gut reaction somewhere else the slip that can unravel the whole skein of fictitious capital formation and of interdependency.” (Harvey 1990, 306).

The result of all this accelerated transfer is a temporal and spatial experience shaped by the dynamics of communication technology. Micro-electronic communication technologies construct hyper-fast, polymorphic and networked temporalities that have a self-propelling logic. Though there may be local variations – real time cultures – the temporalities of different communication software (increasingly written with the neoliberal urgency of the frantic entrepreneur) strain to synchronise with its pace.

This networked temporality – virtual time in Castells’ terminology – exaggerates some effects and flattens others:

“the mixing of times in the media, within the same channel of communication and at the choice of the viewer/interactor, creates a temporal collage, where not only genres are mixed, but their timing becomes synchronous in a flat horizon, with no beginning, no end, no future. The timelessness of multimedia’s hypertext is a decisive feature of our culture, shaping the minds of and memories of children educated in the new cultural context.” (Castells 1996, 492).

Internet temporality – virtual time – is an amplification of temporal trends that
have long been implicit in technological and social development. There are two critical characteristics of this network time that require closer inspection. The first is the collapse into simultaneity – the realisation of so called ‘real time’. The second is the uncertain and (almost certainly) uneven temporalities that flow within the overarching concept of network time. In effect, network time requires some unpacking – it is a catchall term for the relative ‘flow speeds’ enabled by different digital technologies.

The idea of real time has been associated with temporal studies of the Internet since the mid-nineties (Weltevrede et al. 2014). Real time is generally meant to refer to communicative simultaneity, but it is clear that there is both variation and nuance in its usage. As Weltevrede et al. (2014, 128) write, real time is “not a concern of immediacy – which is literally impossible – but a question of speed and the organization of content in relation to time.” Thus, real time is associated with the modern web, where Asynchronous JavaScript and XML (AJAX) permits web programs to make server calls and to update content without user prompts. It was less a feature of early evolutions, where content resided in static HTML pages that had to be fetched by a browser.

As such, the notion of real time is entangled with the experience of information flows – technologies push content at users, sometimes at speeds and in volumes that defy cognitive processes (information overload). It is precisely the real-timeness of digital technologies that some political theorists find problematic.

Absolute immediacy may be literally impossible, but the speed of communication starts to challenge social, conceptual and experiential notions of temporal delay.
“Of course, the ‘real-time’ itself is a mediated construct, created in software and managed through careful processing and presentational cues for the user. After all, the mere passing through computation creates some latency, or data lag, which is different for each system, that marks it as already in the past before the user receives it as a feedback loop. But this latency in real-time response, which may be micro or milliseconds, may also be disguised from the user through various forms of design transitions, computational techniques or anticipatory processing which makes the experience of real-time feel as if it is truly real-time.” (Berry 2011).

The observation that Internet technologies will refresh and update content independent of their users, and that this updating proceeds at enormous (but not uniform) speeds and in volumes beyond comprehension, hints at an informational environment that is both incredibly fast, clearly, but also, in some respects, timeless. This is the key point for Castells and his concept of timeless time. Though the dominant logic may be acceleration, collection and processing on such a vast scale sucks and assembles different temporalities into informational flows, creating “a ‘timeless time’ or a ‘non-time’ without past and without duration” (Weltevrede et al. 2014, 129).

With different software platforms enabling the flow of information streams, each with a distinct temporality, rhythm or update cycle, the networked mediasphere contains “a series of distinctive ‘real-time cultures’” (Weltevrede et al. 2014, 137). These real-time cultures are not fixed – there is no determinism – but there is an overarching logic of acceleration that has profound implications for
meaning-making and for established models of social constructionism.

Ultimately, to focus on communicational logics is to engage with this reimagining of digital time-space. In terms of the riots and the research focus, Twitter constructs a distinctive time culture – Twitter time – that may or may not be compatible with a normative framing of deliberative democracy. In this reckoning, establishing Twitter (finally) as an objective for study involves identifying and describing the temporalities of the information flows that Twitter supports.

**Theorising discourse and meaning-making**

The fundamental difference between the organisational and communicational logics is the role of the individual subject or, more prosaically, the subjective representation of the individual subject within the networked system. An organisational logic prioritises the network structure over individual nodes; a communicational logic prioritises the human minds of individual nodes, and is particularly interested in the messages transmitted between those minds. This difference in emphasis has profound implications for the explanatory models by which democracy is constructed.

Lewis (2008, 4-5) observes that societies “must communicate and commune through the formation of overlapping or contiguous social imaginings – the sense of participating in ‘the group’ through the mutual and interdependent construction of meaning”. It is the relationship between mutual and
interdependent meanings – and how the negotiation of these positions can be democratic – that occupies this section of the conceptual framework.

Deliberative democracy relies on a rarefied form of discourse. Individual political positions must be shared, disagreements must be resolved and consensus reached in such a way that this “interdependent construction of meaning” achieves democratic legitimacy. Discourse, whether deliberative or not, is the negotiation and collectivisation of individual meanings, represented through language, which in the case of Twitter is transcribed into text in the form of tweets. As such, the conceptual framework must include a textual framework for understanding (and evaluating) how individual tweets can represent political ideas.

The individual and collective construction of meaning is the central dynamic in a communication interpretation of democracy. If tweets are textual representations of meaning, then this raises an obvious question: what are meanings? Furthermore, what is it exactly that is being communicated on Twitter? Do meanings have any sort of material or representational existence, something that can be observed and studied? Assuming that empirical observation is achievable, will it be possible to differentiate between one type of meaning construction (meaning-making) and another, or to say that one is democratic and the other is not?

Sociology has long wrestled with the processes that somehow coordinate independent minds into collective social behaviour. Meaning is established as a fundamental concept in Weber’s social analysis; he uses it to differentiate between reactive behaviours (in which he had no interest) and social action,
which involves thought processes (the attachment of subjective meaning).

Sociology is: “a science concerning itself with the interpretive understanding of
social action and thereby with a causal explanation of its course and
consequences.” (Weber 1968, 4).

Durkheim also grappled with the problem of social imaginings. He divided his
social facts into two types: material and nonmaterial. Material social facts are
plainly visible and include things like legal codes, technology, bureaucracies and
so on. Nonmaterial social facts have no physical objectivity: they are cultural
values, norms, morals and prevailing knowledge systems. Individuals are bound
by social facts but social facts must somehow exist independent of individuals,
what Durkheim called collective consciousness:

“The totality of beliefs and sentiments common to average citizens of the
same society forms a determinate system which has its own life... It is,
thus, an entirely different thing from particular consciences, although it
can be realized only through them.”

Beliefs and sentiments are subjective – or, in other words, held solely in the
minds of individuals – but, for Durkheim, they also can be held commonly across
groups. Once a belief or a sentiment is shared across a group, however, it “forms
a determinate system which has its own life”. Somehow meaning escapes the
individual subject and obtains an objective and collective existence all of its own.
It is hard to know where this objective existence might be realised, however, or
how a sociologist should ever gain access to it, because individual minds, the
“particular consciences”, are required to translate (or realise) meaning into
social action. As Ritzer (2012, 126) suggests, Durkheim is “interested in mental
processes, but this is not the same as psychologists’ interest in the mind, personality, and so forth.”

Durkheim preferred the term *collective representations* in his later work. In many respects, the two concepts are very similar, but representation is defined more narrowly than conscience, and as a result it is easier to identify examples. Broadly speaking, a representation is an idea or a concept, and Durkheim provides examples including symbols (often religious), icons, myths and legends. Clearly meanings are attached to these material symbols, which can often be identified and studied empirically and historically. In addition, Durkheim coined the phrase *social currents* to refer to those nonmaterial social facts where there is no material or organisational representation of the collective conscience. In other words, social currents are:

“sets of meanings that are shared by the members of a collectivity. As such, they cannot be explained in terms of the mind of any given individual. Individuals certainly contribute to social currents, but by becoming social something new develops through their interactions.” (Ritzer 2012, 83).

Individually-held meanings, when shared, create social currents independent of any single individual mind, with coercive force across social groups. In the simplest possible terms, this is the logic by which Twitter might influence social processes, including processes specific to democratic decision-making. It affects the sharing of meanings, either by enabling meanings to be shared with some individuals and not others (the organisational logic) or by shaping the act of sharing itself.
Meaning is an organising force within society. The sharing and making of meanings, then, is exceptionally important but clearly complex. Language, arguably, is the primary and the most influential variable in this equation. As the social philosopher John Searle writes: “You cannot begin to understand what is special about human society, how it differs from primate societies and other animal societies, unless you first understand some special features of human language.” (Searle 2006, 14). For Durkheim, language was the archetypal social fact: common across society, independent of individuals, coercive and only explicable by other social facts. Language is a thing (Ritzer 2012, 78) – it has an epistemologically-objective existence despite the fact that human beliefs and attitudes are an integral part of that existence. Language can be coercive of individuals to the extent that the syntax and lexicon of individual languages permit or restrict certain types of expression, and realisation that language can permit or deny certain kinds of meaning lies at the heart of structuralist sociology and language theory. Language creates a relational system for making meaning in society. In doing so, it underwrites the translation of individual subjectivity into collective representations and, ultimately, the macro organisational structures that interest sociologists. “Language is the presupposition of the existence of other social institutions in a way that they are not the presupposition of language.” (Searle 2006, 14).

Meaning-making is complex and context-specific, however. In his later work, Wittgenstein wrote of language games referring to the interplay of imprecise meanings that can attach to signs within a semantic system (Wittgenstein 1922). While de Saussure imagined a universal system for the formation, organisation
and operation of language, its manifestation was culturally specific: “The culture and its needs determine the categories of meaning.” (Lewis 2008, 112). The langue, to use de Saussure’s term, “is inevitably bound to the social and cultural context in which the language parole (specific utterance) is operating.” (ibid, 113).

In essence, the issue with a sociology centred on language (as a social fact) is that human communication is invariably more complex and more interactive than universalising logic can allow. This complexity was elucidated by Roland Barthes, who argued that meaning accumulates over and above structuralist signification through a process he called connotation – essentially the context-specific layering of meaning on top of an original association (Barthes 1988). What this does, of course, while retaining the literal logic of structuralism, is allow for ideological, political and psychological aspects of meaning-making (Lewis 2008, 115). This layering has been framed as the struggle to signify (Lewis 2000, Hall 1982), a phrase used already in this thesis and a concept that is central to this understanding of how meaning is shared by sending tweets on Twitter.

Language wars are the ideological, emotional and psychological struggles to attach meaning to signifiers (Lewis 2005, Turner 1996). Different meanings struggle for primacy in the mediasphere as social actors try to frame events in terms of their preferences and prejudices. What does this struggle look like? The effects model treated language as a given and the process of communication as a simple matter of message transmission, and so a message (and its effect on an audience) could be simply measured by the application of objective, statistical
methods. Language wars demand a far more nuanced interpretation of the communicative process, however.

Stuart Hall established the limits of the effects model when he portrayed television as a meaningful discourse between producers and audiences situated in independent meaning structures. As Hall contends, the “degree of reciprocity between encoding and decoding moments... is not given but constructed.” (Hall 1980, 136). In other words, communication is more a process of interpretation (and transformation) than transmission. “What are called distortions or ‘misunderstandings’ arise precisely from the lack of equivalence between the two sides in the communicative exchange” (Hall 1980, 131). The struggle to signify is thus a struggle to reproduce constructed positions in such a way as to influence the decoding moment – to impose one meaning structure upon another. According to one perspective, rioting is “wanton vandalism and looting” (Hansard 2011, 1057), according to another it is an explicable form of social protest. The difference in meaning between these two positions legitimises very different types of social action.

This interpretation can be formalised for the study of meaning-making through Twitter. As part of an extended effort to frame meaningfulness (and culture) in terms of evolutionary and system sciences, Potts and Hartley (2014) theorise meaning in such a way as to make the communication and resolution of meanings a dynamic force in the shaping and replication of group cultures. Meaning is the system of mappings that orientate language (the sign system) to culture; culture shapes how humans form groups because culture shapes how humans share and retain meanings. The struggle to signify is thus the struggle to
control this mapping system, to assert a meaning structure on to a sign and, thus, to influence how humans form groups for social action.

Communication enables meaning-making, which is the struggle to assign value to different mapping systems within culture (Hartley and Potts 2014). This interpretation is potentially very useful for an empirical study of Twitter because it suggests that it may be possible to observe the struggle to signify within communication channels. Within a cultural system (the UK riot public, for instance) there exists a multitude of possible mapping systems – many different ways of orientating riot signs within a wider meaning structure (that is, within ideological, emotional and psychological cultures). One way of conceptualising this potential is to recognise the many potential mapping systems that exist vis-à-vis the riots – the riots can mean criminality, protest, hedonism, disillusion, disenfranchisement. All these different mapping systems have the potential to become meaningful – that is, to shape the aggregation of individuals into groups for social action – but not all will do so. In theory, at least, it is through communication that human minds decide how meaning should be assigned (or denied) to those different interpretations. This process, the promotion of some mapping systems over others, is what shapes meaningfulness within groups and what enervates social action.

In effect, then, meaning is partly an issue of attention – the conscious awareness of one mapping system over another. To investigate how meaning-making works through Twitter is to investigate how the technology affords its users to promote certain mapping systems and to relegate others. However, this is only part of the equation. Meaning-making is not simply a process of promoting some signs over
others because the signs themselves can change: the internal mapping system itself can be reconfigured. The instability of the word is a crucial concept in post-structural cultural theory and does not require further review here. After all, this point has already been made; the struggle to signify involves both the promotion of some meanings over others and the struggle to shape the internal dynamics of those meanings.

Dan Sperber likened the transmission of meanings between individuals to the spread of disease. A representation, the term preferred by Sperber: "involves a relationship between three terms: an object is a representation of something, for some information processing device." (Sperber, 1985: 76). "The human mind is susceptible to representations, in the way the human organism is susceptible to diseases." (Sperber, 1985: 74). Human populations host a range of representations, some commonly held and persistent, some only experienced briefly by an individual. Representations can spread quickly (fashions are like an epidemic) or slowly (traditions are like an endemic). In order to explain why cultures (that is, shared representations) persist, he argues, first it is necessary to explain why some representations spread more successfully than others, and that means looking at patterns of spread and analysing the transmission process.

Clearly there is considerable overlap between these conceptual domains. Sperber's differentiation between representations (mental and public) is not unlike Durkheim's theories of social currents and the 'collective mind'. The aim here is not to re-theorise this material. However, it is worth noting that for Sperber "an epidemiology of representations is first and foremost a study of their transformations; it considers the reproduction of representations as a
limiting case of transformation.” (Sperber, 1985: 75).

As noted, networked communication technologies like Twitter change a crucial parameter compared to mass media logics: all users have the capacity both to receive and to send messages. If a representation is encoded more often by more people, transmitted, and then received and decoded more often by more people – and if each step in that process involves potential transformation – then the logical conclusion is that the representation should transform more quickly; it should become less stable. The problem with this formulation is that representations will be increasingly in a state of flux, transforming and re-transforming, and it is improbable that representations will ever settle or aggregate in a way that might explain ideology or culturexxvii. However, Claidière and Sperber (2007, 91) noted that “at the macro-level, cultural information is relatively stable within whole populations and often across generations.”

To resolve this paradox, Sperber (1996) introduced the concept of cultural attractors (stable, aggregated representations determined by psychological, genetic and environmental factors); language wars recognises the continuing struggle both between and within meanings (representations) in the media sphere. The question becomes whether a communication channel is more or less likely than another to influence the stability of the transmission process or, in other words, whether it is ever possible for Twitter users to settle upon a social current in such a way as to engender legitimacy.
Theorising Democratic Communication

The literature review established the importance of Jürgen Habermas and his normative models of the public sphere and deliberative discussion. It is necessary now to theorise and to contextualise the expectations of these models, and to ensure that they can support an empirical analysis of the UK riots. It is important to emphasise that the focus in this thesis is on the appropriateness and the productivity of using a close study of software to generate descriptive analytics to frame an exploration of digitally-mediated communication. This thesis does not intend to evaluate (and certainly not validate) a singular model of democracy, normative or otherwise. Nevertheless, a democratic model is required to narrow the scope of the analysis, or else any attempt at evaluating the democratic potential of the communication technology is lost in a debate about how democracy should be defined. In other words, in order to focus analysis on the specific communication-constructing logics of specific digital tools, it is necessary to choose an interpretation of democracy, but doing so does not validate the chosen model absolutely nor deny the existence of other models.

It is relatively straightforward to examine individual blogs, forums or social media streams and to identify departures from the normative model. This thesis aims to develop a situational critique into a broader theory of digital communication. The difference between these two approaches depends on the potential of the communicational logics: the thesis seeks to explore whether an empirical evaluation of communication during the riots suggests (software-enabled) communicative logics that could support deliberation.
“Twitter’s role is evaluated in terms of its communicative affordances and then the enabling potential of these affordances is assessed. Such an approach promises insights that are both more definite (if, for instance, the affordances of Twitter are found to preclude any possibility for normative deliberative discussion) and more widely applicable.” (Pond 2015, 143).

To permit such an approach, it is first necessary to have a detailed description of what normative deliberative communication should look like in the public sphere. Such a description can be used to define under what conditions the struggle to signify proceeds in such a way as to enable democratic outcomes. Put simply, the question is: according to established theory, what are the characteristics of communication in the public sphere necessary for deliberation?

Habermas argued that governments must engage with citizens in deliberative discourse if they are to achieve democratic legitimacy:

“a discourse-theoretic interpretation insists on the fact that democratic will-formation does not draw its legitimating force from a previous convergence of settled ethical convictions, but from both the communicative pre-suppositions that allow the better arguments to come into play in various forms of deliberation, and from the procedures that secure fair bargaining processes.” (Habermas 1994, 4).

In order for communication to be deliberative, participants need to be able to engage in communicative action (Jacobson and Storey 2004, Habermas 1984).
According to Jacobson and Pan (2008, 13), communicative action is possible when discourse satisfies both Habermas’ validity claims and his ideal speech conditions. The validity claims describe “claims regarding the truth, appropriateness, and sincerity of each and every act of speech, even lies”. In other words, in order to pursue productive discourse, communicators must be free and able to ask the following questions of the subject being debated – and of claims about the subject made by their fellow communicators.

They must be able:

1. To question what is comprehensible to them;

2. to determine what is true in light of their individual and shared knowledge;

3. to assess what is sincerely or truthfully stated;

4. to decide what is a moral or an appropriate statement given the communicative situation.

If disagreements arise over a validity claim, then reasonable deliberation requires three ideal speech conditions:

1. Equal and symmetric opportunities to contribute;

2. the ability to raise any proposition or position;

3. a “full and equal” consideration of propositions and positions raised. (Jacobson and Pan 2008, 14)
The benefit of such a framing is that it translates encompassing, complex and amorphous questions about democracy into more manageable and precise questions about the communicative content of individual tweets and the communicative relationship between individual tweets in Twitter's structural layers.

The other considerable benefit is that the communicative action criteria can be considered in light of the communicative logics summarised in the table right at the start of this chapter. There is a tension between the logics of information liberation and information overload, and it relates to the speed and the density of Internet-enabled information flows. While information liberation relies on a organisational-communicational hybrid logic, in which information is released from censorship and freely distributable to all citizens, information overload posits that Internet technologies simply run too fast for the deliberative processes they could be supporting.

In other words, the steps involved in normative deliberation take time to perform – this concept is framed hereafter as the deliberative period. It takes time to process the validity claims: time to receive and to comprehend; time to reflect; to evaluate; to identify disagreements and time to deliberate. Concerns about information overload assume that network time stresses the deliberative period for all Twitter users to the point that communicative action becomes impossible (Pond 2015).

The methodology proposed next seeks to adapt this conceptual framing into an empirical examination of Twitter. That adaptation process follows the framework presented here. First, an attempt is made to systematically describe
the temporal and spatial properties of the communicative-affordances of the Twitter software. Next, those systematic descriptions are used to identify and to extract tweet streams – that is samples of tweets collected from flows shaped by the structural dynamics of Twitter’s communicative layers. Those samples are examined in the context of the communicational logics and, finally, a systematic evaluation of communicative action within those samples is carried out.
CHAPTER FIVE

METHODOLOGY

INTRODUCTION

This methodology chapter explores the critical issues associated with undertaking this particular research project, many of which apply to Twitter research more generally. It is an extended discussion because many of these issues are complex and have tended to be overlooked in early research efforts. In addition to the critical commentary on Twitter and the UK riots, this thesis seeks to contribute to the development of a rigorous empirical method – one that can leverage big data for the critical evaluation of digital communication.

The literature review and conceptual framework chapters sought to establish how digital technology might shape discourse so that it is more reasoned, responsible and productive than the commentary that dominates politically entrenched traditional media channels (Kellner 2004). Those chapters concluded that the Internet is best conceived as layered: a combination of a base network architecture, transmission protocols, Web standards and individual user-facing applications, which are bundles of software. Software is computer code plus intentionality and design, and it is the interaction between the software and the network that shapes the affordances of an application: its propensity to promote certain types of interaction and to inhibit others. In the case of Twitter, Bruns and Moe (2014) describe how the interaction of individual

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affordances creates communicative structures, layers within the application associated with specific practices.

These practices shape logical arguments: intersections between digital and democratic theory. The conceptual framework argued at length that the temporal and spatial dynamics of Twitter's communicative structures must play a central role in constructing these logical associations: in effect, it is digital time-space that is most likely to influence representational dynamics and, by extension, the democratic potential of digital discourse.

Having found an organisational, network-centric emphasis problematic, the conceptual framework chapter emphasised the communicational logics of digital democracy: the potential, on the one hand, for discourse to be liberated from the controlling hierarchies of traditional media institutions and the problem, on the other hand, of making digital time-space compatible with established interpretations of liberal democracy.

The issue here is not whether the political and judicial response to the UK riots was legitimate, nor is it whether digital media were somehow a significant factor in the debates that followed the riots; rather, the issue is whether or not digital media tools were any better than the mass media at enabling the sort of debate that could be legitimising according to a normative deliberative model.

There are multiple research questions because there are multiple variables in this logical intersection, and these variables are not yet well understood themselves. The outcome variable is riot discourse on Twitter, and this must be understood in different respects. There is the content of discourse, the thematic
concerns matter. It also matters how those meanings are circulating and whether the textual representations satisfy the demands of normative deliberative theory.

On the other side of the equation, the input variables are Twitter's communicational structures: the tweets, hashtags and other affordances that shape the way that Twitter users communicate with each other. In particular, the temporal and spatial dynamics of these structures are poorly understood, but potentially highly significant.

These general concerns translate into a series of specific research questions that will guide the development of a research strategy.

**Research Questions**

**Question 1:**

What are the features of discourse in the riot public, and how are these features distributed across Twitter's software-structural layers?

**Question 2:**

Is there evidence of deliberation, or at least of discourse that does not preclude a normative deliberative model?

**Question 3:**

What are the temporal and spatial dynamics of Twitter's software-structural
layers?

**Question 4:**

Can the attempts to record Twitter time and to characterise discourse within the riot public be combined/synthesised to interrogate the central claim in the conceptual framework: that digital technologies shape communication environments that are too fast for deliberative democracy?

**Methodological Discussion**

The aim in this section is to define a method capable of answering the research questions satisfactorily. In one sense, this should be a fairly straightforward task. There is nothing unfamiliar or controversial about the proposed approach: in order to assess discourse, content and thematic coding strategies are developed and applied. The evaluation of deliberative potential relies on criteria derived from a Habermasian account of communicative action; these criteria are used to guide a close reading of tweet content. With the outcome variables assessed, comparisons are then made across structural categories. This comparative analysis is guided by the conceptual framework and it emphasises the temporality and spatiality of those communicative structures. Time-space is assessed independently – across the entire data sample – to try and situate the time-space of the sample discourse within a wider “pattern of pace” – so called Twitter time.

There are, however, a couple of issues to be resolved before this analysis can
proceed, and they are sufficiently significant to require an explanatory statement.

As far as the content coding is concerned, there are epistemological questions relating to representation; the limits of an empirical classification system for subjective semantics are acknowledged (Agamben 1993, Lacan 1977/2002, 1989[1965]). These are longstanding methodological debates, and this thesis does not seek to resolve such issues beyond the practical imperatives of undertaking this particular research project. Content analysis is an accepted and widely used methodology within Cultural Studies and mass media research (Wimmer and Dominick 1994, Deacon 2008); certainly, it is a reductive representation of discourse, but reduction of some sort is inevitable, and it should provide a sufficiently nuanced reading to support the comparative analysis.

The more contentious methodological issues relate to the data-driven methods proposed to frame the analysis of Twitter: first, defining what counts as relevant discourse, then describing the communicative structures and, finally, developing an objective measure of Twitter time-space. These methods will be defined in full in the Research Design section, which situates individual methods in relation to the research questions. In this introductory discussion, the aim is to justify these methods in light of the conceptual framework and, also, to acknowledge a wider debate within the social sciences concerning the potential (and potential provocations) of big data (boyd and Crawford 2011).

The big data debate was mentioned briefly in the literature review when discussing some of the different approaches that Internet studies has adopted for
defining and describing the objects of study – datafication is one of the principal tenets of social media logic (van Dijck and Poell 2013). In that discussion, it was noted that, while the complexity of digital communication systems increases exponentially, such systems paradoxically seem tantalisingly available for study because of commensurate advances in computing power and database design. This, essentially, is the technological argument for big data analysis: it is done because it can now be done (Crawford et al. 2014). The mass and constant generation of digital trace data make applications like Twitter self-reflective, in some respects. Simply by functioning, by encoding information into a computable format, operating on that information and producing encoded outcome data, digital technologies make themselves available for study in a way that earlier communication technologies simply did not.

For some analysts, this has generated an unwelcome and unproductive trend in social research: the end of theory and the rise of a “data/action nexus” (Bowker 2014). The notion encapsulated here is that social and academic categories, according to which knowledge, interaction and causation have traditionally been structured, are increasingly unnecessary, and perhaps even inhibitory. In effect, the data archive is absolute, all-encompassing and all-knowing: obtaining knowledge simply becomes a process of directing appropriate questions at the archive. “No semantic or causal analysis is required” (Anderson 2008).

This position was critiqued in the literature review and it has been critiqued widely elsewhere (boyd and Crawford 2011, Erickson 2012, Bowker 2014) and it is not necessary to critique it further here. Rather, the reason for recalling the generalities of this particular debate is to make a statement of intent about the
data-driven methods used in this thesis. The social uptake of digital tools is an opportunity for researchers: datafication happens because of these processes and practices. Given the appropriate tools and the correct approach, then surely this abundant data can be useful. As Crawford et al. (2014, 1665) state, it is acceptable for researchers to “use big data as tools and techniques in their everyday work. By analyzing big data’s applications, methods, and assumptions, they aim to improve the way social and cultural research is done.”

The issue, and the risk for studies like this one, is that the researcher conflates the data and the phenomenon that the data represents. This is the same issue that Erickson (2012) articulated in relation to network sociology. The data is only a representation of social reality: it is not, itself, the object to be known. Furthermore, it is problematic to assume that the data archive is absolute, all-encompassing and all-knowing. As has been noted, big data can be value-laden, subjective and prone to privileging some assumptions above others. In addition, the “archive cannot in principle contain the world in small; its very finitude means that most slices of reality are not represented. The question for theory is what the forms of exclusion are and how we can generalize about them.” (Bowker 2014).

The research design outlines different techniques for datafying Twitter's communicative structures and time-space, thus making these phenomena available for empirical study. However, this is done in the full acceptance that this datafication can obscure assumptions and exclude certain aspects of the phenomenon, some of which may never be known. In the worst case scenario, this can introduce confounding biases that will confuse the comparative
investigation.

As individual methods are proposed, limitations will be noted and implications discussed. There are particularly issues in terms of keyword sampling, for instance, and with defining what constitutes the limits of the riot public (Schmidt 2014).

DEFINING TWITTER AS AN OBJECT FOR EMPIRICAL STUDY

Before moving on to the detailed account of the research design, however, there is an overarching issue that must be resolved and it relates fundamentally to the definition of Twitter both as a communicative phenomenon and as an object available for social research.

A technological definition of Twitter has been established (it is a web application, a bundle of software with certain affordances, structures and logics) but if that definition was sufficient, then Twitter could be studied simply by reading and evaluating its source code. The conceptual framework builds on this technological definition, so that Twitter is defined as an interaction between software and users, from which communicational logics arise to shape representational exchange (communication) between those users in time and in space. The object of study, then, must be this moment of interaction, when the software and the users meet. The only other option is to study individual users removed from this interactive context, but like the study of source code, this can only hope to reveal a partial perspective.
Herein lies the fundamental representative issue for this analysis. Individual Twitter users are assumed to have interacted (in large numbers) with each other, using the Twitter application during the UK riots. They exchanged textual representations encoded in short form messages called tweets. These tweets were aggregated under hashtags, redistributed via retweets and further shared across Twitter's communicative structures (all those communicative structures are ways of organising and categorising tweet flows). The analysis must proceed on the assumption that these communicative structures represent valid interactive phenomena. Assuming this is the case, then riot discourse can be understood in terms of individual tweets: the riot public is all tweets published in a specific period, containing riot-specific signs, and aggregated according to relevant communicative structures.

If the object of study is reframed in this way – as tweets rather than Twitter – then it becomes far easier to access data for sociological study: tweets are available on request from the Twitter API. It is important to recognise, however, that this representation of Twitter is different from the technology experienced by individual Twitter users. Twitter becomes the streaming API, a massive sample of $n$ tweets generated in response to a GET request defined by the researcher. Tweets become data objects instead of media objects; they encompass metadata that is frequently used to define form and function. They are studied via a command-line interface, or through commercial data processing tools, in ways that obscure mediated context: tweets in timelines, surrounded by other tweets and a fully functioning user interface. The API makes Twitter available for study, but it also abstracts it in ways that are
potentially significant.

When it is time to interpret the findings of the comparative analysis, this abstraction must be recalled. If discourse reveals evidence of deliberation, then this deliberation must be relocated in the experience of individual Twitter users. As the analysis progresses towards that point, as potential methods are proposed, it is important to recognise the assumptions involved. This thesis strives for an empirical analysis, but one that is self-aware, reflective, and accepts the limits of quantitative framing.

**Research Design**

**Data Collection**

As noted, collecting Twitter data involves engaging with the Twitter API. It is not necessary to reproduce Twitter’s documentation here. It is available in full from [http://dev.twitter.com](http://dev.twitter.com) and relevant features only are discussed. The Twitter API is the single entry point for sending queries to the Twitter databases and for returning data from those queries. There are two parts to the API, however. One is the Search or REST API, which exists at [https://api.twitter.com/1.1/search/](https://api.twitter.com/1.1/search/), the other is the Streaming API, which requires an ongoing connection through [https://stream.twitter.com/1.1/](https://stream.twitter.com/1.1/). In order to establish a connection, both require an exchange of authentication codes, which must be generated by registered Twitter users. Beyond that, however, there are significant differences between the Search and the Streaming APIs, and it is worth dwelling on these differences
for a moment because they explain much about the API functions and how this affects data collection.

There are issues with the Search API that make it problematic for this sort of project. First, the Search API returns results by relevance rather than completeness. This means that there are various algorithmic filters operating between the search query and the return results, and the researcher has no access to them. In some respects, this is not an especially significant differentiator between the two APIs. Twitter queries always involved fractional samples of much larger data flows. Second, the Search API “is not a complete index of all Tweets, but instead an index of recent Tweets. At the moment that index includes between 6-9 days of Tweets.” (Twitter 2015b). Longer-term historical queries are not possible. Finally, the Search API returns a limited number of results at a time. That number changes depending on the nature of the request, but it is never especially large – a few thousand at most. This is a bigger issue for researchers. Not only are there no results older than 6-9 days, it is incredibly hard to get at many of the tweets that are available in that period – a request will only return \( n \) results, and it will be the same \( n \) results each time. If an event is on-going, then this is a hopeless way of accessing tweets; if the event is finished, then only those \( n \) tweets will ever be available.

The alternative to the Search API is the Streaming API: “The Streaming APIs give developers low latency access to Twitter’s global stream of Tweet data.” (Twitter 2015b). To request data from the Streaming API, a researcher must maintain an open HTTP connection with the API, because the Streaming API will only return ‘live’ data. If the connection breaks, then the API stops transmitting and those
tweets cannot be recovered. Clearly this has implications for research efforts, not least that the researcher must know about an event in advance in order to be ready to make that HTTP connection. That is rarely the case, especially for acute events that come with no warning.

Twitter restricts access to its API through two methods. On the one hand, Twitter limits the rate at which individuals can send queries to the Search and Streaming APIs. For the search API, the rate limits are set at 180 requests/queries per 15 minutes. Twitter doesn’t publicise the rate limit for the streaming API, but if too many requests are sent too often, then access is restricted and can eventually be blocked. On the other hand, the company makes only a sample of tweets available through the API. The full flow of Twitter data is shared with a few partners, though it can be purchased at considerable expense from commercial Twitter data-suppliers like GNIP. The full flow of Twitter data is popularly known as the Firehose and is presumed to include billions of tweets sent each month (Twitter 2012). Twitter sells access to this resource to corporate partners, who are permitted to sell on Gardenhose (also called Decahose) access, which represents a random 10% sample of the Firehose tweets. Gardenhose access is sufficiently expensive to be beyond the reach of most academic researchers, unless they belong to a particularly well funded research centre or a “key strategic partner” of either Twitter or GNIP (Sridharan 2015).

This is a common source of complaint for researches though in many cases it is hard to know how to handle the volume of data that even the Gardenhose supplies. Certainly, for this project, there are insufficient resources to store or to process Gardenhose data, and there are few academic institutions sufficiently
well equipped to deal with the flow of Firehose data. Most researchers must be content to access Twitter data through the Search and Streaming APIs – a level of access that is occasionally called Spritzer: there are echoes of dilution in the name. Spritzer access represents an approximate 1% sample of Firehose access. That means that a connection to Streaming API that does not specify any search parameters will return approximately 1% of all tweets published (Quist 2011).

If a researcher sends a query string when she connects to the Streaming API, then the situation is slightly different. Twitter will return all the tweets that match the query in a filtered stream, as long as the total number of filtered tweets does not exceed a certain percentage of the full Firehose (Quist 2011). Twitter does not publish the exact percentage (it seems sensible to work on the assumption that filtered streams will be capped if they exceed more than 1% of the total Firehose volume). Consequently, for relatively rare search queries, this limitation should not be an issue.

With these various restrictions and limitations in mind, it is clear that the best way – indeed, the only way – for an independent researcher to query Twitter data for sociological investigation is to request tweets from the Streaming API during the event being studied. The only issue that remains, then, is whether it is better to filter the search using pre-defined criteria, to request the full Spritzer stream. There are pros and cons to both approaches. A filtered stream will return far more relevant tweets than an unfiltered Spritzer query. If the focus is on tweets containing the #OperationCupOfTea hashtag (relatively rare), then it is reasonable to assume that a filtered query will return most of them. In contrast, a Spritzer query will only ever return 1% of relevant tweets because it will only
ever return 1% of the Firehose. This difference alone would seem to suggest that Spritzer access is best avoided – surely the better strategy is to collect as much relevant data as possible?

However, there is an issue with filtered searches. Consider the following hypothetical example. A researcher wants to collect tweets while Hurricane Sandy rages across eastern US states in October 2012. Specifically, she is interested in the geographical distribution of tweets, so she sends a filtered query to the Streaming API to return all tweets that use the hashtag #sandy. She maps these tweets using geo-coded data points, where available, and geographic information software, and notes that during the peak period of #sandy activity, hardly any tweets at all were sent from Manhattan Island. At other times, Manhattan was responsible for huge numbers of tweets, so she wonders: what exactly were Manhattan residents doing during the particular period of intense meaning-making activity?

The problem with only collecting tweets from filtered streams is that the researcher cannot know what else was happening on Twitter during those collection periods – so she cannot explore properly the question posed above. In short, if she does not collect any information on baseline Twitter use, she cannot control for confounding relationships. Perhaps the people of Manhattan were not tweeting about Hurricane Sandy because their attention was elsewhere, or perhaps it was because they had been without power for 48 hours and their cell-phone batteries had died – they weren’t tweeting about anything at all, but they were still very much focused on Sandy. These sorts of confounding factors are often very poorly understood in the social sciences. Systematic exclusion at this
stage could introduce all sorts of biases and sampling errors (Ruths and Pfeffer 2014). The best way to identify and to control the biases is to have access to baseline Twitter data.

Baseline data is necessary to make any sort of adjustment or normalisation to account for uneven Twitter use across the population. With this baseline knowledge, the researcher can assess whether a particular distribution is a characteristic of riot conversation, or simply of certain groups or areas being underrepresented on Twitter, or of gaps in streaming API results. It is also incredibly useful for identifying anomalies in the data-collection process, especially when sample data may be relatively scarce. Without baseline API data, it would be impossible to know if similar gaps in a sample of #LondonRiots tweets, for instance, were caused by temporal discontinuity specific to that hashtag, or by more fundamental sampling disruption. For this reason, if nothing else, it is recommended to collect tweets via an open connection to the API stream rather than through filtered searchers. In short, identifying possible errors in sampling is considered preferable to increasing total filter-specific sample size.

**Extracting riot discourse**

It is important to establish how the API shapes data collection efforts, because these effects will ultimately influence how tweets are included in (or excluded from) the corpus representing riot discourse. A filtered search inevitably produces data that reflects the parameters and presumptions of the search,
whereas the primary aim should be to minimise the impact of the researcher on data-collection efforts. Rather than defining *a priori* what riot discourse might look like, the aim is to capture a snapshot of all Twitter activity during the research period, and to identify relevant tweets within that snapshot.

According to observations made for this study, the Streaming API returns tweets at the approximate rate of 50 tweets per second. The only thing that associates these tweets with riot discourse is that they are contemporaneous: this is a real time stream that returns tweets as they are published. The sample will contain some tweets that are riot-related and many more that are not, so it must be processed, or filtered, to identify those tweets that are relevant to the research questions.

Researchers have proposed different methods to assist in this task (Bruns and Stieglitz 2012, 2013, Thelwall 2014). Ultimately, this is an issue of conceptual framing and of signification: the conceptual framework defines what material should be relevant, the filters define what tweets count as relevant material. There is a tension here between the Twitter’s assumed communicative structures, and the unstructured flow of tweets from the API. Within the API stream, there will be riot-related tweets that adhere to structural norms, and others that don’t. So, for instance, one possible way to identify riot-related discourse, is to focus on tweets that include a riot-specific hashtag, such as #UKRiots. However, “it is virtually guaranteed that some users tweeting about the topic will be unaware of the existence of the central hashtag, or even unfamiliar with the concept of hashtags altogether.” (Bruns et al. 2012). So filtering by hashtag is likely to exclude many tweets that are potentially relevant
to an analysis of riot discourse. It is unlikely, perhaps, that social or political meanings influence hashtag use, but if it were the case, then this exclusion has the potential to systematically distort any reading of discourse.

An alternative is to ignore Twitter structures and to define riot discourse simply using textual classifiers or keywords. The logic behind a keyword search is that it will capture more riot-related tweets than a hashtag filter, for the simple reason that many users will either be unaware or uninterested in a hashtag. In formal sampling terms, a keyword search will minimise the number of false negative results – that is, it will exclude fewer relevant tweets than a hashtag or user-centred search. Having said that, it is highly problematic to assume that all riot-focused tweets will be included in the sample and, as noted, many non-riot focused tweets (false positives) may also find their way in.

Does this matter? In terms of defining the limits of riot discourse, and then later for estimating the temporality and spatiality of this discourse, it is only an issue if the relative number of false negatives to false positives changes over time. For instance, it is noted that the New England Patriots played a game on 12th August 2011. Most likely, there would be many tweets following the team’s progress, offering support or opposition, and consequently the absolute number of Patriot tweets in the firehouse stream would increase. The problem with keyword filtering is that it is very hard to differentiate between ‘riot’ and ‘Patriot’ tweets: an apparent spike in the riot discourse may have nothing at all do with the London riots – it may actually be explained by the increase in Patriot tweets.

An additional issue is that the researcher has no a priori knowledge of the different text strings that may produce false positive results. While it may be
possible to plan and adjust for a Patriot game, a change in the number of Marriott hotel check-ins or exceptionally lively parties is far harder to pre-empt. Ultimately, the only way to check for and to exclude all false positive results is to manually check each and every tweet, and this is impractical for all but the smallest datasets. There are an unknown number of potentially confounding variables in the assumed relationship between the keyword ‘riot’ and the temporality of riot-specific discussion on Twitter.

In order to address these issues, and to ensure that text analysed in questions 1 and 2 best represents riot discourse, the hashtag is preferred as a macro signifier of riot-related discourse. To identify relevant hashtags, the following method is proposed. Tweets are returned from the API via an unfiltered connection; all tweets returned from the API will be retained. Hashtags are preferred as reliable signifiers of riot-relevant tweets but, in the first instance, a keyword filter will extract all tweets containing the riot keyword from the baseline sample. An algorithm will then identify hashtags within this riot sample and rank them in terms of frequency. The most commonly occurring hashtags will then be used to define riot discourse.

The central research aim in this thesis is to assess the extent to which tweets classified as riot discourse adhere to deliberative norms and to criteria for productive, democratic discussion. According to the conceptual framework, discourse creates shared meaning. “Meaningfulness is complex and semiotic” (Potts and Hartley 2014, 45) – the result of assigning cultural value to shared knowledge (Hartley and Potts 2014); in order to be deliberative, discourse must assign value in certain ways. These processes have been theorised extensively,
according to a spectrum of normative rationality (Hartley and Potts 2014, Potts and Hartley 2014, Lewis 2005, Habermas 1994, 1991, 1984), and following a thorough review of the literature, alternative possibilities have been identified. On one end of the spectrum, assuming a logic of information liberation, open access and equal representation, communication – that is, the sharing of meanings and cultural shifts in the attachment of value to knowledge – is rational and deliberative, producing reasoned consensus and agreement in social action. On the other, communication is language wars, a violent political struggle to signify – ideological, hegemonic and irrational (Lewis 2008, 2005, Turner 1996, Hall 1982).

The methodological challenge is how best to differentiate between these types of discourse. The literature review summarised approaches that other researchers have taken to this problem and identified considerable disagreement about how best to approach it. In the absence of consensus, it is proposed that different approaches should be attempted, so that they can be evaluated in turn, and the most appropriate method can be selected.

**Analysing discourse**

Reflecting a significant divide in the literature, the thesis attempts both automated textual analysis and human-reading. It is important to consider the potential of automated analysis because it provides a perspective on Twitter’s communicative capacity that the other methods do not. It must also be recognised that data-driven approaches carry considerable currency within the
prevailing research climate, and it is important both to operate within accepted paradigms and to identify the limitations of such methods, if and where they exist. Hopefully, in such an approach, the limits of one method coincide with the potential of another, and so an integrated understanding of Twitter communication, formed across knowledge systems, becomes possible.

One argument for automated techniques is that they permit analysis across the entire sample: all contributions to riot discourse can be considered. It is simply not possible for a researcher to read and to assess thousands of tweets, but an algorithm can do so. As such, there is no need for further sampling, and no risk of further exclusion. The counter argument is that automated techniques are inherently reductive, rendering complex representational structures into single floating point scores, or relying on nebulous concepts like ‘interest’. Additionally, then, there are two methodological reasons for including automated techniques in this analysis. The first is to demonstrate empirically where the limits of automation lie, and the second is to make improvements to the method and, if possible, to extend those limits slightly.

Ultimately, the aim is to assess the deliberative potential of discourse in such a way as to evaluate the impact of thematic clusters, time-space and communicative structures. In addition to machine-reading, tweets will be coded using a system of content categories modelled on an established method (Bruns et al. 2012). Coding will attempt to establish what types of message were sent as part of the riot discourse, what were the thematic concerns and, finally, the deliberativeness of both individual tweets and structural tweet flows.

According to the conceptual framework, democratic communication relies on
deliberativeness, which is a rarefied form of exchange, with certain preconditions. Those preconditions were described by Jürgen Habermas in his theory of communication action, and they represent the starting point from which the codes are developed for this analysis. To reiterate: this approach is not intended to imply that deliberation in the public sphere is the only – or even the best – model for framing and studying mediated democracy. The conceptual framework established the justification for pursuing deliberation through the lens of communicative action: part of that justification is that the Habermanian model mechanises the communicative processes of deliberation in such a way as to make them available empirically (Habermas 2006).

Communicative action (CA) is possible when discourse satisfies both Habermas’ validity claims and his ideal speech conditions (Jacobson and Pan 2008). The validity claims describe “claims regarding the truth, appropriateness, and sincerity of each and every act of speech, even lies” (ibid 13). In other words, in order to pursue productive discourse, communicators must be free and able to ask the following questions of the subject being debated – and of claims about the subject made by their fellow communicators (Pond 2015).

In order to develop a deliberative coding scheme for this analysis, various attempts were made to apply CA conditions more or less directly to the text of individual tweets. However, these efforts all proved unsatisfactory, partly because of the difficulty in interpreting user positioning (sincerity, for instance) from tweet text and partly because the peculiar dynamics of Twitter communication require an interpretative approach that sometimes extends beyond the individual tweet.
Consequently, while the coding framework used in this analysis originates in Habermas’ schema for communicative action, it is not itself a framework for testing for communicative action within tweets. Rather, it aims to formalise the distinction first made in the content coding between emotive and productive contributions to discourse. The principles for doing so are based on the premise of communicative action, but the codes themselves are adapted and developed to work in the context of this particular study.

In other words, from Habermas’ framework are derived four questions that the reviewer must ask of every tweet. The four questions are asked in the same order, each time, the implication being that deliberation is a normative standard for any tweet, and that reaching that standard requires that the tweet satisfies certain preconditions. The four questions aim to capture the conceptual scope of Habermas’ four validity claims. An analysis of ideal speech conditions is performed later based on a summary reading across the full tweet samples.

**Measuring Twitter time-space**

Question 3 asks what are the temporal and spatial dynamics of Twitter’s communicative structures? Establishing an empirical description of time-space, and then using this description to draw comparisons within the coded discourse is the crux of the research effort. It should permit an empirical framing of information access, diffusion, and hierarchical organisation. It should also support a critical reading of the communication structures themselves. If, as Bruns and Moe (2014, 17) argue, hashtags “help to coordinate the exchange of
information relevant to... topics” and signify “a wish to take part in a wider communicative process”, then this must manifest in time-space. In online communication, “the interacting parties meet in time rather than in a place; for that reason, response presence becomes important, and temporal rules of coordination begin to matter” (Knorr Cetina 2009, 79). In order to fulfil the role designated to them, hashtags need to facilitate this meeting. It is a crucial dynamic in the conceptual framing – it is this temporality, this synthetic situating, that needs to prove compatible with deliberative processing.

For these reasons, temporality takes precedence over spatiality in this analysis. To enable a standardised comparison, temporality can be calculated as a frequency measure: tweets per five minute period. This is a simple solution to a highly complex problem. The conceptual framework invokes a social definition of time: a product of a material and political economy of speed (Armitage 1999) and a user's experiential interaction with that economy. Following Lefebvre (1991) time and space are social constructs, and as such, timescapes are experienced relative to each other (Adam 1998). Twitter time is a variable and fluid concept, “qualitatively different from clock time” (Hassan 2009, 67), but it will be produced – or constructed – differently for different users depending upon their individual Twitter experiences.

In order to standardise temporal measurement, however, Twitter time has to be measured against the regular periods of clock time. This approach has been demonstrated previously (Pond 2015, Weltevrede et al. 2014), but there is a legitimate concern about whether it is valid to define fluid social timescapes according to Newtonian temporality. A full discussion of that concern is well

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beyond the scope of this thesis. It is an issue for philosophy and theoretical physics. It is important to acknowledge it, however, and to clarify that clock time is used to pace Twitter time rather than to fix it in absolute terms. Clock time remains the hegemonic standard – the rhythm against which social, economic and political life is paced; it provides a familiar reference against which to measure these emergent networked timescapes.

Network time is an established research subject in its own right (Castells 2010, Hassan 2009), but the interest in temporality here relates to its central position in the conceptual framework and the logical relationship that ties temporality to deliberative potential. To recap, the conceptual framework states that if digital communication media are to impact on the processes and practices of communicative democracy, then partly this will be because digital technologies construct information flows that challenge established mechanisms for deliberation. In other words, the temporality invoked in the conceptual framework is specific to those information flows – it refers to the rate of publication, dissemination, collation and access of tweets within Twitter's overarching ecosystem. Consequently, any method for measuring and comparing temporality on Twitter must be aware of the structural mechanisms that order and shape those informational flows. Inevitably, this will involve Twitter's communicative structures: temporal analysis must account for hashtags, follower networks and retweet practices.

Similarly spatial analysis should be sensitive to these different communicative dynamics. It is simply a case of recognising that Twitter supports different communicative communities, structured in different ways, and engaging
differently in discourse. Spatiality is also understood to be constructed socially, but geography persists in ways that are both measurable and corporeal – human bodies remain situated in tangible physical space, a fleshy nexus where “imaginary Turing machines” bloat into real software (Rieder 2012). The reinterpretation – the straining – of the relationship between the physical body and the phenomenology of lived experience is central to conceptualisations of digital time-space. While places are locked into a physical world, flows move freely through digital networks: simultaneous social practice no longer depends upon proximity.

A full empirical investigation of digital space and place, of the distribution of humans and their meanings, has not really happened xxviii. Networked information has tended to be theorised as detached from its uploaders and downloaders, sifted and sorted algorithmically on ephemeral servers. The rubric for judging digital democracy, however, is centred on human subjects. Software bloats in human hands, in physical rooms located in brick and mortar institutions. The role of embodied individuals in collective meaning-making should not be overlooked.

One issue is that spatial analysis is complicated by a relative absence of data. If a user enables the functionality, Twitter can connect to a smartphone’s Global Positioning System (GPS) hardware, triangulate the user’s location, and attach the geo-coordinates to the tweet through the metadata. The map below shows a distribution of geo-tagged tweets collected at baseline from the API.
There are 43,997 tweets located on the map – a large number, certainly, but under 1% (0.94 % to be precise) of the total number of tweets collected in this sample. That so few tweets, relatively, have GPS coordinates attached is not, in itself, an insurmountable problem. In statistical terms, the sample is still incredibly large and will generate sufficient power to draw conclusions about the population. A far greater problem – the first of two that will be discussed here – is that the sample is not random. Twitter users must choose to attach GPS coordinates to their tweets and, clearly, very few choose to do so. Again this is not necessarily a problem, as long as there are not systematic reasons why Twitter users choose not to nominate their GPS coordinates – reasons that could confound any suggestion that the distribution of tweets responds to meaning-making alone. It is quite an assumption, however, that Twitter users nominate their GPS coordinates quite randomly.
A cursory examination of the map suggests that Twitter use is concentrated in the United States and Western Europe, popular in parts of South East Asia, especially Malaysia and Indonesia, even more so in Japan, but surprisingly uncommon in India, rare in China and unknown in Iran. The denser end of this distribution is unsurprising, Twitter is predominantly an English-speaking tool. It is built by an American company, was first adopted by an American audience, and it is deeply embedded in a Western media ecology. Nevertheless, it is a little surprising to see so few tweets located outside that Western landscape.

One explanation is that, despite political claims to the contrary, tweeting remains a remarkably uncommon practice across much of the world. Alternatively, it could be that Twitter use is under-represented in countries like Iran, Egypt and China because Twitter users there deem it unwise to attach their precise geo-coordinates to their communications. If this is the case, then the Western domination of the map may reflect Western cultural, political and social norms vis-à-vis public-ness and geo-expression. If the later explanation is the more likely, then what other cultural, political and social norms influence an individual's propensity to geo-locate him or herself? How do virtual proxy networks (VPNs) and browsers like The Onion Router (TOR) affect this dynamic, given that such masking practices are both highly deliberate and contextual?

Given such uncertainty it is really very difficult to make any sort of statement about the distribution of global Twitter users based on geo-location information. Rather, what is available here is a sample of the geo-located Twitter population, who may or may not be different from the total Twitter population. This, actually, is not an insurmountable problem for this thesis, because the focus is on the
circulation and the distribution of meanings relative to other meaning within a sample – it doesn’t set out to describe the total population of Twitter users. It may well be that geo-located Twitter users are distributed differently for all sorts of complex, confounding reasons, but what matters is how meaning circulates within these geo-located users.

However, there is a second problem and it concerns the unknown characteristics of even the geo-located Twitter population. Put as simply as possible, how likely is it that certain features, practices and meanings associated with Twitter-use are distributed normally within any given population of Twitter users? On reflection, it seems quite unlikely, especially given the historical and sociological precedent for non-normally distributed factors – wealth, demography, culture – being implicated in meaning-making and communicative phenomena (Lewis 2015, 2008, Fuchs 2013, Hall 1982). If this is the case, and fully aware that such factors can cluster geographically, then it becomes very difficult indeed to assume normal population distributions, and this has enormous knock-on effects on any assumed relationship between sample data and the population it is meant to represent. As a result, it is necessary to be extremely cautious when discussing something like the geographical distribution of Twitter conversations.

METHODS

The tweet data used in this thesis cover four periods during the week after violence erupted in Tottenham, when rioting spread across London boroughs and then to other cities in the UK. These four periods are selected from a larger
data collection effort, which started early in the morning on 10 August and ended on 16 August, during which period more than 22 million tweets were downloaded from the Twitter API. A proprietary Python script was used to maintain an open connection to Twitter’s streaming API. The API returns tweets as JavaScript Object Notation (JSON) objects; all data points associated with each tweet are listed in a dictionary-like data structure. These JSON objects were saved into a NoSQL Mongo database – a database system that treats each record as an individual document rather than a line in a relational table.

In total, 22,078,550 records were created in a database called *ukriotsdb*, approximately 100gb large. Despite the nominal name of the database, this tweet sample is not riot-specific; rather, it is a snapshot of Twitter activity during the period 10-16 August 2011 returned by the streaming API. In 2011, Twitter claimed it was publishing 200 million tweets per day (TwitterEng 2011), which suggests that the sample used here represents approximately two per cent of all tweets published during this period – though, of course, this is a very rough estimate. Of the 22 million tweets downloaded, 60,000 contained the string ‘riot’.

The gaps in the baseline stream are most likely explained by disruption to the API connection or rate limiting by Twitter. The stability of the stream during live collection periods suggests that the sampling script was working appropriately, downloading a steady stream of tweets from the API. The disruption, when it occurs, stops the collection of any tweets. Such markedly different behaviours strongly suggests that sampling error is either present or absent – rather than there being a gradient of error, which would complicate any assumptions about sampling stability during the ‘live’ periods. It also suggests that it would be
inappropriate to conduct any sort of analysis across the full duration of the collection window, especially if that analysis seeks to explore the temporal distribution of tweet data.

![Graph showing the stream density of tweets](image)

**Figure 2:** Graph showing the stream density of tweets (number of tweets published per five-minute period) returned following an unfiltered call to the API between 10 August 2011 and 16 August 2011.

From the larger baseline sample, four periods were selected for analysis in this thesis. They are:

- 1030 Wednesday 10 August to 1730 Wednesday 10 August
- 2000 Wednesday 10 August to 0200 Thursday 11 August
- 1030 Thursday 11 August to 1730 Thursday 11 August
- 2000 Thursday 11 August to 0200 Friday 12 August

These periods were chosen for the following reasons. First, the connection to the API remained open and stable throughout and tweets download at the rate of
approximately 180,000 per hour. Second, these collection periods coincided with the time parliament was being recalled for an emergency debate on the riots on Thursday 11 August. As such, different dynamics within the public sphere may be explored, as both British political and civil society attempted to construct meaning from – or, perhaps, impose meaning upon – the riots. Third, there is a certain logic in collecting tweets across a period longer than twenty-four hours, in case there are diurnal patterns in localised Twitter activity. Of course, a two-day collection period is too short to control for such variation satisfactorily, but there is a good sense still in having a starting point for comparison – a matched case-control logic.

IDENTIFYING HASHTAGS

Within these baseline periods, a tweet was extracted if it included the string ‘riot’ is any guise. Python text search differentiates between upper and lower case, so the extraction search first converted tweets into lower-case characters before committing the riot-related tweets to a new database. In total, across the four periods, 25,538 tweets were considered riot-related, based on this simple screening method. This initial meta sample was then used to guide further investigation. So, for instance, the riot tweets were screened to explore the frequency of different riot-related hashtags; the results of this exploration were used to guide hashtag-specific searching in the baseline samples.
Table 2: The top most frequently occurring hashtag variants in each of the four sample windows.

The values in this table are the result of text searches on the entire meta sample, making use of the TextBlob library, an implementation of Python's NLTK. TextBlob enables different forms of text processing, parsing and counting. It
vastly simplifies and speeds up all sorts of coding exercises and can break complex strings (like tweets) into component parts of speech. Individual tweets are parsed into individual words – that is, complete character strings without separations or spaces – before a simple script checks every word to see if the ‘#’ character occupies position [0] (the first position). All of the words that meet this criteria are stored in a list and then a simple histogram function is used to work through this list, counting how many times matching words reappear.

Though these hashtags are the most common, there are an enormous variety of hashtags in the meta sample – nearly two thousand in the Wed_Day period for example. The tail of the distribution is extremely long, however, and most hashtags appear just once. The 20th most popular hashtag in the Wed_Day sample appeared in just 20 tweets. It is clear, also, that many of the more common hashtag strings are variants on the same theme – essentially the same hashtag returned in different ways by the data processing scripts. As such, it’s possible to collapse several of the rows in the table into one another, while maintaining the integrity of the hashtag as a structural communication coordination mechanism.

Cross referencing these variants against each other identifies five hashtags that appear to play important signification roles across all four sample windows:

- #UKRiots
- #LondonRiots
- #Riots
- #RiotCleanUp
There are another two hashtags, which occur less frequently but are potentially important for exposing localised publics.

- #OperationCupOfTea

- #ManchesterRiots

- #BirminghamRiots

IDENTIFYING RETWEETS

There are two possible methods to identify whether a tweet in the API stream is a retweet or not. The first is to ask whether the 'retweet_count' field returns a value (0 is nullable) and the second is to search through the text field of each tweet looking for markers that indicate a retweet. As boyd et al. (2010) describe, however, the "the conventions for retweeting are hugely inconsistent". Those conventions have, perhaps, settled down somewhat in the five years since that study was published but there are still different ways of performing a retweet and different in-text representations of that action. By far the most common practice is to mark a retweet using capitalised letters 'RT' followed by the screen name of the original tweet publisher: RT @username tweet text. This syntax is usually placed at the start of the tweet text. However, in a historical dataset like the London riots sample, the full string 'retweet' is sometimes used instead of RT as is the practice of using 'via @username' to signify a retweet, often placed at the end of the tweet text.

In order to identify retweets, tweet text was parsed using TextBlob to create a
new data field: a list of individual words. So, for instance, the tweet text:

“RT @username: Sign the petition to have convicted rioters lose all government benefits

http://t.co/R9CJ2G4

#ukriots

#londonriots

#m …”

Becomes:

WordList([u'RT', u'username', u'Sign', u'the', u'petition', u'to', u'have', u'convicted', u'rioters', u'lose', u'all', u'government', u'benefits', u'http', u't.co/R9CJ2G4', u'ukriots', u'londonriots', u'm'])

By far the most common retweet convention is to begin a tweet with the syntax described above: RT @username… Typically, this syntax indicates a retweet without comment – a verbatim passing on of tweet content. A quick check of the characters in the first position in the WordList field reveals that the majority of retweets begin this way. The suggestion, then, is that in-text searching captures not only all of the tweets that meta data screening captures, it is better at identifying tweets that use the same RT syntax and also captures those tweets that use a different RT syntax.

One effect of the parsing a tweet into words using TextBlob is that the process removes all punctuation and non-alphabetical characters. Fortunately, TextBlob
also permits parts of speech (POS) tagging, which identifies all the components of a text string including non-alphabetical characters:

```
[(u'RT', u'NN'), (u'@', u'IN'), (u'username', u'NN'), (u'Sign', u'NNP'), (u'the', u'DT'), (u'petition', u'NN'), (u'to', u'TO'), (u'have', u'VB'), (u'ven', u'VBN'), (u'rioters', u'NN'), (u'lose', u'VB'), (u'all', u'DT'), (u'government', u'NN'), (u'benefits', u'NN'), (u'http://t.co/R9CJ2G4', u'NN'), (u'ukriots', u'NNS'), (u'londonriots', u'NNS'), (u'm', u'NN')]
```

The POS nomenclature is not important at this stage but now, if RT can be identified as the first value returned by the tuple at position $x$ in the list, as long as the tweet follows the $RT@username$ syntax, an @ symbol should be in the tuple at position $x+1$. In other words, a retweet should be identifiable regardless of commenting or unusual tweet structure.

For the remainder of the analysis this is the method used to identify and to classify retweets. Tweet text strings are parsed into POS using TextBlob and then a search is conducted for RT at position $x$ and @ at $x+1$. The function that achieves the second part of this approach is included in appendix A. It saves in a list all tweets that contain the $RT@username$ syntax unless the tweet happens to end with an RT, in which case it prints out the text of tweet for manual review. For example, it is not uncommon for a user to end a message with a call to retweet:

```
"#anticuts response to #londonriots will be discussed at our mting next Tues 16/8, Oxford House E2 All welcome! http://t.co/8UNFBDD PIs RT"
```

In these cases, the tweet is added to the $rt$ sample only if it includes a retweet as
well as a request to retweet.

**IDENTIFYING @ REPLIES**

There is an issue that makes the representation of temporality between @ reply exchanges problematic: like retweet chains, at this micro level of analysis, data is relatively scarce. In total, across all the hashtag streams, there are 446 tweets that Twitter records as being @ replies. Text searching is problematic because @ reply syntax is so variable, so 446 represents the number of tweets that the Twitter API records as being in ‘reply_to_status_id’.

The issue is that using the ‘reply_to_status_id’ to search the meta sample for original tweets returns only 11 results. Such small samples make it almost impossible to represent the temporality of these exchanges in any meaningful way. Additionally, as can be seen from the table in appendix, it is quite difficult to characterise some of the @ reply exchanges as contributions to associated or continuing discourse. It appears that the @ reply method is used by bots to automate the distribution of generic messages.

<table>
<thead>
<tr>
<th>Reply text</th>
<th>Original text</th>
</tr>
</thead>
<tbody>
<tr>
<td>&quot;@hansyquirk Please Listen to the official 'STOP THE RIOTS' ANTHEM! by @TayongTYN - <a href="http://t.co/ZZrGNju">http://t.co/ZZrGNju</a> #riotcleanup RT&quot;</td>
<td>&quot;Absolutely soaked to the bone but never been so pleased to see it raining. Let's hope it keeps the morons indoors #manchesterriots&quot;</td>
</tr>
</tbody>
</table>


<table>
<thead>
<tr>
<th>Username</th>
<th>Tweet</th>
</tr>
</thead>
<tbody>
<tr>
<td>@ungaro @democracynow</td>
<td>Two posts here on #londonriots 'the fire next time' &amp; 'dark days ahead' read more here <a href="http://t.co/8rL79">http://t.co/8rL79</a></td>
</tr>
<tr>
<td>'Gwoon, winkels weg. @KimRoest dus die krijg k er niet meer op? Wat heeft #londonriots er mee te maken? Snap t niet? #durftevragen dtv'</td>
<td></td>
</tr>
<tr>
<td>'@trixylion Hey! Please Listen to the official 'STOP THE RIOTS' ANTHEM! by @TayongTYN - <a href="http://t.co/EKBMJdj">http://t.co/EKBMJdj</a> Please RT #riotcleanups'</td>
<td></td>
</tr>
<tr>
<td>'@AmbushPredator Bloody Hell Downing Street riot! #londonriots #lfc <a href="http://t.co/YBHqH5e">http://t.co/YBHqH5e</a>'</td>
<td></td>
</tr>
<tr>
<td>'@aleeshamottram Hey! Please Listen to the official 'STOP THE RIOTS' ANTHEM! by @TayongTYN - <a href="http://t.co/Cel1TCr">http://t.co/Cel1TCr</a> Please RT #riotcleanups'</td>
<td></td>
</tr>
<tr>
<td>'@Mike_EH_52 Bloody Hell Downing Street riot! #londonriots #lfc <a href="http://t.co/0NIEDj7">http://t.co/0NIEDj7</a>'</td>
<td></td>
</tr>
<tr>
<td>'@chrisshipitv Attention: Capital in chaos!! #ukriots #manchesterriots <a href="http://t.co/18GLsc">http://t.co/18GLsc</a>'</td>
<td></td>
</tr>
<tr>
<td>'Over 1000 Arrested in UK as Anger over Inequality, #Racism Boils Ovr into &quot;Insurrection&quot; <a href="http://t.co/gR6cvjY">http://t.co/gR6cvjY</a> via @democracynow #LondonRiots'</td>
<td></td>
</tr>
<tr>
<td>'@typorist dus die krijg k er niet meer op? Wat heeft #londonriots er mee te maken? Snap t niet helemaal? #durftevragen dtv'</td>
<td></td>
</tr>
<tr>
<td>'@trixylion Hey! Please Listen to the official 'STOP THE RIOTS' ANTHEM! by @TayongTYN - <a href="http://t.co/EKBMJdj">http://t.co/EKBMJdj</a> Please RT #riotcleanups'</td>
<td></td>
</tr>
<tr>
<td>'@woodo79 Not exactly like one. No-one's been shot, except by other rioters.'</td>
<td></td>
</tr>
<tr>
<td>'<a href="http://t.co/N7WFgkw">http://t.co/N7WFgkw</a> #Victim in #viral #riot #photo #identified'</td>
<td></td>
</tr>
<tr>
<td>'@AmbushPredator Bloody Hell Downing Street riot! #londonriots #lfc <a href="http://t.co/YBHqH5e">http://t.co/YBHqH5e</a>'</td>
<td></td>
</tr>
<tr>
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<td>'<a href="http://t.co/N7WFgkw">http://t.co/N7WFgkw</a> #Victim in #viral #riot #photo #identified'</td>
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<tr>
<td>'<a href="http://t.co/N7WFgkw">http://t.co/N7WFgkw</a> #Victim in #viral #riot #photo #identified'</td>
<td></td>
</tr>
<tr>
<td>'@woodo79 Not exactly like one. No-one's been shot, except by other rioters.'</td>
<td></td>
</tr>
</tbody>
</table>
Table 3: comparison between @ reply tweet pairs. The text in the left-hand column is the tweet marked as a reply in the ‘reply-to-status-id’ metadata field. The text in the right-hand column is status id identified in that same field.

<table>
<thead>
<tr>
<th>Left Column</th>
<th>Right Column</th>
</tr>
</thead>
<tbody>
<tr>
<td>'@Hennasaurus Breaking: 10 Downing Street Raided! #riots <a href="http://t.co/D3J7RhR">http://t.co/D3J7RhR</a>'</td>
<td>'Went town today, SO many shops boarded up Was quiet. Not the town I know, thanks rioters for ruining our home (Y)'</td>
</tr>
<tr>
<td>u&quot;@londontownleo did u hear a student studying criminal law was I’m court today over #LondonRiots that made me laugh&quot;</td>
<td>'Someone I went to school with mentioned on national tv as one of those going to prison for looting! Shocked but no surprised! #LondonRiots'</td>
</tr>
</tbody>
</table>
| "@sarahebeid Check out @Bashy’s response to the #londonriots. RT to spread youth awareness of political problems.. http://t.co/aIMM0Fq" | 'RT @nadiaaboutaleb: The cover of this months "Time" ; "The decline and fall of Europe"
http://t.co/jQSPfGP
#londonriots' |

**Automated content analysis**

This analysis makes use of two types of automated processing techniques: computer-assisted content analysis and sentiment analysis (Einspänner et al. 2014, Thelwall 2014). The content analysis uses machine-processing techniques and Python’s NLTK in order to parse and to count words, but there is nothing complex or hidden in computing terms – in other words, programming is used only to speed up tasks that could be conducted manually. Sentiment analysis relies on an algorithm that is trained to weigh the influence of individual words and phrases within a text string, and approximates a measure of attitude based on the relationship between those parts of speech. A sentiment score consists of
two measures: *polarity* is a score between -1 and +1 and is the approximation of attitude; *subjectivity* is a score between 0 and 1 and indicates confidence in the polarity score. A score of 1 is highly “subjective” whereas a score of 0 is highly “objective”.

Automated content analysis tends to be based on various forms of word counting, although this is sometimes extended to include key phrases, other parts of speech and pattern matching (Grimmer and Stewart 2013, Hopkins and King 2010). Higher level techniques allow the processing and evaluation of embedded media content and may involve classification using pre-defined illocutionary dictionaries (Einspänner et al. 2014). The analysis attempted here is restricted to low-level frequency plotting based on single word signifiers.

Frequency plots are calculated for each of the five dominant hashtags identified in the meta layer. First, a Python script makes use of the NLTK and TextBlob modules to parse the text of individual tweets into word lists – a word being a distinct and complete string of letters that can be categorised into a pre-existing type class. Those word lists are then passed to a separate function that sorts, counts and displays them in a way that best reflects the requirements of the research question. At the hashtag layer, for instance, no attempt is made to connect temporality, spatiality and meaning-making: the aim is simply to demonstrate how keyword counting might hint at meaning within a corpus of tweets.

A word cloud is a pictorial representation of word distribution, in which the size of individual words is adjusted to reflect frequency. While this is hardly a powerful analytical tool, it can provide a useful starting point for identifying
recurrent signifiers, especially within large textual samples. It also has the advantage of being easy to compute using the WordCloud module and Python’s 2D plotting library (matplotlib).

**CONTENT CODING**

Tweets from all seven hashtags are considered, although the dominant hashtags – #LondonRiots, #UKRiots and #Riots – exert considerable influence over the extraction strategy. The reasons for this are obvious. First, these hashtags represent the majority of tweets in the sample and second, because of multiple hashtag use and ambient discussion, dominant hashtags tend to ‘drive’ activity in other streams too.

![Graph showing sample windows](image)

**Figure 3:** Graph showing the sample windows from which tweets are extracted for content and thematic coding. The shaded areas correspond to four periods (11:00am-13:00pm and 21:00pm-23:00pm on Wednesday and Friday), selected because they correspond to periods of high and low density flow.

The shaded areas in figure 3 represent the periods chosen for coded analysis:
1100 to 1300 and 2100 to 2300 on both Wednesday and Thursday, four periods in total, containing 3542 tweets, which is approximately 40% of the total hashtag sample (n=7474). The rationale behind the selection is as follows: first, the morning periods on both days include high-density flows across all the hashtag streams, but there is considerable variation between streams in terms of both maximum and average stream densities. So, while the #LondonRiots stream regularly features more than 25 tweets per five-minute interval, the localised hashtags (#BirminghamRiots, for instance) rarely escape single figures. This variation will allow both intra and inter temporal comparisons across hashtags.

Second, while it may be tempting to focus on very brief flow periods, or to compare only the extremes of temporal density, such an approach would make it very difficult to consider ambient discourse. It would also ignore important affordances of Twitter, essentially reducing the temporality of a tweet to the instance of its publication – when, of course, it has been demonstrated already that tweets persist through the meso and micro layers of exchange, are subject to algorithmic sorting and promotion and so on. Finally, by extracting tweets at the same times on both days there is an element of control for possible daily patterns in stream density and, possibly, in topicality as well.

The tweets from all seven hashtags across all four sample periods were combined into a single dataset and transferred to an Excel spread sheet. Each was randomly assigned a unique identifying number. These identifiers were then used to extract a random sample of 500 tweets, which was transferred into a separate spread sheet to act as a test sample for developing and validating coding criteria. Next, 1000 tweets were randomly extracted from the remaining
dataset to form the main sample for coded analysis. The fact that all hashtags were pooled initially means that this coding sample should reflect the relative distribution of tweets between hashtags. Put simply, there should be far more #LondonRiots and #Riots tweets than there are #RiotCleanUp and #BirminghamRiot tweets.

In summary, this iterative process of sorting and sampling involves three datasets: the first includes tweets identified by hashtag in the four periods of interest (n=3542); the second is a random sample of these tweets (n=500) for developing coding criteria; the third sample (n=1000) is extracted from the remaining 3042 tweets are the main sample for coded analysis.

Content analysis was conducted in three phases. Ultimately, the aim is to assess the deliberative potential of discourse both at different temporalities and in thematic clusters. Before that, however, tweets were coded using a system of content categories (Bruns et al. 2012). The aim of this initial coding was to establish what types of message were sent under different hashtags as part of the London riot discourse.

Initially, following Bruns et al. (2012), the first 100 tweets in the development sample (n=500) were coded using the following categorisations:

1. Information (advice, situational information, requests for information).
2. Media sharing (news media, multimedia).
3. Help and fundraising (help, fundraising).
4. Direct experience (personal narrative, eyewitness reports).
5. Reactions and discussion (adjunctive discussion, personal reaction,
thanks, support).


After this initial attempt to code tweets, the categories were adapted to better reflect discourse in the riot public. These updated categories were then applied to the next 100 tweets in sample, before another attempt was made to refine coding categories. This process was repeated until an attempt had been made to code all the tweets in the development sample and the coding categories had been through five phases of refinement. Some categories were modified slightly, others were dropped altogether and several were added to reflect the greater range of discourse – especially in terms of discussion and commentary – in the riot public. The final coding system used to categorise content in the test sample is detailed in table 4.

<table>
<thead>
<tr>
<th>1. Information</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>G.I.</strong></td>
</tr>
<tr>
<td><strong>J.F.I.</strong></td>
</tr>
<tr>
<td><strong>S.I.</strong></td>
</tr>
<tr>
<td><strong>R.F.I.</strong></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>2. Media sharing: for any tweet that includes a link</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>M.M.</strong></td>
</tr>
<tr>
<td>N.M.</td>
</tr>
<tr>
<td>-----------------</td>
</tr>
<tr>
<td>C.M.</td>
</tr>
<tr>
<td>O.M.</td>
</tr>
<tr>
<td>G.M.</td>
</tr>
</tbody>
</table>

3. Adjunctive discussion (opinion and commentary)

<table>
<thead>
<tr>
<th>P.R.E.</th>
<th>Personal reaction and emotion</th>
</tr>
</thead>
<tbody>
<tr>
<td>P.O.</td>
<td>Personal narrative, opinion</td>
</tr>
<tr>
<td>P.C.</td>
<td>Personal commentary and analysis</td>
</tr>
<tr>
<td>O.</td>
<td>Other – give details</td>
</tr>
</tbody>
</table>

4. Help & support

<table>
<thead>
<tr>
<th>C.T.A.</th>
<th>Call to action: social or political</th>
</tr>
</thead>
<tbody>
<tr>
<td>I.A.</td>
<td>Issue awareness, including campaigns and fundraising</td>
</tr>
<tr>
<td>E.S.</td>
<td>Expressions of support or solidarity</td>
</tr>
</tbody>
</table>

5. Meta analysis & commentary

| M.C.            | Meta commentary on the role of social media in the riots and in riot discussion |

6. SPAM
Table 4: Coding categories used to evaluate the content of individual tweets.

The 1000 tweets in the main sample were coded twice by independent reviewers. The content codes are not mutually exclusive, so several codes could be attributed to the same tweet. Once both reviewers had completed their independent coding, the main reviewer worked through both sets of codes, identifying discrepancies, which the two reviewers discussed to see if an agreement could be reached. If no agreement was possible, both categorisations were assigned to the tweet to reflect the different reviewer interpretations. So, for instance, if a hypothetical tweet was coded OM + PRE by one reviewer, and OM + PO by the other, and no agreement was possible, the final code was recorded as OM + PRE + PO.

Thematic coding

Tweets coded as adjunctive discussion (ADJ) were submitted to a second round of coding to identify thematic concerns. During analysis, the different ADJ codes were hidden from reviewers to limit the potential for selection and confirmation biases. Tweets were read independently by two reviewers. If a tweet contained a link, an attempt was made to follow the link and to assess the thematic content of the destination media. If the link failed or the media had been removed, the tweet was marked with a BKL tag. For each tweet, the reviewer made cursory notes (a maximum of 10 words) summarising the main themes, opinions or
arguments being made within the tweet or in the linked media. Once this task had been completed for all ADJ tweets, the summary notes were collated for each reviewer.

These summaries were then combined and read closely to try to identify thematic trends across the dataset; several major themes were identified and are summarised in table 5.

<table>
<thead>
<tr>
<th>Code</th>
<th>Theme</th>
</tr>
</thead>
<tbody>
<tr>
<td>POL</td>
<td>A tweet that implicates politicians or the political/capitalist class as complicit in the riots, often citing the expenses scandal, banking bailouts or a failure of moral/political leadership.</td>
</tr>
<tr>
<td>SOC</td>
<td>A tweet that emphasises complex social and personal explanations for rioting.</td>
</tr>
<tr>
<td>RES</td>
<td>A tweet that comments on supposed appropriate or effective responses to the riots, including calls for punishment and social reflection.</td>
</tr>
<tr>
<td>RAO</td>
<td>Rioter as other. Tweets that set rioters apart from society, citing their behaviour or supposed moral or social failings.</td>
</tr>
<tr>
<td>MC</td>
<td>Media commentary. Any tweet that reflects on media coverage of the riots, the apparent role of mediated communication within the riots or the appropriate state response to this communication.</td>
</tr>
<tr>
<td>RED</td>
<td>Reduction. Any tweet that downplays the social/personal explanations (SOC) of rioting, instead portraying the riots/rioters as simple and criminal.</td>
</tr>
<tr>
<td>NLC</td>
<td>Neoliberal critique. A tweet that locates the riots within a wider criticism of consumerism or individualism.</td>
</tr>
<tr>
<td>LC</td>
<td>Liberal critique. A tweet that locates the riots within a wider critique of a liberal society that tolerates riot-encouraging behaviour.</td>
</tr>
</tbody>
</table>
Table 5: A list of thematic content (with codes) extracted from the adjunctive discussion

Independent reviewers then used the thematic coding sheet to reconsider all tweets in the PO+PC and PRE samples, assigning a thematic code where possible and marking those tweets that did not address a major theme Other. Once this task had been completed, the codes from the two reviewers were cross checked, inconsistencies were resolved and the relative frequencies of different thematic codes were calculated.

**Deliberative coding**

Coding was performed independently by two reviewers on all tweets originally coded into the adjunctive discussion category. All identifying information external to the tweet text was removed, as were any indications of previously applied codes, in an attempt to limit the effect of prior knowledge on the reviewers’ coding decisions. However, deliberative coding was performed by reviewers who had previously worked with the sample, so there is a risk that some of the deliberative decision-making may have been influenced by prior
readings of individual tweets. In a further effort to limit this effect, the deliberative questions were limited to yes/no responses and scores for individual tweets were adjusted based on the contributions of both reviewers.

Despite these precautions, it must be stated that these are subjective readings of tweet text and, ultimately, subjective assessments of deliberative potential. Partly owing to the brevity of the tweet format, the pre-conditional logic of deliberation is often implied rather than articulated in full. Furthermore, while some tweets stand alone as independent meaning-making statements, others are embedded in @ reply conversations, retweet chains or other forms of reactive commentary. In these cases, the individual reviewer must assess whether or not the tweet meets the deliberative criteria to his or her own satisfaction.

The following coding questions were asked of every tweet in the ADJ sample. Each question carries a single point score, so that the maximum score for any tweet is 4.

Does the tweet:

1. State a moral, political or intellectual position relative to one of the thematic codes? In other words, does the user express an opinion or an attitude explicitly, or is it implicit in the choice of adjectives. So, for instance, the phrase “rioters in London” does not express a position, whereas “scum rioters in London” does (however reductive).

2. Suggest that the user comprehends the position stated in question 1, either in terms of causal factors or in terms of significance? Is the position supported by an understanding of relevant information relating
to the statement or to the riots more widely?

3. Include a call to existing or shared knowledge or cultural ‘truth’ in support of the position stated in question 1, including personal experience, external discourse or existing tweets? This includes the practice of retweeting.

4. Use language and form appropriate given the prevailing culture of riot public? Within the adjunctive discussion sample, this criteria applies to pretty much every tweet. The few cases in which a point is withheld for this final criteria are discussed below.

Once the two reviewers had coded every tweet in the ADJ sample, these independent assessments were combined and a mean score was calculated for every tweet. The primary reviewer then looked at the whole sample as singular text, searching for evidence of ideal speech conditions. Particularly close attention was paid to @reply tweets and retweets – the most ‘conversational’ dynamics in the riot public.

The appropriateness criteria is potentially problematic because it is difficult to judge what defines a prevailing culture and it is difficult to define what may or may not be appropriate given that culture, especially in the context of a hashtag, which is such a malleable signifier for constructing discourse. In one sense, it could be argued that, given the user-generated nature of Twitter discourse, all tweets are potentially appropriate. Alternatively, perhaps a reviewer should refer to Twitter’s terms and conditions defining “content boundaries and use of Twitter”. The rules, however, are platform specific and ignore the fact that cultures of appropriateness can be hashtag and context-specific. Given this
specificity, it is necessary to define *a priori* what constitutes an appropriate culture for the riot public.

Given the prevailing culture of Twitter, a tweet will need to be fairly transgressive to be deemed inappropriate, and this is unlikely given the sample only includes tweets that received an adjunctive discussion content code. Consequently, a normative definition is preferred: effectively, this is how a productive, deliberative communicative culture should look if it is going to function in such a way as to enable communicative action. Under such a definition, a tweet fails to meet the appropriateness criteria if it undermines a “culture of commitment to deliberation”. That culture:

- Does not preclude humour or satire, as long as that humour or satire contributes to a rhetorical statement.
- Does not necessarily preclude profanity.
- Does preclude offensive or aggressive statements, including profanity deemed offensive or aggressive.
- Does preclude statements that are purely emotive.

**Measuring Twitter time-space**

Weltevrede et al. (2014, 136) theorised network time in terms of platform-specific content flows – that is, “the pace at which various devices presented new content”. In their analysis temporality is visualised as looking somewhat like a barcode: each result is represented as a single line, and as the rate of result flow increases, lines cluster in ever-denser blocks.
There are two issues that prevent exactly the same approach being adopted here. First, the period of study spans days rather than hours. To enable visualisation across longer intervals it makes sense to deal with clock-time periods rather than absolute values. In all the charts presented here, temporality is visualised using five-minute periods. It is necessary to maintain the same period length as a denominator when comparing tweet streams, but otherwise period length can change so that a visualisation best ‘represents’ stream density (Thelwall 2014). This is a subjective decision, a trade-off between how best to represent the temporal characteristics of the stream and comparability requirements, and has the potential to influence visual interpretation.

Second, with larger datasets like those used here, it is quite likely that tweets are published with the same timestamp. This complicates a barcode visualisation because content is meant to be represented independently: to represent two tweets with the same timestamp requires either doubling the width of a line (interfering with and misrepresenting the primary visualisation of pace) or doubling the height of the line – in effect, producing a histogram. That is the option preferred here. Line width – the x-axis variable – is kept constant and line height is used to visualise the pace of flow. In such circumstances, it makes sense to drop references to pace, which can be problematic, and speak instead of densities of flow.

Consequently, the temporality of different structural flows is measured in terms of tweets per five-minute period. This is achieved using a short Python program that parses tweets according to the ‘created_at’ data point and then performs frequency calculations. All of the programming scripts used in this research are
included for inspection in appendix A.
CHAPTER SIX

FINDINGS

DESCRIBING DISCOURSE IN THE RIOT PUBLIC

For the purpose of this analysis, the riot public is defined as the collection of unique Twitter accounts contributing to public, riot-specific discourse at the macro level, through the use of one or more major riot-related hashtags. There are seven such hashtags, identified by an automated frequency analysis of every tweet containing the character string ‘riot’. A summary analysis of all seven hashtags is provided in table 6.

<table>
<thead>
<tr>
<th>Hashtag</th>
<th>Total tweets</th>
<th>Unique Users</th>
<th>Locations</th>
</tr>
</thead>
<tbody>
<tr>
<td>#UKRiots</td>
<td>2199</td>
<td>2018</td>
<td>1110</td>
</tr>
<tr>
<td>#LondonRiots</td>
<td>2998</td>
<td>2803</td>
<td>1493</td>
</tr>
<tr>
<td>#Riots</td>
<td>1175</td>
<td>1105</td>
<td>650</td>
</tr>
<tr>
<td>#BirminghamRiots</td>
<td>169</td>
<td>143</td>
<td>90</td>
</tr>
<tr>
<td>#ManchesterRiots</td>
<td>353</td>
<td>303</td>
<td>163</td>
</tr>
<tr>
<td>#RiotCleanUp</td>
<td>743</td>
<td>665</td>
<td>378</td>
</tr>
<tr>
<td>#OperationCupOfTea</td>
<td>514</td>
<td>499</td>
<td>299</td>
</tr>
</tbody>
</table>

Table 6: A summary of the seven major hashtag streams identified with the API stream

This section outlines the findings of the qualitative coding and quantitative data
analysis: it also comments on the methodology in relation to the research questions and conceptual framework. For certain metrics, it is appropriate to perform analysis across the entire riot public – that is, to include all tweets from all seven hashtags. Other metrics are more appropriately applied to certain hashtags and, in certain cases, the data sample is limited for illustrative purposes. In each instance, sampling logic is explained before the presentation of findings.

To reiterate briefly, there are four principal aims to the analysis presented. The first is to describe and to evaluate the content of discourse in the riot public, including the major thematic concerns represented in tweets. The second is to describe and to evaluate the deliberativeness of the public, both in terms of the representational meaning within tweets and in terms of interaction between tweets (and, by extension, Twitter users). The third is to describe the temporality and spatially of the riot public in general terms, but also more specifically, corresponding to the structural flows that constitute the public. The fourth is to observe and to question any interaction between these variables, to conduct comparative analysis if possible, and to explore the assertion that the time-space of structural flows plays a significant role in framing and shaping discourse.

Accordingly, findings are presented in response to the first three research questions that capture and formalise these principal aims. The fourth research question, which requires a comparative and critical cross-referencing of these different variables, is taken up in the next chapter as part of the analytical discussion.
Automated content analysis

This analysis is presented separately for individual hashtags; follower networks are studied through their interaction with macro and micro publics. Furthermore, retweet chains are not very suited to automated content analysis, mostly because a retweet chain is, effectively, the same tweet repeated multiple times with only minor editing. As such, it is perfectly possible to human-read the retweet samples and automated coding adds very little value.

Sentiment analysis is conducted at the level of the hashtag because the hashtag is considered a topical organisational signifier, via which Twitter users can contribute to a wider public discourse. In theory, tracking sentiment may identify macro changes in attitude or opinion (meaning) over time, as sentiment becomes more or less polarised, or even changes polarity: perhaps an indicator of public mood.

The graph below includes positive and negative polarity scores only if the corresponding subjectivity score is less than 0.5, that is tending towards objective. The 0.5 threshold is arbitrary. With a much larger data sample it might be possible to plot only the most objective (confident) polarity scores – those with a subjectivity score less than 0.1, for instance. The polarity scores are adjusted to account for population size. The adjustment process is very simple: if 10 tweets average a modest positive score (e.g. 0.2), the value plotted in the graph is $10 \times 0.2 = 2$; if two tweets average -0.8, the value plotted is -1.6. Both positive and negative become less polarised, and positive sentiment neutralises at a faster rate.
Figure 4: Graph showing sentiment scores calculated for each 5 minute interval. Scores are adjusted according to the number of tweets published in each interval and positive and negative scores are displayed separately.

Word clouds for all the major hashtags are included in appendix B. The first image is generated from tweets within the #LondonRiots stream\textsuperscript{xxix}. 
Figure 5: Word Cloud generated from frequency analysis of all tweets within the #LondonRiots stream. The larger the word, the more frequently it occurs in those tweets.

The second image is generated from the #UKRiots hashtag.

Figure 6: Word Cloud generated from frequency analysis of all tweets within the #UKRiots stream.

The hashtags return seemingly distinct word sets, which supports the structural logic of conducting analysis at the macro level. If hashtags were arbitrary then presumably, over this large a sample, it would be more difficult to distinguish
differences between word distributions.

Beyond this preliminary observation there is clearly much to debate about the quality or the applicability of the knowledge that these word clouds produce. Certainly the automated (and, by definition, obscured) generation of these images is problematic for the average reader who may lack access to both the algorithms and the processing scripts that make use of these algorithms. The hidden sampling, coding and weighting of individual character strings inhibits much in the way of quantitative conclusions and this technique is too reductive to permit much in the way of textual interpretation. Consequently, the commentary offered here probably approaches the limit of what is advisable: word clouds suggest possibilities for further research but invariably raise more questions than they answer.

It could be argued, for instance, that the word clouds presented here validate the structural logic of analysing hashtags, or at least contribute evidence towards that validation. The fact that, qualitatively at least, different hashtags appear to support thematic word distributions lends credence to the idea that hashtags are topical signifiers, but in itself this observation does nothing to illuminate how those word distributions are constructed. This makes it difficult to make any sort of claim about how meanings are being exchanged and transformed within the hashtag culture. The communicative practices, the encoding and decoding of meaning around thematic markers, and the discursive structures of the riot public are beyond the reach of this sort of automation.

However, it is worth noting that, as yet, automated content coding has not been applied to explore the temporal dynamics of discourse. Such an approach is
possible as long as keywords are accepted as a reasonable approximation of meaning. While such an assumption is clearly reductive, automated frequency analysis is increasingly employed in social and textual research, as researchers gain access to software that supports such approaches (Einspänner et al. 2014).

This analysis does not presume that automated reading can reveal complex and detailed textuality but rather that keyword frequencies, in aggregate and across big data samples may indicate macro characteristics of discourse that could be explored further. So, for example, word frequencies for the three hashtags #LondonRiots, #UKRiots and #Riots are calculated within each five minute interval used to generate the stream density metric, so that for each period in the density plot there is a corresponding histogram containing every word in every tweet sent during that period, recording the number of times each word is repeated. In the first interval, between 10:30 and 10:35 on 10 August, a list of 630 words is produced, and the number of repeat occurrences is recorded for each word.

This permits two potential avenues of enquiry. First, with this data available, it becomes possible to track the occurrence of keywords – or sets of related keywords – over time, so that thematic trends might be investigated. Second, it allows a researcher to focus in on periods of dense stream flow and look for trends of themes in the frequency of key signifiers. For instance, suppose that it is possible to track representations of the state on Twitter by identifying a list of keywords that might reasonably be assumed to signify state power and state-centric activity. Now, clearly, this is quite a supposition but, as suggested early, it is not so radically different from the categorisation work behind the semantic
A study of the word clouds already presented produces a list of candidate words. In the three riot streams, there are relatively few.

<table>
<thead>
<tr>
<th>Word</th>
<th>Signifying</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Strong association</strong></td>
<td></td>
</tr>
<tr>
<td>Cameron</td>
<td>(David) Cameron; Prime Minister; human embodiment of state power.</td>
</tr>
<tr>
<td>Police</td>
<td>Agency administering state power; pursuit of order.</td>
</tr>
<tr>
<td>Downing</td>
<td>The geographical centre of state power; personal attachment to Prime Minister.</td>
</tr>
<tr>
<td><strong>Weak association</strong></td>
<td></td>
</tr>
<tr>
<td>Social</td>
<td>Social as collective rather than state</td>
</tr>
<tr>
<td>Society</td>
<td>Emphasis on shared relationships; us; collective project.</td>
</tr>
<tr>
<td>Prison</td>
<td>Representation of state power/violence; non-specific; supra-state.</td>
</tr>
</tbody>
</table>

Table 7: Candidate keywords representing the state and state power in discourse.

The graph in figure 7 tracks the combined temporality of the three strong association keywords, presenting this temporality as a fraction or percentage of the total hashtag flow.
Figure 7: graph displaying the temporality of two streams. In green, the total stream density of the #LondonRiots, #UKRiots and #Riots hashtags, and in purple the percentage of those tweets that contain the keywords ‘Cameron’, ‘Downing’ and ‘Police’.

There is a marked difference in the distribution of these keywords, as a fraction of the overall stream density, comparing Thursday to Wednesday. This may be coincidental but on Thursday 11 August parliament was recalled for a special sitting and the state formally detailed its response to events of preceding days. Breaking down this collected representation of the state and looking at keywords separately, it becomes clear that there is a shift in the representative dynamic.
Figure 8: graph showing the relative frequency of two state-centric keywords over the two-day study period.

On Wednesday, the riot public consistently mentions the police more than the Prime Minister but on Thursday this trend is reversed. There are plenty of fairly obvious explanations for why the police may be more prominent in the riot public on Wednesday, not least that rioting continued to trouble UK cities through Tuesday night and into Wednesday morning – it was in the early hours of Wednesday morning that three men died trying to protect community property from rioters in Birmingham. The police, far more than the prime minister, perhaps, represent a public-facing, interactive and interventionist state.

Perhaps Cameron’s increased profile on Thursday is representative of a more concerted and managed attempt to reassert central state authority, and how this might have worked within different mediated contexts. For instance, does the
returning spectacle of parliamentary democracy boost Cameron's profile – that is, mediated and managed institutional discourse operating in a normative fashion – which would imply that the digital riot public is very much an extension and a reflection of broadcast forms? Is it indicative of the prime mister's media management policies, which included a concerted effort to assert authority over the struggle to signify, and a corresponding drive to capture, process and punish rioters? Certainly these questions seem worth exploring, as does the possibility that Cameron's apparent dominance on Thursday (at least in terms of state-centric discourse) is a trend unique to Twitter rather than being something indicative of wider societal processes.

**CONTENT CODING**

The relative frequency of the different content types (tweets) is displayed in figure 8. The chart demonstrates that a tweet is a far more complex signification system than the usual 140-character string definition would allow. There are several reasons for this, including user-defined syntactical conventions (hashtags, @ tagging, non-alphabetical characters and emoticons), but the practice of hyperlinking via embedded (and often shortened) URLs is particularly important in this respect. Nearly two-thirds of tweets in the main coding sample contain a link to another form of media.
Previous analyses of the London riots have suggested that Twitter played an influential role in organising and mobilising not the riots themselves but the civil response after the riots, including efforts to clean up and repair damaged communities (#RiotCleanUp and #OperationCupOfTea) (P Lewis et al. 2011). The content analysis here, however, suggests that if Twitter contributed to these efforts it was mostly indirectly. Only 16% of tweets contain content coded as Help & Support; only half of these tweets (8% of the main sample) contain direct calls to action. Efforts to mobilise Twitter users involve calls to identify rioters, either formally on behalf of the police or through social media, requests to promote the #OperationCupOfTea hashtag and attempts to drive isolated issue awareness. In other words, there is hardly overwhelming evidence that Twitter
was being used *intentionally* as a tool for connective action. This does not mean, of course, that Twitter did not support connective action via indirect methods, either through the sharing of relevant information or by creating an ambient discourse encouraging such efforts. It does mean that there is little empirical evidence to support claims of linear intentionality (an effects model) connecting Twitter and post-riot civil mobilisation.

Three types of content appear to dominate the riot public: media sharing, adjunctive discussion and, to a lesser extent, news or information defined according to various subcategories. It is worth taking some time to explore these categories in isolation, though of course this is an artificial separation – often the adjunctive discussion is part of the embedded media or is explicitly tied to information-sharing practices. It is convenient, however, to establish what is happening within each category before exploring how the categories interact.

A key claim about the communicative potential of social media, especially in times of crisis or social disturbance – so called acute events – has always been that it affords the exchange of “hyper-local and context-specific” information in a way that national media structures do not (Sarter and Woods 1991, 55). This contribution to situational awareness is particularly valued by crisis communication scholars (Vieweg et al. 2010) but has implications for social and political communication theory as well. The opening of new communication channels within the public sphere, operating alongside but independent of traditional media, and capable of supporting independent communicative flows, forms the basis of many information liberation arguments. In effect, for information hungry citizens, social media enables alternative pathways for
accessing information, many of which operate beyond the oversight of formalised media gatekeepers.

In the riot public, however, situational information accounts for only a tenth of information sharing activity and only 4% of all Twitter activity. Indeed, fewer than a third of tweets share information in the sense that they report directly on (or cite other reports of) contemporaneous social action. The vast majority of these are coded as general information – that is information that, while local in focus, perhaps, is not obviously local to the Twitter user or his or her followers. Most of these report on, or share links to, information in the national media category – national media, according to the coding system, is professional content provided by commercial news gathering and distributing organisations. The few situational reports that do occur tend to link to user generated multimedia content – videos and photographs of riot activity or riot-damaged communities. These multimedia reports are coded as situational either because they appear to have been self-created by the Twitter users or because they are hyper-local in focus.

It is perhaps unsurprising that situational information is fairly scarce in the main coding sample because by Wednesday 10 August and Thursday 11 August the riots were not breaking news in the sense that they had been a few days earlier. That is not to suggest that there was not news breaking during this period, however. In the early hours of Wednesday morning, Shazad Ali, Abdul Musavir and Haroon Jahan died in the singularly most violent and confronting episode of the entire riot period (Butt and Wainwright 2011). By this time, however, several other things had happened. First, riot activity across London had either slowed
or stopped entirely; second, broadcast media had mobilised across the country, so that the riots and the riot response had become a national media event; third, emergency judicial procedures were starting and there was an increased focus both on this response and on the profiles of the accused rioters; fourth, most riot activity was highly localised and happened at night, which must have limited the number of Twitter users present to record situational information.

Another important observation about the tweets coded as ‘informational’, either because they provide or request information, is that provision occurs almost solely through embedded hyperlinks. Very few tweets are standalone informational statements, and those that are tend to include personal commentary on the information being reported. While this raises interesting questions regarding the informational affordances of the 140-character restriction for tweets, more obviously it underlines the importance of Twitter as a linking and media-sharing service. As noted already, this complicates the temporal and informational bounding of individual tweets, but it also suggests another possibility for analysis, namely an exploration of the relationship between tweet purpose (whether information or rhetorical) and the coded classification of embedded media.

As noted earlier, nearly two-thirds of tweets in the main coding sample carry links to other media. The coding system differentiates between five categories of media. An important distinction is made between citizen and national media types. In broad terms, the citizen media code is assigned when the media source is a blog or another social media channel – in other words, the author of the content is not obviously a professional journalist or official commentator and
when the website is not obviously a commercial operation. There is occasionally overlap between these categories, if for example a commercial website seeks to profit from volunteer content, as The Huffington Post does, or when the ‘official’ or professional status of the author may not be absolutely clear. Importantly, the citizen and national media codes are assigned to textual content only. A separate multimedia tag is assigned when the tweet links to a photograph or video. In cases where that multimedia is obviously the product of citizen (amateur) or professional effort, tags are combined.

The are a few reasons for distinguishing between content like this. First, there is the simple fact that textual content seems to persist longer on the web than photographs or video content. Links to textual content tend to work, even several years after the initial posting, whereas multimedia links are frequently broken or the media is missing. This makes it very hard to assess the thematic or rhetorical position of the media, complicating any attempt at comparative analysis. Second, the author (and, quite often, the origin) of multimedia content is often difficult to ascertain. Partly because of the media, and partly because of the affordances of different media hosting services, photographs and video circulate on Twitter with far less identifying information attached to them. This has implications beyond simply classifying authors as amateur or professional: an analysis of multimedia tweets sent during hurricane Sandy, for instance, found that more than 10,000 contained fake images (Gupta et al. 2013).

The most frequently used codes are multimedia (MM: 38%) national media (NM: 29%) and citizen media (CM: 14%), though there is considerable overlap within these categories. A few tweets link directly to government websites: two
in particular are noteworthy. A tweet by Greater Manchester Police (GMP) is widely retweeted and links through to a Flickr page, seemingly created by the GMP in 2011 to publish photographs of suspected rioters, mostly captured from close-circuit television (CCTV). The tweets that link to this site mostly contain an implicit call to contact GMP with information about individual identities and an explicit call to retweet and circulate more widely (coded CTA in the Help & Support category). Looking more closely at the @gmpolice account for the period in question, it is clear that the GMP were particularly active on social media, using Flickr, Facebook and Twitter to publish information about suspect rioters and to encourage citizens to “Shop a Looter” (@gmpolice 2011). These social media efforts happened in conjunction with physical attempts to publish and circulate photographs of suspected looters: billboards and advertising vans were used by police forces including the GMP.

Another link that appears in several tweets directs users to a petition on the UK Government and Parliament Petitions website (https://petition.parliament.uk) for a petition titled “Convicted London rioters should loose [sic] all benefits” (Parliament 2011). The petition received 258,276 signatures before the closing deadline on 9 February 2012 and was thus considered by the Backbench Business Committee in the House of Commons for debate in parliament. It is relevant to note that the circulation of the link to this petition on Twitter, the relative frequency of the circulation, and the commentary and positional statements accompanying the link, are highly suggestive in terms of the struggle to signify. These attitudes or meanings will also be analysed in more detail later in this chapter.
Initially, the coding system distinguishes between seven different types of meaning-making grouped under the category of *adjunctive discussion*. The name of this category is borrowed from Bruns et al. (2012) and suggests that discussion is somehow a secondary or subordinate affordance of Twitter, an adjunct to the primary function of media sharing. Of course, this is not necessarily the case, not least because the act of media sharing is, in many ways, also an act of discourse.

Some tweets, however, are generated automatically by blogs and websites to publicise content. In order to be coded as adjunctive discussion, a tweet must demonstrate some form of commentary, analysis or rhetoric beyond the act of information or media sharing. It is notable that of the tweets coded as adjunctive discussion, half contain links to other media. Of these media-linking tweets, approximately 20% link to citizen media – slightly higher than the main sample but not dramatically so.

Meanings are pursued through just one hyperlink, to the media directly cited within the tweet text. There are two reasons for this, the first of which is practical. It is already a significant undertaking to locate and describe this media, given the high percentage of tweets that include links. This task is performed manually, both because broken links and shifting content complicate any attempt at automation and because including destination media in the coding process requires manual reading. Second, it seems more likely that when Twitter users choose to embed links in their tweets, they do so based on the meaning attached to the immediate text, and do not think too much about the vast webs of hyperlinked meanings embedded in that text. This is an assumption, of course,
but it seems like a reasonable assumption, if only because most users do not have endless hours to pursue meanings through infinite hyperlinks.

Within the adjunctive discussion category the different codes are not mutually exclusive, so it is possible to code content as both social and political commentary, or to temper a PRE code with the addition of a PO code. PRE is the code for personal reaction and emotion and, in many respects, it is the most distinguishing code in the category. The difference between a PRE code and personal opinion (PO) is the emphasis on reaction and emotion – in other words, the PRE code is meant to distinguish comment without consideration; it limits the potential for rational or deliberative reconsideration. PRE is the code also used for tweets that are discursive but off-topic or self-evidently not sincere in their positioning:

“I think Team India is planning for Tea Party #OperationCupOfTea”

“Give police a paintball gun and shoot them all in colours that don’t wash off... #Londonriots”

“this is absolutely terrible. i close my eyes and pray. #londonriots #prayforlondon”

PO, by contrast, is reserved for statements that, in the simplest terms, display some evidence of rationalisation (of considered opinion): they are productive because they do not preclude deliberative reconsideration.

"I disagree with DC, i dont think society is broken, if anything #riotcleanup shows that its anything but! And there's only a small minority"
“@username Sadly, ongoing social problems are rarely considered in "law and order" policy. It's all about the short term fixes. #ukriots”

Often, this is not an easy distinction to make, which is why tweets can be coded PRE, PO to reflect uncertainty about the productive intent of the original author. Intent must be guessed, of course, there is no objective test for distinguishing between productive and non-productive content. Furthermore, it is reductive to frame productivity in binary terms: Twitter users can hold a range of positions in terms of productivity, topicality and reason-giving. As such, a third code is available in this category, to assign if a tweet – or the media embedded within the tweet – demonstrates greater thematic engagement with the key concerns of the thesis: explanations of rioting in a socio-political context. A tweet qualifies for PC (political commentary) code if it demonstrates extended, official or informed discussion of topics including (but not limited to) the causes of the riots, the status or intent of rioters, the complicity of the political class, state reaction or mediated discussion.
Figure 10: bar chart displaying the relative frequency of different adjunctive discussion categories. 662 codes were assigned to 593 tweets.

The personal narrative (PN) code is used for tweets where the scope of commentary is limited to individual experience or self-reflection. The scarcity of PN tweets suggests that the supposed introspective, self-narrating aspects of micro-blogging – always, perhaps, more of a presumption than an actuality – are particularly rare within the riot public. This lends credence to the idea that certain hashtag cultures are more deliberately or intentionally public than others – the hashtags analysed here are overwhelmingly used to express public-facing opinions rather than to describe personal experience of the riots. Of course, it may also be that the riots were always more localised and sporadic than the national broadcast media portrayed them to be (Bassel 2012, Greenslade 2012), limiting the number of people to experience them first-hand.
The act of assigning codes and categorising tweets is only a productive exercise if those codes, once assigned, reveal something tangible and useful about communicative practices within the riot public. Simply describing codes, and explaining how they can be assigned, is not, in itself, particularly revelatory. What the assignment does, however, is establish foundations for further enquiry. Differentiating between tweets that simply share information and tweets that contribute adjunctive discussion is an important first step because it is through adjunctive discussion that subjective meanings are traded, transformed and assigned value – at least in terms of liminal, public discourse. The second step, equally important, is to explore how this process happens, and to ask whether it can be considered productive or deliberative in democratic terms.

In order to achieve this, tweets undergo another round of coding and are subjected to close textual reading. Tweets coded PRE, PO and PC are collated and read closely with the following objectives:

1. To identify and to extract thematic exchanges.
2. To evaluate tweet content in terms of productive and deliberative potential.

**Thematic coding**

Thematic coding was performed on all tweets that received an ADJ code during content coding. The results of thematic coding are displayed in figure 10, in which the initial ADJ codes have been reapplied, so that PO+PC tweets (the productive sample) are displayed in purple and PRE tweets are displayed in
green. The height of the individual bars represented an adjusted measure of frequency, which takes into account the total numbers of codes assigned across the PO+PC and PRE samples respectively.

![Chart showing the relative frequency of the different thematic codes](chart.png)

**Figure 11:** Chart showing the relative frequency of the different thematic codes (see table 4) assigned to tweets already coded as adjunctive discussion. The frequency scores are adjusted so that the height of each column represents the fraction of total codes assigned (rather than an absolute number).

The most common code assigned across both samples is O (other, n=146) and this code is assigned almost exclusively to PRE tweets (n=145). This disparity deserves comment both because it suggests something interesting about how tweets are composed to convey meaning but also, of course, about the coding methods used to distinguish between tweets. The large number of O tweets in the PRE sample is simply a reflection of the logic applied during the content coding. Within the ADJ category, an attempt was made to identify tweets that
made considered, riot-specific comments (PO + PC). It is hardly surprising that in the subsequent thematic analysis, those tweets return more focused thematic engagement. What is potentially more notable, however, is that the difference between productive and non-productive content was supposedly determined by the type of engagement (emotional versus rational) rather than the topicality of that engagement.

This suggests two things. First, clearly, it is worth looking more closely at the other codes. So many PRE tweets fall into this category, it is important to ascertain whether this is simply a mass of unfocused emotive expression or if there are more nuanced communicative practices happening that were overlooked in the initial content parsing. Second, depending on the outcome of this closer inspection, the O code may suggest that the original content coding achieved precisely what it was meant to achieve, in that it has differentiated between riot-specific meaning-making in a potentially productive or deliberative context, and less focused, less political communicative practices that just happened to be attached to the same hashtag. In short, it suggests that the distinction between PRE and PO+PN tweets is a distinction worth making, though it will be necessary to also consider how the different hashtags are distributed between the categories.

The full list of coded tweets (content and thematic) is available in appendix C, including the O coded PRE tweets. It shows that this code has been applied across a range of speech acts and Twitter-specific activity. It is difficult to summarise or to categorise them in any logical or consistent way. What this suggests, of course, is that Twitter supports a range of communicative practices
and that deliberation and reasoning account for only a fraction of these different expressive moments. Indeed, given the character limitations of the Twitter form, it is perhaps a little surprising that quite so many tweets manage to focus thematically.

Across the other thematic codes, a pattern emerges. Unsurprisingly, there is generally more thematic engagement in the productive (PO + PC) sample than in the PRE sample, because this separation is exactly what the content coding was meant to achieve. Tweets coded as personal opinion (PO) or personal commentary (PC) focus on several themes: the social complexity of the riots, the difficulty of formulating a response and cross-social responsibility for the riots – especially the complicity of the political and professional class in setting moral and social norms.

There are a couple of reversals to this pattern, however. First, two codes, COP and SOL, are relatively more frequent in the PRE sample than in the PO+PC sample. COP tweets include claims or comments about the police, either as a generic institutional entity or in terms of individual police forces. There are not many of these tweets, and they include both expressions of recommendation or support for police tactics, especially violent ones, but also concerns about police activity.

“http://lockerz.com/s/128298401

The police are kicking ass.

#Birminghamriots #Londonriots
#Liverpoolriots"

“looks like another quiet night on the #londonriots front. Well done police I say. loads of them around by us…”

“you dont fuck with the GMP or the GMP fuck with you http://t.co/sm2JQXs #manchesterriots”

"Will any MP mention the IPCC & most people’s belief it is not independent from Met? #londonriots #ukriots #Cameron"

SOL tweets express solidarity, most often with victims of rioting but also with efforts to restore order and to clear up after the riots. Within this category the role of the #OperationCupOfTea hashtag is worth note. A Twitter-specific campaign, #OperationCupOfTea began with a tweet from a YouTube video blogger called Sam Pepper, who had over 200,000 followers, establishing the hashtag as an anti-riot campaign:

“nearly 3,000 people supporting our anit-riot campaign by drinking tea at 8.30pm show your support here >> http://www.facebook.com/event.php?eid=261568193854371 … #londonriots”

Whether or not this is type of campaign qualifies as legitimate political activism – or slacktivism (Gladwell 2010) – it appears as though the hashtag, if nothing else, afforded other Twitter users a way of collectivising an identity in opposition to the rioters – one that emphasised an imagined British stoicism in the face of the
rioting and served, in certain respects, to define a normative group in opposition to the homogenous rioters.

"I've decided to join in with #OperationCupOfTea what else is there to do when the world is in a mess!!!!!!"

“#OperationCupOfTea A very British way of handling things! http://t.co/btHTYkC”

"#OperationCupOfTea and #riotcleanup are trending, that’s really good :)

Solidarity codes were also assigned to several tweets expressing dismay at the deaths of Shazad Ali, Abdul Musavir and Haroon Jahan in Birmingham in the early hours of Wednesday morning. Many of these tweets express sympathy for the men and their families.

Also more common in the PRE sample are RAO tweets, so coded because they place the rioters outside of the individual Twitter user’s own social and moral collective. Tweets coded as RAO were typified by derision, type-casting (all rioters are the same), anger, frustration and, often, confusion. They include many examples of the types listed below:

"Give police a paintball gun and shoot them all in colours that don't wash off... #Londonriots"

"i keep hearing about all the #londonriots blokes calling themselves "freedom fighters" and all i can think of is Braveheart but w/ chavs"
“Chav of the week award? http://t.co/ii8lHpw Bloody morons the lot of them #londonriots”

"Seriously.... one person in the dock this morning was a 31 year old teacher for looting richer sounds Croydon?! Can't be right #londonriots”

“Some of the sentences for rioters, 4mths, 3mths, 8mths, 10weeks, Wot a big FUCK U from the govt to the innocent people affected #londonriots”

“UK PM considers banning suspected rioters from social media http://t.co/jytQVaK #londonriots agree w/ revoking benefits, but not free speech”

"RT @username: Brendan O'Neill says there's nothing political about #LondonRiots, which are being carried out by a mollycoddled mob h ...”

"’Riots were best protest ever” moron on #bbcnews re #ukriots. What proves is they got some free stuff & don’t understand the word "protest”’

What all the RAO tweets have in common is an attempt to externalise the rioters, perhaps through the juxtaposition of the pronouns us and them, or through the diagnosis of collective fault or responsibility. Within these tweets there is also a marked homogenisation of rioters, a supposition that all receive “benefits” or state welfare or are “chavs” or even, in the words of one Daily Mail commentator: “They are essentially wild beasts” (Hastings 2011). What many of these tweets also share is that they reduce any complexity of rioting behaviour, as though to recognise nuance or uncertainty would be in some way to legitimise or to excuse rioting. In some respects, these tweets echo the language of Prime Minister David
Cameron, who sought to portray rioting as “criminality pure and simple” (Cameron 2011a, b). In another, they are reflective of a far deeper, ideological condemnation of the rioters:

“An underclass has existed throughout history, which once endured appalling privation. Its spasmodic outbreaks of violence, especially in the early 19th century, frightened the ruling classes. Its frustrations and passions were kept at bay by force and draconian legal sanctions, foremost among them capital punishment and transportation to the colonies. Today, those at the bottom of society behave no better than their forebears, but the welfare state has relieved them from hunger and real want.” (Hastings 2011).

The significance of the relationship between the type of emotive expression in the PRE sample and the concentration of RAO tweets remains to be seen. For a liberal reviewer it is tempting to conclude that the condemnation and externalisation of rioters is inherently less considered, productive or rational. At this stage, however, such a conclusion would be premature.

It is true, however, that tweets emphasising the social complexity of rioting tend to group in the productive sample rather than the PRE sample and tend, also, to include more in the way of detailed analysis or commentary. The SOC code was assigned 128 times to tweets in the productive sample, and there are another 48 examples of Twitter users assigning some responsibility for the riots to the political and professional classes. It is also the case that 169 (64%) tweets in the productive sample contained links to external media, whereas only 95 (29%) did
in the PRE sample. While many of the SOC tweets depend on their embedded media to articulate fully a critical position, others do so wholly within the tweet:

"I disagree with DC, i dont think society is broken, if anything #riotcleanup shows that its anything but! And there's only a small minority"

"Violence won't end anyone's disenfranchisement, it only gives the powers that be an excuse to ignore & not resolve legit grievances #ukriots"

"KidsCo Camila making interesting point about use of war language by politicians. Reminds me Bush's war on terror rhetoric #bbcqt #UKRiots"

"Part of the problem is absent fathers"Cameron is talkin rubbish! I know plenty of children without dads but they dont loot shops! #UKriots'

Other tweets emphasise or support an argument being made elsewhere on the Web:

"He's got this spot on. #londonriots #manchesterriots #liverpoolriots #BirminghamRiots #riots http://t.co/2ZUOB9K"

“An excellent read for both left and right. UK riots: political classes see what they want to see http://t.co/WABA6v #ukriots”

“Over 1000 Arrested in UK as Anger over Inequality, #Racism Boils Ovr into "Insurrection" http://t.co/g6cvJY via @username #LondonRiots”

The assignment of PRE, PO or PC codes depends upon the individual reviewer's reading of a tweet and his or her interpretation of the coding criteria. The media codes, however, are a far more objective measure: either a tweet includes an
embedded link or it does not – there is no room for reviewer interpretation.
What is clear, then, from comparing those tweets that do contain embedded links, is that relatively few of the embedded texts are constructing arguments within the RAO, RED or LC codes. In other words, the writers, commentators and citizens cited by Twitter users within their tweets tend to be arguing that the riots are a complex phenomenon with complex social and moral causes. It is indicative of the somewhat entrenched roles within the British public sphere that RAO arguments, when they do appear, tend to be being made by writers working for traditional right wing newspapers, such as the Daily Mail and the Telegraph. It is also notable that the tweets that share these texts are not necessarily supportive of the RAO position.

“@username instead @number10gov seems intent on ignoring lessons and playing to the Daily Mail agenda http://t.co/wtKp3zH #riots”

“#DamianThompson of #Telegraph is #RACIST http://t.co/I4E1NsM #Londonriots Libya, #Africa,”

“RT @username: Max Hastings seems to think that the riots were caused by people having sex with animals. http://t.co/ZPg1sJ0 #riots ...”

The distribution of thematic codes across content categories is a product of both Twitter users’ communicative preferences and the experimental method by which those tweets are coded into categories. This limits how much can be concluded from the different associations between codes across categories. It does seem, however, that there are different forms of communicative expression taking place (different forms of meaning-making ) and that these different forms
cluster around thematic streams. The exact nature of this clustering requires further exploration, but really it should not be surprising. The flow metaphor is useful for capturing the fluidity and the unpredictability of the mediasphere, but a limiting aspect of the metaphor is that it is flattening: it implies an equal and indiscriminate potential for movement across the system, so that any information can flow anywhere at any time through any channel.

Even a cursory examination reveals that this is not the case. Culture and meanings concentrate in groups (Potts and Hartley 2014), in institutions (Lewis 2005) in practices and performances. The question in this thesis is whether or not meanings also concentrate in response to software – temporally, spatially and structurally.

Figure 12: Graph showing the distribution of coded tweets across the seven major hashtags.
The temporal and spatial dynamics of clustering are still to be explored, but by comparing thematic and content codes, it is possible to say something about the structural distribution of meanings. Figure 11 below shows the relative frequency of different hashtags across all 1002 tweets selected for content coding.

In figures 13 and 14, the same seven hashtags are displayed but these two graphs are based on the ADJ category only, and within that category PRE tweets are differentiated from PO+PN tweets. For each hashtag in each graph, there are two columns. The purple column displays the observed frequency of the hashtag within the sample; the green column displays the frequency that would be expected based on the relative frequency of hashtags in the total sample. In theory, if there is no relationship between hashtags and the type of adjunctive discussion, then there should be no difference between the heights of the two columns. If there is a difference, then it suggests that the relationship between hashtags and the type of discussion is not random: perhaps something more complex is happening.
Figure 13: The graph shows the difference between the observed and expected frequency of the seven major hashtags within tweets coded as productive adjunctive discussion. Expected values are calculated based on the frequency of each hashtag in the coding sample (n=1000).

It is possible to quantify the difference in the height of the purple and green columns beyond a visual interpretation. A simple chi squared test can assess the differences between observed and expected values across the hashtags: the calculation of that chi squared test is available in table form in appendix D. It suggests that there is a significant relationship between the hashtag categories and the PRE and PO+N categories ($X^2 = 50.72$). Considering hashtags individually, the #UKRiots appears to be dramatically under-represented in the PRE sample and over-represented in the PO+C sample. This suggests the possibility that #UKRiots may be being used in a way that is significantly
different from the other major hashtags within the riot public: to support meaning-making practices that are more productive and more engaged than those observed in the majority of tweets.

![Figure 14: The graph shows the difference between the observed and expected frequency of the seven major hashtags within tweets coded as emotional adjunctive discussion.](image)

Expected values are calculated based on the frequency of each hashtag in the coding sample (n=1000).

To further explore this possibility, a comparative analysis is performed on those tweets within the PRE (n=75) and PO+C (n=109) samples that contain the #UKRiots hashtag. The main purpose of this analysis is to explore how the thematic codes are distributed under the #UKRiots tag in the two samples. There are two steps to this simple comparison. First, the #UKRiots tweets are extracted from the two samples and second the frequency of the different codes is
analysed within each set of #UKRiots tweets. The graph in figure 14 displays these relative frequencies of the different thematic codes side by side for the two samples.

![Thematic Code Frequency](image)

**Figure 15**: A comparative analysis of thematic concerns in the productive and emotional adjunctive discussion samples.

While it appears that this graph is superficially similar to the thematic graph computed for all hashtags, there are some subtle but significant differences. While there are still differences between the SOC, RAO and O column pairs, these differences are less extreme. So for instance, the difference between the relative frequency of the SOC code is approximately 0.2 (0.32-0.13) and the difference in the RAO code is 0.1. Across all hashtags, these differences are 0.32 and 0.19 respectively. In other words, across the productive and non-productive samples, #UKRiots tweets are more similar thematically than any other hashtag.
Could this finding imply that of all the hashtags observed, #UKRiots is used more for productive discussion, analysis and commentary? This in turn might imply the existence of hashtag cultures: the construction and differentiation of meaning-making practices within Twitter’s structural layers. Unfortunately, the implications of these observations are truly difficult to assess. It is not known, for instance, whether these decimal differences in relative frequencies are in any way significant in terms of actual discourse – they could simply be artifices of the coding and categorisation processes. What is interesting though is that when examined from a variety of perspectives, it does appear that meaning is not uniformly or flatly distributed on Twitter. To explore this distribution further still, and to fully examine the implications for deliberative democratic models, a closer and more specific reading of communicative practices within tweets is necessary.

**Describing the deliberativeness of tweets**

Tweets were coded on an individual basis and as in earlier coding rounds, the tweet was defined to include both the tweet object and the primary destination of any links embedded within that object. In all cases, a reasonable attempt was made to retrieve text and multimedia content from links but broken or missing links were excluded from coding: no attempt was made to approximate or to recreate missing content. Only certain coding questions could be answered based on the destination text, however. Reviewers were instructed to award a point score for question 1, as long as the destination text articulated a moral or
political position, but could not be used as evidence of assumed comprehension (question 2). The existence of the link could be counted as evidence of external knowledge for question 3.

The logic behind this approach is simple. Deliberative coding aims to assess the commitment to deliberation of Twitter users rather than the distribution of deliberative texts more widely on the web. As such, the personal voice or active engagement of the Twitter user is paramount. It would be inappropriate, for instance, for a tweet to score full points based on a nuanced political argument made by a newspaper columnist, which appears on Twitter only through automated forwarding or flagging services. In such a case, there would be little evidence that the text contributed to the deliberative practices of human Twitter users within the riot public.

Consequently, at some point in the coding, there needs to be an assessment of the user's own engagement with the position being stated within the tweet. That point is located in question 2. In order to demonstrate comprehension, the Twitter user must represent him or herself in relation to the position somehow in the tweet text. To illustrate, consider the following two tweets.

“A different take on the #londonriots. PLEASE NOTE: not my view.
http://t.co/gj5iora”

“Excellent commentary on the #UKRiots: "People with a job, a home and a future don’t riot." ---&gt; http://bit.ly/nOfDjT”

There is inevitably difficulty is deciding whether or not there is sufficient in the tweet text to signify that the Twitter user commends or supports a position, but
in both of the above examples a personal statement is clearly attached to the link-sharing syntax. In other tweets, the lack of personal voice is relatively clear.

“Blog post on the riots - The England Riots http://t.co/npmT3cr #riotcleanup #OperationCupOfTea #Riots”

In this tweet the attached text “Blog post on the riots” reveals nothing about the user’s positioning in this context. In some tweets, however, the attachment of a position to support comprehension is less clear.

“My view on the aftermath of the England riots available on my blog - http://t.co/RgT15fc Just a sign of things to come? #ukriots”

The question is whether or not the phrase “Just a sign of things to come?” attaches the user to the positioning in the link in such a way as to score a point for question 2. Taking the tweet text at face value, this a link to the user’s own blog, and as such it seems sensible to assume that he or she comprehends the arguments being made there. However, these codes are intended to evaluate the commitment to deliberation on Twitter and, as such, personal voice is required to be Twitter specific. As such, this tweet fails to score a point for question 2, because the comprehension/articulation of the political/moral position is not made within the tweet itself.

"I say '#ukriots' - Scotland doesn’t have a Tory administration. Things seem pretty quiet up here so far. #maybenotunrelated"

The above tweet scores three on the coding scale because it satisfies every criteria except the call to empirical evidence or cultural knowledge. It combines a
rhetorical point with tweet-specific syntax. First, there is a comment on national politics that implies that the riots, at least in part, have a political explanation. Second, and linked to this first point, there is a clear political statement being made within the tweet – that the Tory administration (and, by extension presumably, its policies and practices) are, in some way, an explanation for rioting in England. The absence of a Tory administration in Scotland is linked to the absence of rioting via an appropriated hashtag: #maybenotunrelated. There is nothing in the tweet text to suggest that it is not appropriate given the prevailing (normative) culture of the (deliberative) riot public. A point is withheld for question 3 but there is a case that a call to external knowledge is being made: through the factual statement about the Scottish administration, the suggestion that other users reflect upon what constitutes a ‘Tory administration’ or, indeed, why such an administration might cause rioting. For this reviewer, these calls to external knowledge are not sufficiently explicit to warrant a point for this criteria.

The results of the deliberative coding exercise are part of the spreadsheet included in appendix C. In the summary document, the hashtag, content and thematic codes are all displayed together. There is a significant difference in the mean deliberative scores between the PRE and PO+C content categories. PRE tweets, which are those that were originally coded as emotive or reactive average 1.7 on the deliberative coding scale. The PO+C tweets average 2.9. The difference is unlikely to have arisen by chance ($z = 22.7, p < 0.0001$).

The more relevant comparative analysis is between the thematic and structural dynamics represented within the sample; an exploration of these dynamics
requires a repeat of the steps followed in the previous section. For this analysis, no distinction is made between PRE and PO+C tweets: that is a distinction imposed on the dataset by the coding process, it is superseded now by the more specific deliberative scores.

First, the 600 tweets were sorted into hashtag sets and mean deliberative scores were calculated for each hashtag. The results of those calculations are displayed in figure 16.

![Mean deliberative score](image)

**Figure 16: mean deliberative scores for each hashtag (maximum score = 4).**

Next, mean deliberative scores were calculated for the different thematic concerns (no distinction is made for hashtags). A tweet can receive more than one thematic code – it may deal with both the complex causes of the riots and critique neoliberal orthodoxy, for instance, so there is some double-counting of tweets within the mean calculations. Results for this process are displayed in figure 17.
Figure 17: mean deliberative scores for the thematic concern categories (maximum score = 4).

It appears that deliberativeness, like meaning in the previous section, is not uniformly distributed across the riot public. Some hashtags are more deliberative than others, and certain themes appear to attract specific types of discussion. It is unsurprising, for instance, that expressions of solidarity should score relatively low in the deliberative coding – after all, such expressions are not contributions to deliberation – but it is perhaps more significant that tweets coded RAO should also score quite so poorly. Indeed, the graph in figure 17 suggests that the most deliberative discussion is taking place around the complexity of causation, the influence of neoliberal materialism and the behaviour of the political and professional classes.

Indeed, if the y axis in the above graph was a scale of liberal political values, then
the thematic codes might well be ordered similarly. Of course, this may reflect
the subjectivity of the coders, but it may also imply that different subjects are
discussed in different ways, and that deliberative practices are particularly
dependent on the preferences and attitudes of the Twitter users engaging in
discussion.

Replicating the findings from the previous section, the #UKRiots hashtag is
judged the most deliberative. The sample sizes are large enough here to ensure
that the differences between hashtags are unlikely to be chance happenings (e.g.
#UKRiots vs #LondonRiots, z = 2.71, p < 0.01). Rather the relative scores of the
different hashtags are likely either to be artifices of the coding process, or
indicators of genuinely different meaning-making practices under different
hashtags.

There are two reasons to be optimistic that the latter is the case. First, there is a
logic to this conclusion: different hashtags are associated with different thematic
content. Even if a liberal reviewer scored the deliberativeness of liberal tweets
more highly, there remain real differences between the content and focus of
hashtags. This implies that hashtags are being used differently and intentionally
– they are not arbitrary signifiers – and so it makes sense that certain hashtags
might appeal to users wanting to engage in deliberative exchange. Second, the
content and the deliberative coding was performed independently and a
reasonable attempt was made to blind reviewers to any association between
these coding practices.

The results of the deliberative coding make sense in light of the content and
thematic coding. The #UKRiots hashtag was over-represented in the productive
sample; the same hashtag scores the highest in terms of deliberative coding; the SOC thematic code was also over-represented in the productive sample and in the deliberative coding tweets dealing with the social complexity of the riots also scored highly. In short, then, it appears that within the riot public, both meaning and deliberativeness concentrate around certain subjects and certain structural affordances. The challenge, of course, is to explain why this might happen.

**Describing Twitter time-space**

It is important to continue to emphasise the roles that the software, the users, the API and the researcher all play in constructing these representations of temporality. The task ahead is not to determine which measure is the best approximation of Twitter’s true temporality; rather the task is to explore these different interpretations of temporal representation and to identify which is most appropriate for the analysis – to define a specific and credible framework through which temporality might influence communicative democracy.

At baseline, there were 43,997 geo-located tweets, under 1% (0.94 % to be precise). The tweets were plotted on the map in figure 1. The map in figure 18 makes use of the same baseline data, but instead of simply mapping each tweet, it applies a clustering algorithm, which overlays a colour gradient to differentiate between areas of high and low-tweet density. Clustering analysis is performed using the open source geospatial software QGIS. First, it calculates a clustering coefficient – effectively a measure of the distance between tweets – and then shades the map differently based on this clustering measure. The more densely
tweets are clustered, the more the shading changes from blue to red. It shows clustering in the United States and in the United Kingdom especially, with Brazil and South East Asia providing other areas of dense Twitter activity.

Figure 18: a map of geo-located tweets in the API sample. Areas of denser tweet activity are coloured red.

There were only 216 geo-located tweets that contained the key word ‘riot’ (the crudest but most inclusive measure of the riot public). Whereas the baseline map suggests that geo-located tweeting is a common practice in only a few areas, those areas are spread across continents, at least to the extent that there are red areas in North and South America, Europe and Asia. In the riot sample however, the only red area is the UK, suggesting that among geo-locating Twitter users, at least, the riots remain predominantly a local – that is to say, national – concern.
Figure 19: geo-located tweets that contained the keyword ‘riot’.

Within the UK, it is possible to map individual geo-located tweets and, indeed, to append text interactively: there are sufficiently few tweets to distinguish between individual data points. Figure 20 displays UK tweets.
Figure 20: map of geo-located tweets with coordinates within the UK.

There are 149 tweets on the map above, and only three are false positive results: one a tweet in Filipino that includes the phrase “pinaka-riot na kasalan ng taon” (most riot wedding of the year) and two that make reference to a riot in non-specific sense:

"Neighbours in the next villa are very loud and unfuuny. I might start and finish a wee riot @CenterParcsUK. Nae contest"

In comparison over 50% of those tweets sent by users not physically in the UK are false positive results (n=37), indicating not only the unreliability of key word selection but also a considerable and significant discontinuity in the focus of discourse in the riot stream. Though further enquiry is necessary, it seems on
first glance that the riot public – that is, users engaged in riot-specific discourse – is primarily a national public, so that while Twitter undoubtedly enables globally distributed meaning-making, in terms of focus during the riots, it remained a national sphere of exchange.

It has been established that global geographies are increasingly fluid; people move rapidly over considerable distances, media flows across national boundaries and so on. It is an open question whether or not it actually matters where a user is physically located when he or she composes a tweet; what may be more significant is the home location or locations with which that user chooses to identify. Given an underlying space of flows, it could be argued that the riot public remains a national public as long as it conceives of itself as national. It is instructive to look at the relationship between coordinates and locations in the two samples. The ratio of matching locations is displayed in table 7.

<table>
<thead>
<tr>
<th>Coordinates</th>
<th>Tweets</th>
<th>Loc_UK</th>
<th>Loc_Int.</th>
<th>Loc_None</th>
</tr>
</thead>
<tbody>
<tr>
<td>In UK</td>
<td>149</td>
<td>127</td>
<td>2</td>
<td>20</td>
</tr>
<tr>
<td>Not UK</td>
<td>69</td>
<td>3</td>
<td>51</td>
<td>15</td>
</tr>
</tbody>
</table>

Table 8: table detailing the relationship between a tweet’s geo-coordinates and the 'home' location provided in the user profile.

Of these tweets, 149 can be located within the national borders of the UK. Of those tweets, 127 users list their location as clearly being within the UK, just two claim to be located internationally (both in Dublin) and 20 users do not provide
usable location information. For the internationally located group, only three users have UK-specific profile locations, and of course they may well be UK citizens abroad. So for the respective samples, 85% and 74% of users have profile locations that match their geo-locations, at least as far as the dichotomy between UK and non-UK located users is concerned.

**Hashtag temporality**

Figure 21 plots temporal flows for the three most common hashtags in the four sample periods. Only three hashtags are displayed to simplify the graph visually. The higher the line reaches on the y-axis the denser the flow of tweets in that five minute period. The term *stream density* is used to describe this frequency plotting: the denser the flow of tweets, the faster the receptive experience of Twitter time. In order to display all four periods on the same graph, the x-axis is compressed and five-space intervals represent the periods between data-collection windows.
Figure 21: graph displaying stream densities (tweets / five minutes) for the three most common hashtags in the riot public over the four sample windows.

One approach to exploring the influence of Twitter temporality is to compare discourse within hashtags at different temporalities. For instance, tweet content is coded and interpreted at periods of high density flow (#LondonRiots between midday and 3pm on 10 August, for example) and then compared to tweet content at lower flow densities (Pond 2015, Pond et al. 2013). This thesis proposes an additional approach, in which topic-specific discussions – that is, unified meaning-making exchanges – are both understood and categorised in terms of temporal taxonomies.

Individual users interact with hashtags, timelines, notifications and direct messages – structural affordances of an application that support flows of discordant and interactive meaning-making. What is required, then, when
classifying tweets, is a balance between the macro meaning-making potential of
the application and the more limited practices of individual users. boyd et al.
(2010) seek to describe ways in which Twitter activity may be seen to resemble
familiar communication practices, including conversational exchange. A
significant affordance of Twitter, however, is that it enables both user-to-user
conversational exchange but also the mass broadcast of meaning. Twitter’s
structure:

“disperses conversation throughout a network of interconnected actors
rather than constraining conversation within bounded spaces or groups,
many people may talk about a particular story at once, such that others
have a sense of being surrounded by the story, despite perhaps not being
an active contributor in the conversation” (boyd et al. 2010, 1).

In order to capture this potential, a classification system must respond to the
many different ways in which tweets can be topically aligned. At the micro level
of @replies and user to user exchange, topical classification is relatively
straightforward. It is possible to identify both sender and receiver from tweet
syntax and to trace the back-and-forth flow of messages between them. Grouping
tweets in this way is relatively easy, then, though not especially efficient in terms
of API queries, and it necessitates a type of analysis that, while specific, will not
much illuminate the ambient flows of meaning-making that boyd describes. The
sense of being surrounded by the story comes from follower-following networks,
retweets and hashtag flows.

When users meet online, the act of meeting in this sense becomes a “synthetic”
on-screen projection of coordination and interaction (Knorr Cetina 2009). Given
what is known about Twitter’s structural communication layers – the hashtags, follower networks and user-to-user exchanges – coordination becomes a function of two primary mechanisms: one is established follower-following networks and the other is topicality. In other words, a Twitter user is surrounded by a story either because it is a specific concern of his or her proximal network, or because the story is sufficiently prominent at the macro level. It is this second case – effectively the density of macro flows – that has a distinct temporal dimension.

The three hashtags, #LondonRiots, #UKRiots and #Riots are plotted again in figure 22 below, though in this graph the y-axis is truncated so that only the Wed_Day period is shown. In addition to the fluctuating stream densities, linear regression is used to calculate lines of best fit and these are plotted too in the same colours as the hashtag streams.

![Figure 22: stream density (SD) for the three common riot hashtags in the Wed_Day period.](image-url)
The respective R2 values for the three streams are: 0.5098, 0.3729 and 0.5858. Visually, at least, there appears to be a relatively high degree of association between all three streams. Compare this to the figure below, in which the density of the #londonriots stream is plotted against the #fail hashtag – a common example of “non-topical hashtags, which are mainly used as emotive markers” (Bruns and Moe 2014, 18). In theory, the two hashtags should be independent of each other – there is no obvious reason why #LondonRiots and #Fail should be correlated, given that the latter is generally interpreted as an independent (i.e. topically unspecific) emotive marker.

![Figure 23: stream density (SD) for two hashtags that, in theory at least, should be topically unrelated.](image)

If hashtag streams are related – that is, if the hashtags support meaning-making specific to a topic or event – then the temporality of those hashtag streams should also be related. Periods of dense flow will coincide because there will be
both an independent increase in all hashtags attached to specific meaning-making processes and also an increase in explicit hashtags association by inclusion in the same tweet text e.g. “tweet on topic A #hashtagB #hashtagC”. In effect, and in response to the research question, it is proposed that temporal alignment becomes a key indicator for identifying and categorising tweets for analysis.

The temporality represented in the preceding graphs is the rate at which new tweets are published under a hashtag, and when that rate increases the density of the hashtag stream increases also. Denser streams push more content at users more quickly, become more noticeable in timelines, are promoted by Twitter’s Trends algorithms and, in more general terms, surround more users in the trending story.

The problem is that to represent temporality in this way is to ignore many of the affordances of the Twitter application: not all tweets are created equal. Temporality may be constructed at the macro level through hashtags but it is also constructed at the level of the individual tweet; in fact, it is constructed across all the structural layers. Within the #LondonRiots stream, for instance, one published tweet may never be seen by human eyes (especially if it is published by a user with few followers) while another (from a celebrity account, perhaps) lingers long in a million timelines, is retweeted widely and promoted algorithmically owing to its inherent visibility. To ignore these differences is to ignore how Twitter works, and risks a representation of temporality that it is too reductive to be of any great value to the underlying research question.

Stream density does not differentiate between a sample of 100 tweets published
by 100 users and a stream containing the same number of tweets, but with just a
couple of publishers. The two cases produce the same number of tweets in the
same period but imply very different types of communicative practice.
Furthermore, stream density assumes that users contribute tweets to a hashtag
in normally distributed ways both within the same hashtag but also across
different hashtags.

Stream density should therefore be adjusted to account for the number of users
contributing to a hashtag during any given period – an adjustment that assumes
there is a relationship between the size of the hashtag public and the number of
contributors to that hashtag. A failure to adjust is to assume the opposite – that
there is no relationship between contributors and potential viewers. Such an
adjustment is fairly simple to make. It is a case of counting the number of unique
users in each period, in addition to the total number of tweets sent, and
calculating the ratio of one to the other. This ratio can then be used to adjust the
initial stream. The adjustment is applied to all the major hashtag streams: the
Wed_Day period is plotted in figure 24.
Figure 24: stream density (SD) for the three common riot hashtags in the Wed.Day period, adjusted to account for the number of unique users contributing to the hashtag stream in each five-minute interval.

The first observation to note is that this graph is hardly different from its predecessor. The vast majority of adjustments are minor. In the #LondonRiots stream, for instance, the adjustment ratio across the whole period is 1.007, implying a less than one per cent adjustment in total. On the whole, across the major hashtags, in five-minute periods, almost every tweet has a unique point of origin: there are very few users responsible for multiple tweets. This implies that the riot public is pretty diverse in terms of contributing users, that the hashtags are performing as might be expected for a national conversation at the macro level, and also that the stream densities plotted so far are probably valid without adjustment.
However, this initial user-focused adjustment is really just a first step in deconstructing tweet temporality. Stream density takes no account of temporal construction at the meso and the micro structural layers of Twitter communication: the interactivity of tweet flows, the influence of user networks and the specifics of user-to-user interaction.

The primary aim for a meso-level adjustment is to unflatten these differences: to represent, somehow, the effect that follower-following networks have on the temporality of tweet streams. In order to do this, a new concept is useful: *persistence*. Persistence is an attempt to acknowledge and to explore the role that follower relationships play in the construction of temporality on Twitter. Follower-following networks are one of “the most fundamental affordances which determine the flow on information on Twitter” (Bruns and Moe 2014, 16). Schmidt (2014, 4) has argued that “the basic concept guiding Twitter use is the idea of ‘following’”, placing these relationships at the very centre of a communicative structure, that “is affording the emergence of a new type of publicness: the ‘personal public’”. To state the very obvious, Twitter users have vastly different numbers of followers: the most followed account on the platform belongs to singer Katy Perry and had 74.9 million followers in September 2015 (Statista 2015b); the average number of followers in the meta sample in this analysis is 956. The variable size of these networks are likely to effect significantly the temporality of any given hashtag stream.

Persistence recognises that a consequence of differences in follower network size is that some tweets will *persist* for far longer on the Twitter platform, both because they are published to more individual timelines and also because of the
cumulative effect of this exposure, which is to promote tweets more widely across the platform through user practices (retweets, replies) and algorithmic selection.

In order to calculate persistence, an adjustment is necessary to account for the distribution of followers between unique users. To illustrate, persistence adjusted stream density is calculated for the #LondonRiots stream during the Wed_Day period. In the first instance, the number of unique users contributing tweets within each five-minute period is counted.

So, for instance, in a hypothetical scenario, between 9:00:00am and 9.04:59am, five different users each contribute two tweets and then, between 9.05:00 and 9.09:59am, another 10 unique users each contribute a single tweet: both periods have a stream density equal to 10. However, if every user represented in these two samples each has 10 followers, then in the first window, the 10 tweets will reach 50 followers, whereas in the second window, the tweets will reach 100 followers. Consequently, while the stream density is the same in both periods, the visibility of the respective sets of 10 tweets is potentially quite different.

In a persistence calculation, the followers of any user who contributes multiple tweets are only counted once within each five-minute interval. If the user sends a second tweet 20 minutes later, then his or her users are counted again. The assumption is that over a short period, multiple tweets from the same user are more likely to be associated and less likely to be persistent than tweets sent over a much longer interval. The shifting dynamics of follower attention are also likely to play a role here. It is also assumed that over longer intervals a greater percentage of the follower network will have logged into Twitter, thus
actualising the temporality of the tweets. In simple terms, that calculation assumes that it is the same users reading the tweet in the short term; in the longer term this assumption probably doesn’t hold, so users are counted again.

The graph in figure 25 shows the #LondonRiots Wed_DAY stream, initially in its original form in blue and then adjusted for persistence in pink. Persistence is a relative rather than absolute measure, so it can be scaled to fit on the same axis as stream density, in this case by a factor of $10^4$.

Figure 25: Graph comparing the stream density for #LondonRiots on Wednesday and an adjusted persistence measure for the same hashtag over the same period

Persistence has the general effect of making the stream more spiky, but a difference between these two measures is particularly notable during a couple of periods, one in the morning and the other in the afternoon on August 10. The question that needs addressing here is what that distance represents in terms of meaning-making practices.
The theory behind persistence is quite simply that an important element of temporality, certainly at the level of the individual tweet, is the number of times that the tweet appears in visible form in the timelines of different users. This is how tweets come into existence: that are composed in the minds and on the screen of users and projected on to the screens (and into the minds) of their followers. Figure 26 presents the adjusted persistence streams for all five major hashtags across the entire sample period. Three spikes, two in the #UKRiots stream and one in the #Riots stream, illustrate the enormous effect that a single user account can have on the persistence adjustment. The first spike, between 10:45 and 10:50 on Wednesday is caused by comedian Tim Minchin, who contributed a link under the #UKRiots hashtag and, at the time, had 208,106 followers. The second spike, 24 hours later, results from a tweet from a Philippines news station referencing an Al Jazeera-led story. In the #Riots stream it is a tweet from @BBCWorld, the corporation’s official world news account, that sends persistence skyrocketing.
Figure 26: persistence calculations for five hashtags across the study period demonstrating the enormous influence that a tweet from an account with many followers can have on the temporality of a hashtag.

More than anything, these outlying values emphasise the role that users play in constructing the affordances and the logics of Twitter and Twitter time. A full account of temporality must also take into account micro-level exchanges: the retweets, @replies and other affordances reveal a little about how users interact with meanings and with each other on Twitter.

RETWEET TEMPORALITY

According to Bruns and Moe (2014, 22) retweets “constitute a mechanism which is inherently designed to move tweets across layer boundaries”. They note how the retweet is a tool for controlling visibility: a user promotes a micro level
exchange to his or her followers, for instance. However, here the retweet is included with micro level user-to-user conventions because, just like these affordances, the retweet is the product of direct user-to-tweet activity. It implies a level of interaction above and beyond both macro and the meso exchanges described so far, which play more of an implicit structural role in terms of Twitter’s communicative structures.

The #LondonRiots hashtag (n = 2998) is used to illustrate the complexities of exploring retweet temporality. Searching the meta data returns a sample of retweets (a, n=733) whereas searching the text of tweets returns a much larger sample (b, n=1181). All of the 733 meta data tweets are present in the second sample, so at least the searches are not wholly contradictory but it seems that either Twitter’s own retweeting counting mechanism misses some retweets, or that there are retweets that are not really retweets – they contain RT for some other reason.

The method for identifying retweets and calculating retweet temporality is not straightforward. The code is included and explained in appendix A. It produces a retweet sample (n = 1198) for the #londonriots stream. Figure 27 displays the temporality of the retweet stream.
A retweet chain may contain just one generation of retweets – that is, the same tweet passed on independently by different users – or it may include many iterations of a tweet, either in linear or intersecting chains. It may include both. Representing temporality in such circumstances is always going to be reductive, not least because it is so difficult to find linear chains for processing. The method suggested here makes no attempt to differentiate between types of retweet within the same chain.

Retweet chains were extracted from the five major hashtag streams. A summary of those extractions is presented in table 8. The temporality of individual retweet chains is represented as the average lag between tweets in the chain. In other words, if there is a five-minute delay between tweets in a chain two tweets long, then that is the lag. If 10 tweets are sent in the same period, then the lag is 30 minutes. A graph displaying the stream densities of the overall #LondonRiots stream and the retweet stream sent under the same hashtag is shown in Figure 27.
seconds, regardless of how those tweets cluster in that period. This approach ensures that lag calculations are relatively straightforward but does risk exaggerating the influence of outlying tweets. If, for instance, in a chain seven tweets long, six tweets are published within a five-minute period, but the seventh is published three hours later, then lag is calculated across a three-hour and five-minute period. To limit this distortion, for retweet chains greater than five tweets in length, the earliest and latest tweets are not included in lag calculations.

<table>
<thead>
<tr>
<th>Hashtag</th>
<th>Number of RT chains</th>
<th>Longest chain length</th>
<th>Lag score</th>
</tr>
</thead>
<tbody>
<tr>
<td>#londonriots</td>
<td>136</td>
<td>37</td>
<td>1:14:17</td>
</tr>
<tr>
<td>#ukriots</td>
<td>96</td>
<td>72</td>
<td>0:43:07</td>
</tr>
<tr>
<td>#riots</td>
<td>33</td>
<td>53</td>
<td>0:32:29</td>
</tr>
<tr>
<td>#riotcleanup</td>
<td>28</td>
<td>35</td>
<td>1:01:58</td>
</tr>
<tr>
<td>#operationcupoftea</td>
<td>24</td>
<td>39</td>
<td>1:37:05</td>
</tr>
</tbody>
</table>

Table 9: the characteristics of retweet chains extracted from the five most frequent hashtags. Lag is the average delay between individual tweets in the chain.

The length of a retweet chain is a fairly poor representation of discourse, in that it can be heavily influenced by a single user having a large number of followers. The longest chain in any of the hashtags, for instance, at 72 tweets long, features 71 copies of the following tweet object:
“RT @timminchin: Sorry, probably late to this: http://t.co/vdmIfWl ... humiliating looters via the magic of photoshop. #ukriots (via @jus ...”

The account @timminchin, belonging to the Australian comedian, had over 200,000 followers in August 2011. The tweet itself links to a Tumblr site featuring apparent photographs of rioters, digitally manipulated for comedic effect. While it's quite possible that such content was popular in the riot public purely because of the meanings it signified, it is also possible that Tim Minchin's celebrity profile helped drive some of that popularity. Table 9 shows the length of the longest retweet chains in the #LondonRiots stream and the corresponding lag for each of those chains.

<table>
<thead>
<tr>
<th>Retweet Text</th>
<th>Chain length</th>
<th>Lag score</th>
</tr>
</thead>
<tbody>
<tr>
<td>&quot;RT @Gerard_McCarthy: I'm actually speechless at the stupidity of this guy... #LondonRiots <a href="http://twitpic.com/63x4bl">http://twitpic.com/63x4bl</a>&quot;</td>
<td>7</td>
<td>0:21:38</td>
</tr>
<tr>
<td>&quot;RT @sampepper: Everyone tweet @BBCNews and tell them to &quot; check out #OperationCupOfTea our solution to the #londonriots <a href="http://t.co/1bf0">http://t.co/1bf0</a> ...”</td>
<td>19</td>
<td>0:47:48</td>
</tr>
<tr>
<td>“RT @CitizenRadio ICYM: New #CitizenRadio: #ALEC\u2019s prison slave labor, #Londonriots, Mississippi hate crime killing <a href="http://bit.ly/r3DeJQ">http://bit.ly/r3DeJQ</a>&quot;</td>
<td>37</td>
<td>0:00:13</td>
</tr>
<tr>
<td>Status Code</td>
<td>Text</td>
<td></td>
</tr>
<tr>
<td>-------------</td>
<td>------</td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>&quot;RT @Prince_of_Wales: Mother is thinking of putting these posters up around Buckingham Palace! #londonriots #riotsuk <a href="http://t.co/EAYaYZ4">http://t.co/EAYaYZ4</a>&quot;</td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>&quot;Lmao. RT @ged: Nigeria’s President Goodluck Jonathan deploys MOPOL to London [SATIRE] <a href="http://pastebin.com/ZbeSiTBL">http://pastebin.com/ZbeSiTBL</a> #londonriots #ukriots&quot;</td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>&quot;RT @toastlovesyou: Brilliant! people are getting creative with the photos of looters! <a href="http://t.co/jD4BxDK">http://t.co/jD4BxDK</a> #OperationCupOfTea #londonriots&quot;</td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>&quot;RT @GdnPolitics: Full text of Cameron's speech on #ukriots #londonriots now up on No 10 website <a href="http://bit.ly/nhmzdk">http://bit.ly/nhmzdk</a>&quot;</td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>&quot;RT @PeterTatchell: Cameron wants looters jailed. Let’s start with MPs who looted the expenses system #londonriots #UKriots #duggan #Love ...&quot;</td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>&quot;RT @guardian: Full text of Cameron’s speech on #ukriots #londonriots now up on No 10 website <a href="http://bit.ly/nhmzdk">http://bit.ly/nhmzdk</a>&quot;</td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>&quot;RT @GdnPolitics: Full text of Cameron's speech on #ukriots #londonriots now up on No 10 website <a href="http://bit.ly/nhmzdk">http://bit.ly/nhmzdk</a>&quot;</td>
<td></td>
</tr>
</tbody>
</table>
Table 10: table showing the tweet text responsible for the longest retweet chains within the #LondonRiots stream.

The relationship between chain length and lag period suggests little evidence of any association: longer retweet chains do not appear to demonstrate systematically shorter or longer lag periods. This could suggest one of two things. Either the delay between retweets in a chain is a poor representation of engagement or meaning-making within that chain, or it is a valid measure but only a small part of a much larger picture. It is also possible, of course, that down at the micro level of analysis, the riot dataset is too limited: for what it’s worth, the logic of big data analysis relies on the dataset remaining large to identify systematic patterns. The graph in figure 28 shows the chain length-lag relationship for retweet chains across all the hashtag streams.
Figure 28: scatter graph showing the relationship between retweet chain length and the lag between individual retweets within that chain

The graph implies a very mixed picture, with huge variation in lag period especially for shorter retweet chains. As chain length increases, however, over five tweets and especially over 10, then lag periods become predictably short. This suggests that retweet temporality is both very unstable – or hard to approximate for short chains – but also that the temporality of retweeting practices may be hard to conceptualise in a linear way.

An honest appraisal must conclude that retweet temporality, conceptualised and measured in this way, is unlikely to support productive and insightful investigation. Even the 10 longest chains exhibit considerable variation in lag scores and there is simply no way of knowing, at this stage, whether a lag score of 9 minutes 49 seconds (chain = 72) is demonstrably different from a lag score
of 15 minutes 26 seconds (chain = 9). As such, retweet temporality will not be used to pursue and categorise meaning in the subsequent analysis. Far more work – both in terms of conceptualisation and calculation – is required to develop this metric, and that work is beyond the scope of what is possible here.
CHAPTER SEVEN

DISCUSSION

INTRODUCTION

This discussion chapter aims to tackle each of the research questions in turn, providing a summary of major findings, conceptual implications and recommendations for further investigation. In doing so it will reflect extensively on the analytical work conducted in chapter six, before applying that work to a substantive discussion of Twitter and communicative democracy. It will describe and critique Twitter-enabled discourse during the London riots and situate meaning-making within the wider struggle to signify.

QUESTION 1: WHAT ARE THE FEATURES OF DISCOURSE IN THE RIOT PUBLIC, AND HOW ARE THESE FEATURES DISTRIBUTED ACROSS TWITTER’S SOFTWARE-STRUCTURAL LAYERS?

Working towards an understanding of how software might shape communicative democracy is an incremental process. Part of this process involves recording and classifying discourse on Twitter. Until this step is complete, it is impossible to determine whether or not meaning-making might reasonably be called democratic, let alone determine what role software plays in calibrating that democratic potential.
In order to assess the feature of discourse in the riot public, a combination of methods were applied at the different structural layers. These methods included automated machine-reading techniques, content and thematic coding, and close textual reading to score democratic potential. Clearly this approach has the benefit of being comprehensive though could be critiqued for not being especially discerning. There is, however, a good reason for experimenting with a variety of approaches for exploring and analysing discourse.

As the literature review demonstrated, there is not yet a methodological consensus about the social study of Internet technologies – researchers have tended to use tools and techniques that are available and appealing to them on an individual basis. Some researchers have called for a more standardised and comparable set of methodological frameworks (Bruns and Stieglitz 2013, 2012) but as yet there is no consensus in the area. Furthermore, ideology underwrites many of the logics used to promote particular methodologies: the power of big data (Bowker 2014, Crawford et al. 2014, boyd and Crawford 2011, Anderson 2008), for instance, or the typology of Web 2.0 (Morozov 2013b, a). In addition to an exploration of riot discourse, then, this thesis seeks to contribute to a methodological consensus project through the evaluation of different methodologies.

Machine-reading techniques are inherently limited by the need to reduce complex representational systems into computable logics. Put simply, when countless ideologies, value assignments and signification struggles must be rendered into floating point sentiment scores or a human-readable word cloud, it is inevitable that nuance will be lost and systemic complexity will be
underestimated. This proves to be the case in the riot public but attempting to calculate and track sentiment over time reveals some important insights about the sentiment-scoring method.

1. Tracking average sentiment over time fails to distinguish between highly polarised and broadly consensual discourse streams. Hashtag streams can support a range of attitudes attached to the same signifier. Average sentiment scoring ignores this variation and can make very different forms of discourse effectively appear the same.

Within the major riot hashtags, when sentiment scores are adjusted to reflect both polarised sentiment and the number of contributing tweets a complex picture emerges: both positive and negative sentiment appear to trend towards zero, which suggests that the different meanings represented in those sentiment (anger, frustration, excitement?) may become less extreme over the study period. There is also some evidence of a relationship between retweeting practices and sentiment: longer retweet chains with shorter lag periods appear to be less subjective. However, these are not judged to be substantive conclusions – rather they reflect the reductive uncertainty of the sentiment method. While it was possible to suggest useful improvements to average sentiment scoring, considerable work is still required to develop automated sentiment scoring into a productive tool for social and cultural analysis.

Some of the limitations of keyword signification have already been discussed, and those limitations apply to the language processing engines used to drive automated content analysis. Word clouds permit a summary perspective on relative representation at the hashtag level, but are reductive and require a great
deal of interpretative reading. This interpretative reading can be applied comparatively, however, to look for shared themes across hashtags.

2. Automated content analysis suggests that key themes in the riot public include the rioters themselves, framed more as looters rather than protesters, and the role of state, especially as represented by Prime Minister David Cameron and the police.

This comparative word cloud analysis was used to inform the periodic tracking of specific keyword frequency. Again, this tracking relies on a fairly reductive interpretation of the relationship between keyword and meaning, but it reveals some curious trends within the broader signification categories. An important question for this thesis relates to the way that the UK state worked to reassert control over its rioting citizens, and the mediated struggle to legitimise extraordinary and punitive judicial procedures. Within this broader narrative conflict, two competing signification struggles are important. First, it is clearly beneficial to the conservative state to define the rioters as transgressive others: as criminals and looters. Second, to reassert its own legitimacy, the state must establish and publicise its power to resolve the transgression: to arrest and to punish the rioter.

Within this narrative framework, the role of the prime minister becomes particularly important and this is reflected in the riot public. David Cameron is the wounded state personified, and as the machinations of state power creak into action (an emergency parliamentary session, extraordinary police deployments, special judicial procedures), the keyword ‘cameron’ becomes relatively more dominant in the hashtag streams.
This raises an important question about the interaction of the riot public on Twitter with other domains in the mediasphere and with formalised institutional democracy. It is misleading to suggest that Twitter supports discourse in isolation – it is deeply embedded in the wider media ecology, meaning that it interacts with other media forms and with mediated public discourse. Temporal changes in relative keyword frequencies must be interpreted in light of the dynamics of this wider public discourse.

3. Tweets are textually and temporally far more complex than previously assumed. The notion of the tweet as a unified and contained object, in terms of software, meaning or time-space, breaks down on closer examination of tweet form and signification.

Nearly two-thirds of the tweets (61.4%) sampled for content coding contained links to external media objects, that is text, images or video stored elsewhere on the web. For each tweet containing a hyperlink, meaning resides partly within the tweet object itself and partly within the external media. Within these external media objects, there may be other links to further media. The deferral of meaning has implications for the tweet as a unified temporal object as well.

Tweet temporality must involve a negotiation of these different locales. A tweet that links to an image of a burned building engages with many temporal scapes: the immediacy of the hashtag stream, the longevity of the image, the building’s architectural and social past and an unknown burned-out future. Even ignoring these complex social and psychological evocations of time, the act of user-interaction with the tweet is complicated by the link to the image. Temporality will depend upon whether or not the link is clicked, or if the image is viewed, or
if the tweet contains commentary that invites reflection or feedback. In short, much like any sign, the tweet resides within a system of meaning and temporal deferrals. The stubbornness of the system to defy categorisation is an open question: certainly its complexity is resistant.

It is important not to deny this complexity – to recognise that tweets are unstable signification objects – because it is a reminder that simple categorisations of meaning (sentiment, keywords, content codes), while appealing, may also be misleading. However, it is also necessary to limit this complexity somehow, to permit the construction of knowledge categories and to make Twitter discourse available for study.

In this thesis, hyperlinks are followed to their immediate destination and linked media is included in any analysis of content, themes or deliberative potential. This decision is justifiable: by including a link within a tweet, a Twitter user can reasonably be assumed to be assigning value to the destination media, but any further deferral involves too many assumptions about user intentions.

4. Twitter was primarily used for link sharing and adjunctive discussion during the later stages of the 2011 UK riots.

There is surprisingly little in the way of informational or organisational communication in the riot public during the study period, which would tend to contradict those democratising logics of social media that emphasise the coordinating potential of the technology. As far as research into the riots is concerned, there has never been any evidence that Twitter was used to organise rioting, though the Prime Minister did appear to raise this possibility in
parliament and suggest that the police could be authorised to “close them down” (Hansard 2011, 1077).

The riot clean-up movement was associated with Twitter in a great deal of media coverage (Davies et al. 2011), but though the hashtag is certainly present in the data samples, there is little evidence of it being used to drive connective action. This may be because these tweet samples do not coincide with the organisational phase of the clean-up movement (in London, certainly, many clean-up groups began to be organised on Monday, though clean-up efforts continued through the study period and were only just beginning elsewhere in the country). Alternatively, it may be that the #RiotCleanUp hashtag – cited as evidence of the coordinating effect (Ball 2011) – was misinterpreted as a signification tool. It should be noted that the #OperationCupOfTea hashtag, itself a Twitter campaign, seemed to serve primarily as a tool to help users collectivise an identity in opposition to the rioters.

Similarly, there is little evidence that Twitter was used to provide situational information or to facilitate hyper-local communicative exchange. While this may be explained by the timing of the sampling periods, there is also an argument that Twitter’s macro-level affordances work against local coordination and situational information exchange in all but exceptional circumstances. Put simply, as soon as a hashtag stream reaches a certain level of activity, it ceases to be an efficient tool for sourcing and sharing local information. Situational exchange requires relatively few users contributing and responding to tweets – so that each tweet has a chance to be seen and each user has a chance to identify relevant information.
5. The situational efficacy of a hashtag is inversely proportional to its popularity – to the density of discourse flow.

Many of the links shared through the riot public direct users not to informational content but to some form of adjunctive discussion. Within this broad content category, tweets are further distinguished by being either productive or non-productive, and by their thematic content. The difference between a productive and a non-productive tweet is unavoidably a matter of reviewer interpretation. The coding criteria are relatively simply, however. A productive tweet must include some form of commentary or opinion, while a non-productive tweet is purely an emotional reaction. Within the adjunctive discussion category (n=593) there are 266 tweets categorised as non-productive and 327 productive tweets. Across the coding sample, then, 33% of tweets are coded as making some sort of productive contribution to riot discourse.

Both productive and non-productive discussion tweets are interpreted as being contributions to riot discourse – the term is used in its general sense, to describe shared meaning-making practices, rather than Foucault’s narrower definition, which is concerned specifically with power. In order to contribute to discourse, a tweet must represent an individually held meaning (i.e. it must assign some value to some form of knowledge). This representational assignment, however, does not on its own imply a productive or deliberative contribution. Assigning value can be rational and considered but it can also be emotive and reactive.

The distinction between productive and non-productive tweets does not influence subsequent coding strategies: all adjunctive discussion tweets are evaluated for thematic content and deliberative potential. There are two reasons
why the distinction is useful however. First it assists in the initial content coding process: being able to distinguish between types of discussion helps construct the broader discussion categories. Second, it is useful to have this distinction to return to after thematic coding and, especially, after deliberative scoring, because it can act as a validation mechanism – a reference point to make sure that later coding decisions do not contradict earlier readings.

6. There are two dominant thematic concerns in the riot public:

   • Discussing the social, moral and cultural causes/explanations for the riots.
   • Establishing the rioters as others: a group external to and transgressive of social and cultural norms.

It is worth reflecting on the different emphases within these two thematic categories. The semiotic struggle around the word ‘rioter’ is particularly significant in light of the corresponding political struggle. The tension between the different representational positions – rioter as criminal versus rioter as protester – plays out in predictable fashion, with conservative politicians and newspapers emphasising destruction and looting, while liberal commentators urge contextual understanding.

7. Social complexity arguments are over-represented in the productive discussion category while rioter as other claims are over-represented in the non-productive category.

Tweets that share media content tend to promote socially complex explanations of rioting. An analysis of media content within the productive ADJ category
reveals that 49% of tweets containing links are coded SOC, implying that some sort of constructivist argument is being made. The SOC and RAO codes are also distributed differently across software-structures: the #UKRiots hashtag, in particular, contains more SOC tweets than might be expected and the hashtag is over-represented in the productive compared to the non-productive sample. Further investigation is required to explain why this might be, but it is clear that discourse flows are not flat on Twitter.

8. Content codes and thematic categories are not evenly distributed on Twitter; they appear to concentrate in software-structural layers (hashtags) in ways that appear associated with the type of adjunctive discussion within tweets.

The #UKRiots hashtag, for instance, has far more SOC tweets than any other thematic category, but within the hashtag, the differences between productive and non-productive frequencies are less than the averages for the whole coding sample. This observation is important for a couple of reasons. First, it confirms that there is an association between the thematic subject – social causes of rioting – and the interpretative coding (productivity). Second, it suggests that there may be a relationship between the #UKRiots hashtag and productive intentionality. This might imply the existence of hashtags cultures: the construction and differentiation of meaning-making practices within Twitter’s structural layers.

Over half of the tweets examined during the close reading phase of analysis were assigned an adjunctive discussion code. In itself this is a significant observation, because while Twitter is used extensively as a link and information exchange, it
clearly also enables users to engage in meaning-making practices. Not all of this meaning-making is productive, and certainly not all of it is deliberative – the struggle to signify is emotional and reactive at times – but a significant number of tweets are productive. Even with the 140-character limit, Twitter users are able to state a range of value positions and to support those positions with personal commentary and calls to shared knowledge.

The major hashtags support discourse across a range of concerns and it is noteworthy that certain themes and certain types of tweet concentrate in certain hashtags. The full implications of that observation will be discussed in the next section: it appears that Twitter’s software-structures not only enable different types of speech act, but that they may do so in systematic ways – or, at least, in ways that can be described systematically, or categorised, at the different structural levels.

There are several important thematic concerns in the riot public. The first is establishing some sort of causal framework to explain riot activity – a popular sociology of the riots and the rioters. The second thematic category is constructed around claims that rioting is a reductive act and that rioters transgress the social collective, not only through their rioting but through their social action more generally: through their cultural norms, their perceived lack of morality, their economic dependency and so on. It is easy to frame this position in opposition to the first, to cast an empathetic liberal group against a reactionary conservative one, but this risks both reducing the complexity of the discourse and imposing tired political tropes on discourse that is far more alive and engaged than this.
In addition to this tension between a complex and reductive sociology of rioting, a large number of tweets question the appropriate response to the riots, though within this category positions vary dramatically – there are angry attempts to incite the state into violence and warnings that such reactions risk social schisms and escalations of violence. Another important theme for Twitter users is the culpability of the political and professional class: clearly the global financial crisis (2008) and the political expenses scandal (2009) remain raw wounds for the riot public – a live and present history, as it were. These events are used repeatedly to implicate politicians and bankers in their own form of looting, often as part of a rhetorical attempt to undermine a hard-line or reactionary politics.

A final thematic category discusses the role of the media during the riot. Within this category there are independent concerns, one of which is the role of social media, including Twitter itself. Several tweets address David Cameron’s apparent lack of understanding of Twitter – a claim that is made repeatedly in response to his statement in parliament in which he discussed authorising police to intervene in social media channels.

What this very brief summary of riot discourse illustrates is that there are both a range of views and topics being represented and, within this representational spectrum, some important categories in which the struggle to signify is particularly active or engaged. Furthermore, discourse is not flat, which is to say that meaning does not flow randomly across hashtags, follower networks, time and space. Rather, what appears to be happening, is that discourse concentrates in certain channels: certain types of tweet dealing with certain types of content.
are more likely to be found under certain hashtags at certain times. It is not sufficient to rely solely on software-structures to explain this phenomenon – why should #UKRiots signify a forum for productive exchange more so than any other hashtag. A relationship may have been established but there is not, as yet, any form of explanation for the relationship. To develop an explanation, it is necessary to combine insight from the first two research questions and to pursue a temporal-spatial analysis of meaning-making.

**Question 2: Is there evidence of deliberation, or at least of discourse that does not preclude a normative deliberative model?**

The deliberative analysis attempted to apply an interpretation of communication based on Habermas’ normative validity claims, using criteria developed to suit the requirements of the research questions and adapted to respond to the peculiarities of tweet utterances. Such an approach assumes that tweets represent individual positional statements vis-a-vis the thematic concerns of the riot public. Deliberative potential is thus dependent on the mode of engagement between tweet and thematic concern: the more criteria that the tweet satisfies, the more deliberative it is assumed to be.

This approach reveals structural differences between hashtags: some are consistently and systematically more deliberative than others.

9. In terms of a riot public, the #UKRiots, #LondonRiots and #Riots hashtags were the most deliberative, with #OperationCupOfTea
scoring significantly lower

It appears therefore that deliberation is associated with thematic concerns and that certain hashtags have specific thematic intent. In other words, both deliberation and thematic discourse tends to aggregate within some riot-related hashtags but not all. #OperationCupOfTea, for instance, was used for a particular non-deliberative purpose: for displaying weak-tie solidarity with a campaign of representational resilience.

More generic hashtags tend to be appended to a wider range of thematic messages, and so have the potential to be associated with deliberative discussion in a way that #OperationCupOfTea does not. It is tempting to suggest that this specificity is directly proportional to the deliberativeness of hashtags, but the relationship is too inconsistent to assert this with any confidence, and the specificity of a hashtag is an interpretative assignment. So, while the three lowest scoring hashtags in terms of deliberativeness were #OperationCupOfTea, #ManchesterRiots and #BirminghamRiots (which for different reasons signify quite specific contexts), #Riots (the most generic hashtag) is not much used for linking and #LondonRiots (again, seemingly specific) is used more heavily for linking, but is not as deliberative as #UKRiots.

The fact that external media may be responsible for certain hashtags appearing more deliberative than others does not necessarily condemn the legitimacy of the tweet as deliberative utterance, but it does underline the importance of this particular affordance in the riot public. It also raises questions about the temporality of deliberation. The real-timeness of the tweet may be at odds with the enlightenment principles of normative deliberation; it is when the
temporality of the tweet can be extended (through hyperlinking and unfurling texts) that deliberation seems more probable. Paradoxically, this unfurling defers meaning—there is always another link to click, another argument in another text—which presumably makes consensus all the more difficult.

However, deliberation is distributed unevenly across thematic concerns as well as hashtags. Certain positions are associated with deliberativeness, and others are not. It is important to reiterate that this association could be a product of reviewer political preferences (favoured arguments are coded as more deliberative), but the specificity of the criteria and the double-blind scoring should have mitigated against this.

The neoliberal critique code (NLC) was scored the most deliberative followed by the liberal critique (LC), as should be expected, given that these codes imply a relatively advanced form of political critique. Neither were assigned particularly often, however. Their high deliberative scores may be partly explained by the relative infrequency of assignment. The same cannot be said for the social complexity (SOC) and political responsibility (POL) codes, which were assigned far more frequently.

Perhaps those Twitter users who hold politically liberal ideas are genuinely more deliberative than conservatives, but these observations raise an important question: do the scoring criteria—and by extension the normative deliberative model itself—favour liberal ideology? In other words, will an argument that emphasises the complexity of causation and assigns cross-class responsibility always seem more deliberative than one that reduces responsibility to individual agents and blames moral failings? This is not simply a question about
communicative action and the scoring model. Many of the more deliberative tweets scored highly because they included links to external media texts, which called on external knowledge to make complex statements of comprehension and explanation. Many of these texts were written by ‘professional’ journalists and commentators for liberal media outlets. There is a distinct possibility that deliberation, as identified and scored here, simply characterises a culture and style of discourse among certain commentators in a certain domain of the mediasphere.

If this is a particularising style of discourse, then it suggests that rather than enabling engagement between liberal and conservative positions, Twitter permits these positions to circulate independent of each other.

10. The hashtag suggests coordination but the association may be illusory: within hashtags there are discourse cultures that, effectively, speak different langues. Deliberation, then, rather than being a democratic ideal, is simply a dialect within wider language wars. There is no evidence, even, that different dialects speak to each other: deliberation may be a marker of difference rather than a route to consensus.

Much of this discussion is speculative – from an empirical perspective, conclusions from the deliberative scoring must be cautious and contextual. Deliberation varies between communicative structures and thematic concerns. It seems that both meaning and deliberativeness concentrate around certain subjects and certain structural affordances.

However, the discussion so far has approached deliberation from the perspective
of Habermas’ validity claims only and has made no mention of his ideal speech conditions. This is a reductive interpretation of communicative action and a reductive exposition of Twitter’s affordances. Deliberation depends on more than individual Twitter users engaging fully with thematic concerns: they must also engage with each other productively. Ideal speech requires that Twitter users:

- Have equal and symmetric opportunities to contribute.
- Have the ability to raise any proposition or position.
- Allow a “full and equal” consideration of propositions and positions raised. (Jacobson and Pan 2008).

An assessment of ideal speech requires an overview of discourse – a review of these three criteria across the riot public. In turn, that requires some thought about the affordances that enable Twitter users to engage with each and the distribution of those affordances across the structural layers.

First, is there evidence of equal and symmetric opportunities to contribute? The evidence collected so far rather suggests not. Specifically, it has been observed that follower numbers have an overriding influence on the persistence of tweets. Hashtag streams are dramatically reshaped by tweets from popular users – the personal public dominates the macro public. Furthermore, these popular users stimulate far greater engagement with their tweets: the longest retweet changes started with celebrity and institutional accounts. An analysis of follower numbers in the riot public reveals that there are only nine accounts with more than 50,000 followers. One of those accounts belongs to a celebrity comedian,
one a celebrity YouTube blogger, and the others are all media ‘institutions’. This raises a significant challenge to the idea that Twitter liberates information flows from established hierarchies: the accounts that dominate in the Twitter network tend to be influential offline too.

<table>
<thead>
<tr>
<th>Account</th>
<th>Followers</th>
</tr>
</thead>
<tbody>
<tr>
<td>timminchin</td>
<td>208106</td>
</tr>
<tr>
<td>WTFSexFacts</td>
<td>69168</td>
</tr>
<tr>
<td>TelegraphNews</td>
<td>54843</td>
</tr>
<tr>
<td>ANCALERTS</td>
<td>287419</td>
</tr>
<tr>
<td>ZDFonline</td>
<td>54460</td>
</tr>
<tr>
<td>BBCWorld</td>
<td>915703</td>
</tr>
<tr>
<td>cnntech</td>
<td>52608</td>
</tr>
<tr>
<td>MotherJones</td>
<td>66488</td>
</tr>
<tr>
<td>sampepper</td>
<td>205492</td>
</tr>
</tbody>
</table>

Table 11: the most frequently followed user accounts in the riot public are predominantly celebrity and media accounts.

Second, does Twitter permit users to raise any proposition or position? This would appear a straightforward question, in that Twitter places few restrictions
on the utterances of its users, and hardly any tweets failed the appropriateness test (which, in any case, was a coding test and not an extrapolation of Twitter's permissions system). However, as Geiger (2009) has argued, digital media like Twitter are complex algorithmic systems for promoting content differentially: while some tweets reach large audiences, others do not. While transmission may be egalitarian, reception can be discriminatory. If this discrimination systematically silences particular propositions or particular persons or groups, then Twitter does not permit any person to contribute any proposition to the public forum: in other words, ideal speech requires that Twitter's communicative layers interact deliberatively: all tweets must be born equal.

Clearly this is not the case. As van Dijck and Poell (2013) note, popularity is a central driver of content sharing, and Twitter's follower-following dynamics ensure that popularity is inherent to position and status. Furthermore, the algorithms that promote tweets, including those that identify trending topics and suggest content, operate according to metrics that are part popularity-based, part commercial and part unknown.

In other words, if Twitter prevents a full and equal consideration of propositions (criteria three), then this in turn undermines criteria two, because the difference between speaking and being heard is greater and more complicated because of systematic and algorithmic differentiation, much of which may be hidden from users.

Having said that, Twitter does not have to satisfy every normative ideal to surpass existing media channels in terms of deliberativeness, and more deliberative (even a little more) is theoretically better for democracy. So the
question, really, should be: does Twitter offer more opportunities for more users to raise, consider and respond to propositions compared to alternative media?

This question asks for affordance-specific analysis. To be properly deliberative, a hashtag needs to support different thematic concerns, to satisfy the validity claims and to display sufficient evidence of user-user interaction (@ replies) and interaction between the structural layers (retweets) (Bruns and Moe 2014). At the same time, the retweets and @ replies need to suggest that Twitter is doing more than other media to limit structural bias (for example, ignoring low status users with few followers).

Figure 28: graph showing the percentage of the combined #LondonRiots and UKRiots streams that are retweets

It makes sense to conduct such an analysis on the hashtag streams that scored best in the validity claim coding: #UKRiots and #LondonRiots. First the numbers
of retweets, as a percentage of total tweets, for the combined streams is displayed in figure 28. Across the entire study period, there were 5197 tweets sent under these two hashtags, of which 2145 (41%) were retweets. The other five hashtags combined (n=2948) contained 1066 retweets (36%). So in the more deliberative hashtag streams, there is some evidence that users are doing more to transfer tweets between structural layers, the suggestion being that this implies reception, consideration and some sort of recommendation (or criticism, if for instance the original tweet is edited with commentary). As ever, though, these quantitative measures should be treated with some caution.

It is more difficult to count user-user engagement within the #UKRiots and #LondonRiots streams because of the more general syntax involved and the way that Twitter encodes this interaction into metadata. There is a data field that records a direct reply to a previous tweet, but this does not capture the full extent of user-user interactions, only those that operate through Twitter’s in-built retweet methods. There are 240 replies in the combined stream (5%), which suggests that there is little in the way of inter-user dialogue (and, indeed, less than under the other hashtags – 9%). Such low user-user interaction replicates findings from other studies (e.g. Pond 2015) and is clearly problematic for a literal interpretation of ideal speech. If Twitter is enabling deliberation then it is through a distanciated process of exchange and reflection at the meso and macro levels.
**Question 3: How do the software-structures of Twitter shape the temporal and spatial dynamics of communication in the riot public?**

The third research question seeks to emphasise the role that software can play in shaping interactions between human users and digital communication technologies. According to the conceptual framework, that role can be imagined via categories of logic, of which two broad types emerge: communicational and organisational. Organisational logics are those that supposedly connect and coordinate the Twitter public. Communicational logics influence the way that communication happens within that public, both in terms of engaging individual users in collective discourse and shaping the type of discourse that happens.

The investigative and analytical work aimed to elucidate these communicational logics, emphasising the role of certain communicative structures – the outcomes of interactions between human users and software-enabled affordances – including hashtags, follower networks and retweet practices. Several empirical measurement techniques (metrics) were developed to frame the study of these different structures. Those measures, and the outcomes of their application, are reviewed in this phase of concluding discussion.

The conceptual framework also established that temporal and spatial dynamics are particularly important for understanding the relationship between communicative structures and meaning-making. Pursuing that logic, the analysis began by trying to arrange riot-related discourse into categories that could be described temporally. These attempts produced an early methodological conclusion:
11. Key words are poor signifiers for meaning when defining a Twitter public and requesting information on that public from the API. The elusiveness and instability of the sign is well established in communication theory – there is nothing surprising about this first conclusion (Lewis 2008). However, there are practical implications because of this instability, mostly because keyword searching is a staple of Internet methods (where admittedly methodological rigour must be balanced against the practical possibilities of data capture). It is relatively easy to submit a keyword (or a matrix of keywords) to an API and then to analyse the resulting data as though it were somehow a unified and coherent public. However, the attempt to replicate this approach with the riot keyword clearly illustrated its limits, which included both a propensity to identify false positive tweets and considerable issues with representation (relating data to actually meaning-making practices).

12. Hashtags are a more reliable signifier of discourse on Twitter but there are temporal complexities that challenge the established perception that hashtags “help to coordinate the exchange of information relevant to… topics” and signify “a wish to take part in a wider communicative process” (Bruns and Moe 2014, 17-18).

The logic for the hashtag as a coordination mechanism for deliberative discourse depends upon two factors. First, Twitter users must knowingly use the hashtag to align their tweets with topics or with wider communicative processes, and second other Twitter users must be able to use the hashtag to find, consider and to evaluate those tweets as part of their own communicative reasoning. The issue here is that there is potentially a disconnect between how Twitter presents
to researchers through its API and the communicative practices of actual human users. If coordination is neither intentional nor recognised, then there is a epistemological challenge to the status of that coordination.

This uncertainty is emblematic of a recurrent issue in big data research. While the abundance of data points promises to reveal ‘deep truths’ about communication and meaning-making, it is often difficult to align these ‘truths’ with conceptual frameworks and real activity in the human lifeworld (Crawford et al. 2014). The hashtag is easily accessible through the Twitter API, an obvious way to collate like Tweets, easy to represent in a database and consequently easy to search during analysis. This is not to claim that the hashtag is simply a digital or data-processing artefact: it was conceived and developed by Twitter users, initially with a function something like tagging, and only later did Twitter’s developers formalise this functionality. Twitter now uses the hashtag to drive its Trends algorithms.

Nevertheless, the difference between the hashtag ‘as studied’ and the hashtag ‘as lived’ should not be flattened, reduced or ignored. This claim is best illustrated by an example. In each of the sample periods, there are potentially hundreds of hashtags that could contribute to the riot public, in that they appear to be used intentionally to signify meaning as part of a wider topical discourse. Even limiting the analysis to major or common hashtags, there are still seven hashtags with different emphases: locale, scale and intent. This plurality of signifiers calls into question the coordinating potential of hashtags: whom are they coordinating and how are they doing it? Are they coordinating human users or textual meanings? If it is users, how are those users aware of each other, and if it
is text, in what sense does the coordinated text represent discourse between human users?

13. The temporality of hashtag streams may reveal something about the dynamics of discourse coordination.

Stream density records the number of tweets published under a given hashtag in a predetermined period. According to the analysis of stream densities for the major hashtags in the riot public, certain hashtags are aligned temporally far more closely than others. This raises the possibility that discourse streams could be identified by their rate of flow in addition to textual signifiers.

This is a significant insight: stream density does not supersede text, nor can it replace text in the identification of discourse streams. Rather, stream density represents the temporality of discourse around text or, indeed, around any other structural or semiotic classifiers. The technology contributes to the construction of this temporality, shaping the flow of discourse streams, but so does the text itself, as do human users situated within social and cultural networks. In some respects, it is misleading to talk of Twitter time or network time, more widely, because such terminology implies that temporality is somehow a characteristic of the technology, whereas in fact temporality is a characteristic of practices enabled or supported by the technology. To emphasise stream density is to recognise that meaning-making practices have a temporal dimension, and that this temporal dimension can help differentiate between practices.

Temporal classification cannot precede textual classification at the level of the API. In short, temporality will always be subordinate to primary structural
classifiers. There are two reasons for this. First, the temporality of the API is rate-limited and constant: the spritzer stream returns 15,000 tweets every five minutes – there is no access to the temporality of the Twitter stream. Second, temporality is a relative measure, a marker of difference between one construct and another. It has no absolute value.

14. Twitter time is a complex assemblage of relative flows in different structural and textual layers.

Macro level textual signifiers (hashtags) are required to identify broadly contextual meanings among the mass flows from the API; within these broad categories, stream density can differentiate between the relative frequency of different textual signifiers. Such differentiation, however, only captures part of the story: the structural dimensions of Twitter construct temporalities of their own, which can distort the temporality of hashtag flows. Clearly it is important to identify the appropriate aspect from which to observe these shifting temporal flows; equally, it is important to recognise that the study of Twitter is really the study of structural and textual interactions within the Twitter ecosystem.

15. Within the meso and micro layers, users with large follower numbers appear to distort stream density, primarily through increasing the persistence of individual tweets.

The ability to follow a registered Twitter user is among the primary and defining features of the software. Following functionality enables Twitter users to construct a personalised stream of tweets, which is typically the central feature of the user interface when accessing the software through a browser or via a
smartphone application. As Schmidt (2014, 4) notes, this following functionality has enabled "a new type of publicness", through which a Twitter user may address a personalised audience of voluntary subscribers. However, the voluntary aspect of subscription produces huge differentials in public size, in which vast audiences (many millions) aggregate around very few prestige accounts, typically celebrities, opinion leaders and corporate and media institutions. In the riot public, the average number of followers was approximately 1000, but the most followed account had nearly one 1 million followers.

These differentials further challenge any notion of unified stream temporality: not all tweets are born equal. A fundamental condition for Habermasian ideal speech is that all propositions have an equal opportunity to be heard: this is clearly not the case on Twitter. Persistence calculations demonstrate the enormous impact that a prestige account can have on a discourse stream, and raise complex questions about the nature of temporality itself. Primarily, these questions relate to whether discourse is situated (and bound) within the tweet object itself or if, through publication and the transfer to other structural layers, meaning somehow escapes the tweet to become ambient on Twitter. If meaning is seen to reside solely in the immediate context of its textual signification (i.e. within the tweet), then persistence is highly relevant to an interpretation of discourse – some tweets will be far more visible, far louder, in the communicative exchange than others. If, however, discourse is located in macro-structural flows, in ambient streams, then subsidiary network structures are, perhaps, less relevant to interpretation.
16. Persistence is a metric better suited to interpreting the relative frequency of positional representations within hashtag flows.

In terms of this thesis, interest is primarily focused on macro-level meaning-making and the notion of ambient discourse within the mediasphere. What is most relevant to this focus is the interaction between stream density and persistence – to a certain extent, any effect of follower differentials on topical discourse should be implicit later on in the stream. So, for instance, if a tweet from a prestige account drives discourse towards a particular position, then that position should be represented accordingly in subsequent tweets within the same topical stream.

At the micro structural layer, temporality is influenced by retweeting, replying and recommending practices. Analysis of retweeting in the riot public reveals that retweets are a significant factor in the construction of stream density: nearly 40% of tweets in the #LondonRiots stream are retweets, for instance, and 43% of tweets in the #UKRiots stream are retweets. Retweeting has previously been used as a proxy measure for engagement (Chen and Pirolli 2012) and the implications for gauging the deliberative potential of discourse will be considered shortly. In terms of constructing stream temporality, a retweet can be theorised as having a persistence equivalent to a unique tweet from the same user. The practice of retweeting itself does not dramatically distort the temporality of the published object; although there may be temporal discontinuities for the user, in terms of tweet composition, these are unknowable post-publication. There may be user-specific Twitter practices that do distort this temporality – a user can track his or her retweets for evidence of
engagement, for instance – but these specialist uses are beyond the scope of this thesis.

In addition to the influence of retweeting on macro-level discourse streams, it must also be recognised that micro-level structures construct micro-level flows. These flows are evident in retweet chains, @ reply conversations, lists of favourite tweets and so on. An analysis of retweet chains revealed little that was linear or predictable about the relationship between retweet practices and the temporality of those practices. At the micro-level the influence of other structural dynamics is likely to be proportionally far greater.

As predicted, it proved difficult to describe Twitter’s spatial dynamics satisfactorily. While there is clearly potential to develop research methods to explore the spatiality of discourse flows on Twitter – and, by extension, to interrogate concepts like Castells’ space of flows – there is considerable work required to develop and calibrate natural language processing libraries to work with Twitter’s spatial nomenclature. Only at the meta level are sufficient Tweets geo-located to allow a meaningful geographical investigation – and there are reasons to suspect that this subset may be atypical among Twitter users. Nevertheless, comparing these geo-located tweets and all those geo-located at baseline, suggests some important conclusions about the characteristics of the riot public.

17. The riot public is predominantly a national public, both in terms of physical geography (available from geo-located tweets) and geopolitical alignment (available from location strings). While there is clearly potential for the globalisation of riot-related flows, discourse
remains principally a national concern.

Beyond this conclusion it is hard to infer much about the spatiality of riot discourse or, indeed, about the Twitter population engaged in that discourse. Retweet chains, for instance, were studied with the hope that they might reveal logical structures behind discourse flows between specific users and, by extension, about the structural relationships between those users. However, it was not possible to discern any clear relationship between the length of retweet chains and their spatiality, nor between the lag values between retweets and the distance of travel. Perhaps this undermines those representative measures, perhaps data samples were too limited or perhaps the lack of clear, linear relationships makes any structural logic problematic. Further research is necessary in this area.

There is some compelling evidence that Twitter software is shaping discourse on the platform, especially the temporal dynamics of that discourse, but the relationship between the two is neither linear nor simple. Twitter time is a complex assemblage of streaming temporalities, as multi-layered and interactive as the code in which it is instantiated. It is tempting to consider the temporality of hashtags or retweet chains as though those things were separate, unified objects within the Twitter ecosystem, but this is a misrepresentation. They are not fixed or immutable objects – they are ever-changing, shaping information flows but also being shaped by those information flows. Furthermore, that instantiation is dependent on human users and their own interactions with Twitter code and with each other. Marking Twitter time, then, is a daunting task. It can be inferred but not observed through the API, but only in a computed,
processed and packaged form, and any inference must account for the multiple structures and actors involved in its construction.

Can anything useful be concluded then from the analysis of Twitter time?

Certainly. Even the observation stated above, that Twitter time is neither flat nor uniform, is valuable and has far reaching implications for theories of time and time-space in the hyper-connected global modernity. The fact that discourse flows on Twitter are so uneven, so associated with software (and social) structures, has far reaching consequences for theories of information liberation, for the political economy of speed and, indeed, for the space of flows, because all these theories rely, more or less, on a reductive flattening of time – on the annihilation of time (Castells 2010, 1996) or the relentless logic of speed (Gehl 2011, Hassan 2009).

Time may fracture on Twitter but it does not disappear. It is not annihilated (Castells 2010). The regular rhythms of the clock may be challenged by multiple and interactive rates of communicative flow, but really this is not a new phenomenon. A social theory of time accepts competing temporal scapes and recognises that complementary/discordant interactions happen between them. The mediasphere has always been an assemblage of multiple communicative temporalities: conversations happened in person and in print. There should be nothing particularly challenging in the recognition that Twitter is a multi-temporal device capable of supporting multi-temporal discourse, unless of course a theory depends on the denial of this multi-temporality.

Furthermore, it is fairly clear from the analysis of the different structural
temporalities that some software structures exert far more influence over the flow of discourse than others. The hashtag is a dominant object in the construction of public discourse and hashtags have the potential to be extremely fast: all of the major hashtag stream, at certain times, flow at a rate that exceeds human processing capacity – at least, human capacity as it is understood by this author. The most common hashtags – #LondonRiots, #UKRiots and #Riots – are all regularly collating tweets at a rate that must surely challenge models of normative democratic communication.

In addition to the hashtag, individual users with large numbers of followers exert considerable influence over discourse streams – an influence that was captured in the concept of persistence. A textual approach to studying this effect might involve tracking the tweets of these users through their followers, or observing how textual representations replicate and spread. A temporal approach recognises that the effect of these users extends beyond what is or isn’t said in the text of their tweets – they interact with discourse streams in other ways too, bringing fresh eyes to a hashtag, amplifying the rate of flow at certain times (and not others) and increasing the rate of interaction between the macro, meso and micro layers.
QUESTION 4: CAN THE ATTEMPTS TO RECORD TWITTER TIME AND TO CHARACTERISE DISCOURSE WITHIN THE RIOT PUBLIC BE COMBINED/SYNTHESISED TO INTERROGATE THE CENTRAL CLAIM IN THE CONCEPTUAL FRAMEWORK: THAT DIGITAL TECHNOLOGIES SHAPE COMMUNICATION ENVIRONMENTS THAT RUN TOO FAST FOR DELIBERATIVE DEMOCRACY?

The final research question mobilises the conceptual framework to explore the deliberative potential of the communication technology. The task is absolutely necessary in order to interrogate the logical dynamics of digital deliberation, and to make empirical statements that have utility beyond the confines of this project. It involves the application of temporal metrics to frame comparative discourse analysis.

According to the conceptual framework, there are two categories of logic by which software can shape communication practices. Organisational logics influence the formation and coordination of networks, dismantling hierarchies, widening participation and engaging actors in new forms of collective action. They may also broaden the actors engaged in discourse. Communicational logics shape meaning-making processes within the riot public; they underwrite the flow of text (speech acts) and, in turn, shape the dynamics of signification and representation attached to those texts. Communicational logics rely on the assumption that not all types of meaning-making are possible in all communicative environments – certain conditions preclude some communicative norms but encourage others. In this understanding, the temporal and spatial dynamics of mediated discourse are particularly important. A
communicational logic is used to claim that digital media undermines democratic discourse because the flow of media is too fast – it overloads the capacity of the human brain to receive, process and respond deliberatively (Hassan 2012, Barber 2006). Similarly, some theorists point to the uncertain ontological relationship between the online and offline selves and argue that digital media somehow disconnects the actor from the discourse, complicating the relationship between signification and social action (Carr 2013).

These two examples of communicational logic are very different. Digital dualism involves a highly theoretically and speculative reading of digital time-space, but the logic behind information overload is effectively linear (and, consequently, far more comprehensible). It states, simply, that network time is too fast for democratic practices developed in a pre-digital age: while it is possible to talk about politics (and democracy) on Twitter, it is not possible to do so in a way that is actually democratic.

The network time-information overload argument lends itself to an empirical methodology. Assuming that network time can be observed (and measured) and assuming that discourse can be assessed for its deliberative potential, then it should also be possible to explore the effect of one variable upon the other. Clearly, the previous research questions were concerned, primarily, with establishing these observational possibilities: first with describing discourse in the riot public and second with measuring network time. That is why the methodology was careful to establish the empirical limits of the different analytical tools. The aim – the original intent – was to describe Twitter time in such a way that it could, with confidence, be applied to an analytical reading of
discourse.

That aim relied upon the linear association between time and discourse and that, in turn, relied upon a linear interpretation of network time. According to the literature on the subject, such an interpretation was hardly fanciful – network time is meant to be relentlessly fast, compressing and accelerating communicative practices, advancing a relentless economy of speed. Several authors had used the logic of information overload to argue against the deliberative potential of digital communication tools (Buchstein 2002).

The issue is that the early analytical findings made problematic any assumption of a linear association between network time and deliberation – it also undermined the idea of a unified and linear network time. Instead, it was observed repeatedly that the Twitter timescape was multi-layered (multi-dimensional), interactive and perspectival. Any attempt to fix Twitter time to clock time is thus fraught with difficulties. First, it is difficult to associate temporality with different Twitter practices happening at the different structural layers: should Twitter time start with the hashtag or the retweet? Second, it is difficult to know the representational importance of these different practices: does hashtag temporality have any meaning for Twitter users or is it only an issue for researchers asking questions of the API? Third, it is difficult to construct a theory of temporality based on objects that, themselves, have highly unstable and irregular moments or periods. It makes sense to focus on the tweet for communicative analysis, but the temporality of tweets is highly uncertain: it depends both upon the tweet object itself, the human-tweet interaction and also upon the life or the behaviour of the tweet object in the ‘Twittersphere’.
The notion of a unified Twitter time is unhelpful. Twitter supports a range of communicative practices, each with its own temporality. A temporal framing of Twitter discourse is only possible given a specific and justifiable limitation of temporality.

How can temporality be used to frame discourse when the notion of temporality itself is so multi-faceted? There are two possible answers to this question. The first is that rather than focus on Twitter time – the idea that the platform instantiates a pattern of pace – it is better to focus upon individual discourse streams that can be associated with a unified timescape. In theoretical terms, it seems quite likely that there is no such thing as a unified timescape, but in practical terms a unified timescape is one that can be shown to represent a temporal experience that can be reasonably plotted on a linear temporal axis (that is, in terms of clock time). Working to this definition, a unified timescape will almost certainly have to be local enough to account for the practices of individual users and, as such, it demands an entirely different approach to analysis.

Instead of beginning a study with macro-level API queries, it will be necessary to locate analysis first in the experiences of individual users and then to collectivise these observations into an understanding of constructed discourse. Such an approach could begin by identifying Twitter users engaged in the relevant type of democratic action – participation in a riot clean-up event, for instance – and then re-creating their individual engagements with the #RiotCleanUp hashtag, gradually piecing together a picture of collective meaning-making. Clearly, such an approach contradicts some aspects of the big data paradigm.
The second answer is to operate with a far looser interpretation of this pattern of pace. Rather than trying to objectify the relationship between Twitter time and discourse, Twitter time is interpreted as an ambient temporality: a macro pattern of pace that broadly (that is, generically, and without specifics) shapes the temporalities of specific discourse flows that occur within the timescape (Weltevrede et al. 2014). For example, using this approach, it can be noted that #LondonRiots is the densest hashtag stream in the riot public. Consequently, discourse streams that engage with this hashtag – either because they tweet into it directly, or through retweeting or following – will be quickened by the association more so than with a slow hashtag. This approach, most probably, precludes any sort of quantitative analysis of time-space-discourse, but does suggest a potential for nuanced qualitative readings.

This idea of ambient temporality needs some development. Clearly it is derived from the concept of ambient discourse (boyd et al. 2010) – the sense of being surrounded by a story or, more exactly, by a topical struggle to signify – and clearly that sense of being surrounded happens when a particular theme or topic begins to dominate flows across Twitter’s software-structural layers. At baseline, Twitter time is effectively constant: the API streams the same number of tweets per second all of the time: the spritzer stream returns 3000 tweets per minute every minute. Of course, that does not mean that every Twitter user is exposed to 3000 tweets per minute – exposure will depend on individual users and their following preferences. The point is that if all 3000 tweets are about the riots, then regardless of the preferences of individual Twitter users, the riots will dominate tweet streams at every structural level.
Ambience is thus the fractional representation of any given topic within the total flow of tweets in the study period. This would suggest that macro flows are the best indicator available of ambient discourse and that **hashtag stream density is the most appropriate measure for approximating the temporality of this discourse.** So, for instance, returning to the hashtag stream graphs first calculated in the methods section, and collating all seven major hashtag streams into one ambient flow, produces the graph in figure 29.

![Figure 29: Graph showing combined stream density for all seven major riot hashtags across all four sample periods.](image)

The maximum stream density values all occur in the first few hours of the first sample period on Wednesday. The maximum value is 112 tweets in five minutes. In terms of ambience, this is:

\[
\frac{112}{(3000 \times 5)} = 0.007
\]
In terms of baseline ambience then, the riot public is extremely small – it accounts for fewer than 1% of total tweets sent. This is not the full picture, however. It has been demonstrated that the riot public is predominantly a national public – geo-located users are concentrated in the UK. This concentration is significant because the delivery or visibility of tweets is hugely affected by the accounts that an individual Twitter user chooses to follow. It is highly probable – both theoretically and through the interpretation of the data – that UK-located Twitter users are more likely to follow UK accounts than users located internationally (Kwak et al. 2010). There are many reasons for this: the dominant role of celebrity accounts and the national media structures that promote those celebrities, the contiguity between physical and digital geographies, the still dominant roles of national media institutions and so on. The result is that riot discourse is likely to be over-represented within the UK Twitter public: it will be more visible in the ambient stream. In terms of the conceptual framework, this suggests that ambient temporality on Twitter is an outcome of both the communicational and the organisational logics.

19. A temporal representation of ambient discourse requires:

- A measure of discourse stream density.
- A measure of homophily: that is, a measure of the density of relationships between users contributing to the discourse.

Of course, there is nothing particularly surprising in the finding that temporality on Twitter is constructed by software, software-human interactions and human-human interactions as well: it is exactly what a constructionist perspective
would expect to be the case. Social network analysis offers several ways to measure or approximate this relationship clustering: typically, something like in-degree is used to approximate the extent to which members of a group are connected to each other (Hansen et al. 2011). A full integration of the network and temporal approaches is a complex undertaking, however, and beyond the scope of this thesis. Establishing a fully integrated framework should be a priority for future work.

This integrated dynamic has been recognised already. The significance of follower-following networks was implicit in the development of persistence as an adjusted measure of hashtag temporality. Persistence makes two adjustments to stream density: first it adjusts for the number of unique users contributing to the stream (it accounts for concentration of accounts within the stream) and second it adjusts for the number of followers of each of those accounts. The result is a metric that is a good deal easier to interpret in terms of ambient effects. A higher persistence score suggests two things: first that there is a high degree of plurality within the hashtag stream – several unique contributions rather than a few – and second that there is a large primary audience for the tweets within the stream.

Given that the riot public has been shown to be a national public, it is reasonable to assume that the primary audience will predominantly be a national audience. As such, the higher the persistence value, the larger the potential audience within the national public: in other words, the higher the persistence of a hashtag, the greater the likelihood that tweets contributed to the hashtag will be seen by Twitter users in the UK.
Hassan (2009) discussed hegemonic timescapes and it is an idea that can be extended to the interactive temporalities on Twitter. There are many different temporalities on Twitter, but one may be more dominant than the others in terms of shaping discourse and enabling (or inhibiting) deliberation.

Macro streams – both unadjusted hashtag streams and persistence – are likely to be far more influential in terms of shaping ambient discourse than retweet chains or @ reply conversations. In large part, this is simply the tyranny of numbers. The interaction between the macro and meso layers involves far more tweets and far more accounts that the interaction between the meso and micro-layers. Attempts to analyse the temporality of meso-micro interactions were hampered by the limited availability of data. So while the interactions may be highly significant for individual users in individual contexts, they are less relevant in terms of ambient discourse.

At the macro level there are two interpretations of temporality, both tied to hashtags, one of which (stream density) does not account for follower-following relationships while the other (persistence) does. There is an opportunity, then, to apply both interpretive framings to a textual reading, and to try and determine which has more explanatory power. This comparison may also reveal something about the influence of software-user interaction in Twitter communication.

This type of comparative analysis requires that both stream density and persistence can be aligned with discourse, represented by the tweets in the coding sample, but this raises an issue. It is challenging to align temporality and
discourse. This is best illustrated with an example. Figure 30 displays the persistence scores for the three dominant riot hashtags in the Wed Day period. It is possible to identify several large spikes: high persistence scores caused by a large number of tweets or a large number of followers or a combination of the two. For each of these spikes, it is assumed that the riots are more ambient than at other times, but what effect is this likely to have on discourse, and when will that effect happen? Should it be supposed, for instance, that between 10:55 and 11:00, when the #ukriots stream is responsible for a surge in persistence, that users tweeting in this period are overloaded by ambient flow, and consequently cannot deliberate?

Figure 30: combined persistence scores for the #UKRiots, #LondonRiots and #Riots hashtags

The first issue with this interpretation is that it assumes reception, deliberation
and response all occur within the same five-minute window and doesn't allow for the probability that users will read tweets for a while, then publish or retweet, and then read some more. In effect, it compresses artificially the deliberative period. If there is an effect following a spike in the ambient density of a hashtag then it might not be felt (or recorded) immediately. The second issue is that there is likely to be association between spikes. By increasing the visibility of the #UKRiots hashtag, that first spike may be partly responsible for the second spike an hour or so later. This can be seen in the temporal lags recorded in retweet chains. The stream constructs its own temporality, and so no period within the stream can be considered independent – which undermines any hope of using periodic spikes to explain variation in deliberation (Pond 2015).

The final section of this conclusion considers two approaches to a comparative application of stream density and persistence to explain the thematic and deliberative analysis of tweets. The analysis focuses on tweets collected during two four-hour windows (11.30 – 15:30) on Wednesday and Thursday. There are several reasons for the timing and duration of these windows. First, during these periods, more tweets are sent than at any other time, so the thematic and deliberative data is far richer. These periods correspond with the middle of working day UK time and the height of the 24-hour news cycle. Second, the four-hour period is considered sufficiently long to allow temporality to influence discourse (if it is going to do so) but sufficiently short to focus analysis. Clearly this is speculative: there is little in the way of research about how often people use Twitter, and there is clearly great variation. According to Pew (Duggan et al.
2015) a fifth of Twitter users visit the platform multiple times each day, but that is an American audience and, presumably, does not take into account the influence of acute events. Four hours is deemed sufficiently long at that time of day for an engaged user – that is someone who uses Twitter to engage in discourse – to visit the site and to interact with the riot public.

The graphs in figures 31 and 32 display the stream density for the two periods.

Figure 31: graph comparing the stream densities for the #UKRiots, #LondonRiots and #Riots hashtags during the Wed_Day period.
Figure 32: graph comparing the stream densities for the #UKRiots, #LondonRiots and #Riots hashtags during the Thu_Day period.

All three tweet streams decrease slightly in both windows, but that may simply reflect local temporal patterns of Twitter use (the riot public is predominantly national but the spritzer stream is global). It is surely more significant that on Thursday the #UKRiots and #LondonRiots stream are much more closely aligned to each other than they are on Wednesday. The #Riots stream is still persistently lower on the density axis, but there is again more overlap than there is on Wednesday. It may also be recalled, that over the course of the two days, sentiment scores trended towards agreement. Does this translate into a closer alignment in discourse?

Compare these two graphs to figures 33 and 34 below, which display the corresponding persistence streams for the same periods.
Figure 33: graph comparing the persistence calculations for the #UKRiots, #LondonRiots and #Riots hashtags during the Wed_Day period.

Figure 34: graph comparing the persistence calculations for the #UKRiots, #LondonRiots and #Riots hashtags during the Thu_Day period.
As was noted earlier, persistence offers a different perspective on temporality because it differentiates between users: in effect, persistence spikes when a user with a large number of followers engages with a hashtag. The effect of this engagement is that more Twitter users are potentially exposed to the hashtag – the hashtag has a great chance of being seen – it is more ambient. Consequently, what is most relevant in a visual reading of these graphs is the number of spikes during the observation periods and, of course, the magnitude of those spikes. To better illustrate the difference between the Wednesday and Thursday periods, the hashtags are pooled and persistence is plotted for Wednesday and Thursday on the same graph.

Figure 35: graph comparing persistence calculations for the combined #LondonRiots and #UKRiots on Wednesday and Thursday

It appears that there is greater variation in the Wednesday stream (the standard
deviation is nearly double that on Thursday), spikes are more extreme (there are
five greater than two times the standard deviation above the mean; only 3 on
Thursday) and the magnitude of those spikes is also larger. This suggests that
there are more high profile users contributing to the riot public on Wednesday
as opposed to Thursday. If it were more users in general then the Wednesday
average would be higher but the standard deviation not necessarily so.

The graph in figure 35 displays on the same axis the persistence calculations and
the tweet stream for the #UKRiots and #LondonRiots hashtags combined. The
tweet stream declines gradually across all four sample windows, in a way that is
familiar from other stream density graphs. So far, it has only been possible to
speculate in general terms why this might be – diurnal patterns, heightened
Twitter activity in the mornings, and so on. However, the addition of the
persistence calculations reveals that at the beginning of both the Wed_Day and
Thu_Day periods there is an enormous spike in persistence. Could it be that this
spike – this dramatic and instantaneous increase in ambient temporality – is
partly responsible for the elevated activity that is observed between 10:30am
and 1:30pm on both Wednesday and Thursday?
If this were the case, then it would support the assertion that speech conditions, whether ideal or not, are being constructed via a complex interaction between Twitter time and Twitter’s communicative structures.

It is possible to extend the retweet analysis from the previous section to explore the influence of temporality on discourse at the macro level – that is, in terms of hashtag publics. A focus on retweets corresponds to a focus on ideal speech conditions: the retweet continues to be used as a rudimentary indicator of “full and equal” consideration. While temporality may well influence the other conditions, it is the effect on the deliberative period (i.e. the period required for full and equal consideration) that is most clearly defined in the conceptual framework.
Retweeting is an indication that, at the very least, an utterance has been received and decoded. The more retweets within a hashtag stream, then the more indication there is that Twitter users are engaging with each other. The analysis discussed here continues to focus on the #UKRiots and #LondonRiots hashtags, though comparisons are drawn with the less deliberative streams. Retweets are identified using the same function as before, taking advantage of TextBlob and predictable syntax to extract both automated and edited retweets. The aim of this analysis is to see how the volume of retweets (as a percentage of the total stream) responds to the temporality of the hashtag stream.

In the first instance, the hashtags are combined and both the total and retweet streams are displayed for the Wed.Day period.

Figure 37: graph showing the total stream density and retweet stream density for the #LondonRiots and #UKRiots hashtags combined on Wednesday.
Overall, retweets account for 42% of the stream, but this number is effectively meaningless – it cannot be known whether or not 42% is sufficient to indicate deliberation. What is far more meaningful is how this percentage changes relative to overall stream density. Therefore, a quantitative analysis of the above graph should seek to assess the gap between the two lines, relative to the total density of the stream. This difference can be calculated using the following simple equation:

\[
\frac{\text{total stream density} - \text{retweet stream density}}{\text{total stream density}}
\]

If total stream density (temporality) were shaping the number of retweets, then across the sample window (in which stream density declines gradually but consistently), then it might be expected that the gap or difference between the total and hashtag streams decreases. In other words, at higher temporalities, according to the logic of information overload, then retweeting should be suppressed by weight of information flow. Conversely, as temporality slows, then retweeting should increase within the stream, indicating that more users are able to decode, process and respond to utterances. However, across the period, there is no suggestion that this is happening: the difference between total tweets and retweets remains constant (though highly variable, there is no trend either up or down). Does this suggest that temporality is having no effect on retweet practices?

One factor that has not yet been considered is that there is a threshold density, above which deliberation is markedly harder. If this were the case, then assuming that the #UKRiots and #LondonRiots streams remained consistently above this threshold, then it would explain why retweeting does not appear to
respond to temporality: the streams are consistently too fast to support ideal speech conditions. One way of exploring this possibility is to limit the analysis of retweets to those five-minute intervals when stream density falls below this threshold. The issue is that there is no a priori knowledge of what that threshold might be.

Figure 38 displays the same calculation for every interval in the study period. Retweets actually account for a lower percentage of the hashtag stream on Thursday evening/night (when overall stream density is lowest) than they do at any other time. Across the full study period, the gap between stream density and retweets actually trends upwards: in other words, despite stream density falling, there is no quantitative evidence that this is having the effect of increasing retweet practices.

![Figure 38: graph displaying the relative difference between total and retweet stream densities over the study period.](image-url)
This could imply several things. It could be that retweeting is either random or constant: Twitter users retweet each other at a fixed or variable rate regardless of thematic, structural or temporal stimuli. Alternatively, retweeting could be associated with thematic or structural stimuli but not temporality, or it could be that temporality does have an effect, but that it is more complex than the stream density measure allows. It has been established already that persistence is a better approximation of ambient temporality, so is there any evidence that persistence influences retweet practices?

The graph below displays persistence (adjusted) and the relative weight of retweets in the hashtag stream (i.e. number of retweet / total tweets) on the same axis.

![Persistence vs. Retweets % Stream Density](image)

**Figure 39:** graph comparing persistence (adjusted) and the relative weight of retweets in the hashtag stream (i.e. number of retweets / total tweets) for #LondonRiots and #UKRiots across the whole study period.
In short, there doesn’t appear to be much evidence that temporality – at least as it is measured in this study – has much influence on retweeting practices. The persistence spikes that appeared to increase the hashtag stream density appear to have no effect on the relative frequency of retweets. This would tend to suggest that ideal speech conditions, whether they exist or not, do not respond to ambient temporality.

If retweets are used as a barometer of ideal speech conditions, then it would appear that these conditions are not responding to temporal variations in hashtag flow: it may be that the riot public is too fast for ideal speech, or it may be that the communicative logic (information overload) is flawed, either because no relationship exists or because the relationship is far more complex than the directional logic allows.

Retweets were studied because they were considered a precursor to full and equal consideration – an indicator, at least, that Twitter users were reading each others’ tweets and considering the content. There is no doubt, however, that this is a highly reductive approach, used mainly because it is convenient for macro-level data processing. A more nuanced evaluation of deliberative consideration must call on Habermas’ validity claims. That, in turn, requires a temporal assessment of the deliberative coding performed earlier.

<table>
<thead>
<tr>
<th></th>
<th>Wednesday</th>
<th>Thursday</th>
</tr>
</thead>
<tbody>
<tr>
<td>#LondonRiots</td>
<td>2.01</td>
<td>2.39</td>
</tr>
<tr>
<td>#UKRiots</td>
<td>2.23</td>
<td>2.58</td>
</tr>
</tbody>
</table>
Table 12: a summary of mean deliberative scores for the three most common hashtags comparing the Wednesday and Thursday periods.

<table>
<thead>
<tr>
<th>Hashtag</th>
<th>Wednesday</th>
<th>Thursday</th>
</tr>
</thead>
<tbody>
<tr>
<td>#Riots</td>
<td>2.09</td>
<td>2.50</td>
</tr>
<tr>
<td>Total</td>
<td>2.09</td>
<td>2.50</td>
</tr>
</tbody>
</table>

During the Wed_Day period, the #UKRiots stream scores significantly higher in the deliberative reading than the other two hashtags – in fact, the difference in deliberative scores is more marked in this period than at any other time. Variation between the hashtags decreases across the four sample periods until Thu_Night, when the deliberative scores were effectively the same. The #UKRiots stream is not the densest during this period (the #LondonRiots stream consistently records more tweets per minute) but it is the most persistent: both in terms of a visual interpretation of the above graph and in terms of average persistence.

Figure 40 breaks down those average scores into individual categories and demonstrates that there is a reversal across the scoring criteria. In other words, no one category assignment is responsible for the these different averages.
The difference in both the individual code frequencies and the mean deliberative scores are unlikely to be caused by chance alone (\( \bar{x}_{\text{Wed,Day}} \) vs \( \bar{x}_{\text{Thu,Day}} \), \( z = -4.63 \), \( p < 0.0001 \)). There genuinely does appear to be a difference in the type of communication taking place in the Wednesday and Thursday samples. To conclude that this is somehow caused by the reduced ambience of the riot public, however, would be exceedingly premature. There are many reasons why deliberativeness could change from Wednesday to Thursday, not least that Twitter users would have had an extra day to consider the riots, develop their views and to assign value.

Earlier it was suggested that discourse constructs its own temporality – the idea being that whatever is discussed in period \( x \) will influence what is discussed in period \( x + n \). The obvious extension of the idea is that Twitter time, as well as
being a software-social construct, is also a textual construct – a metric, perhaps, for identifying deliberative discourse, but not for explaining it. Part of the issue is that a summary score of deliberativeness, averaged across a four-hour period, is an extremely limited indicator of communicative happenings. To better explore the relationship between temporality and discourse, then, it is necessary to have a closer look at what the discourse involves.

**Figure 41: graph comparing the relative frequency of the different thematic codes on Wednesday and Thursday.**

Primarily that involves closer consideration of the thematic coding and the deliberative scoring. Figure 41 displays a breakdown of the thematic codes across the two periods. If there were no thematic differences between the two periods, then it would be easier to implicate ambient temporality in an explanation of deliberative variation (because textual-thematic variation could
be discounted). As it is, there are plainly differences in thematic focus across the two periods: most notably, there are increases in social complexity, in political commentary, response consideration and media commentary codes, whereas the rioter as other category falls.

It has been established already that tweets that focus on the social complexity of the riots tend to score more highly on the deliberative scale, especially in comparison to RAO tweets. It’s all been established that the #UKRiots stream tends to be more productive than the other hashtags and that on Thursday #UKRiots stream density often exceeds #LondonRiots (previously the dominant stream). It is possible, then, to characterise discourse on Thursday and to compare it, in thematic terms, to Wednesday. On Thursday, there is greater interest in exploring a range of explanations for rioting; there is a considerable widening of culpability, particularly in terms of implicating politicians and the professional classes; there is far more concern with what constitutes an appropriate response; and there is much more reflection on the role of the media – and especially social media – during these types of acute event. It should be noted that a lot of the tweets providing media commentary are in some way a response to comments made by David Cameron to parliament.

On Thursday, discourse involves less emotional reaction, more in the way of productive comment, and a greater percentage of tweets that score three or four points on the deliberative criteria scale. In terms of temporality, the major hashtags are closer aligned, stream density is lower, and there are fewer cases of individual tweets and individual users engaging in those hashtags and distorting the ambient visibility (which, of course, contradicts any sense of equal or
symmetrical contributions). In terms of a summary picture, then, it appears that deliberation and temporality are aligned, but this is not necessarily an endorsement of the conceptual framework. The conclusion chapter of this thesis explains why Twitter time is less a shaper of discourse than shaped by it.
CHAPTER EIGHT

CONCLUSION

INTRODUCTION

On the afternoon of August 4 2011, London police officers shot dead Mark Duggan, a black man from the borough of Tottenham in the city’s north. There followed a period of intense civil disorder: rioting, looting and violence spread first across the capital and then to other cities across the UK. Three men died in Birmingham and another in Croydon. The police made thousands of arrests, the Prime Minister recalled parliament and specially convened Magistrates Courts stayed open around the clock to administer punishment to the rioters. The public sphere was intensely engaged in debating the causes, meanings and consequences of the riots and in demanding certain types of response (and punishment). However, rather than facilitating a reasoned, informed and responsible reading of the riots, broadcast and print media were implicated in spreading misinformation, exacerbating disagreements, and enforcing highly political accounts of the riots (Bassel 2012, Kelsey 2012).

Such activity is hardly ideal for a normative model of communicative democracy: it undermines the efficacy of the public sphere. More widely, political theorists have recognised that widespread dissatisfaction with the political and professional classes, and with the media too, has damaging implications for democracy and civil society. One response to these concerns has been to
emphasise the potentially transformative effect of digital media on political voice, civil engagement and, by extension, the strength of the public sphere.

In broad terms, the primary aim of this thesis was to explore the quality of discourse in the digital public sphere during the UK riots. It wanted to assess whether or not digital media channels supported normative deliberative communication. In order to pursue that aim, it needed to develop a coherent and rigorous conceptual framework and it sought to establish a replicable, extendable empirical method.

To that end, it reviewed conceptual and critical contributions to the technological and theoretical understanding of digital media: the Internet, networking protocols and the world wide web (WWW). It identified potential problems caused by too little specificity (and too much assumption) in the observation and analysis of these technologies, and proposed a model of interpretation that, while underwritten by a technological understanding of underlying architectures and protocols, emphasised the specific affordances of individual software applications.

That layered understanding of interactive affordances informed a reading of digital democratic theory, much of which is focused on the communicative potential of the media – that is, its potential to enable and to support rational, productive discussion and to contribute to the public sphere. Once again, it was shown that a lack of consensus (and specificity) around conceptual definitions has undermined efforts to develop coherent and transferrable theory. For instance, uncertainty about exactly what constitutes deliberative discussion – what is required, by whom and to what purpose – has produced a raft of
situational reports but little agreement about the deliberative potential of different applications (either individually or in aggregate).

In response to the literature review chapters, the conceptual framework set out an interpretation of logical interaction between technology and democracy, emphasising the communicative dynamics of both concepts. It argued that while foundational structures may shape the affordances of individual applications, this influence can only be revealed by specific, contextual analyses of software applications in action. It particularly emphasised the temporal and spatial dynamics of communicative flow, arguing that these dynamics were clearly shaped by the affordances of software as well as impacting directly on the normative expectations of deliberative theory. In short, it argued that software applications are implicated in the construction of communicative flows; deliberative theory requires that these flows are temporally and spatially conducive to normative discussion.

The perceived benefit of this approach is that it should support an empirical analysis of communicative practices and, theoretically, it is applicable across contexts: different applications enable communicative flows with different temporal and spatial dynamics. If these dynamics can be observed, then the democratic potential of different technologies can be estimated according to the same logics of temporal and spatial flow. Furthermore, if deliberation can be observed (and assessed) within these contextual flows, then a theoretically justified, empirical test of deliberative potential becomes a real possibility.
The methodology chapter explained how such an empirical test of deliberation could be conceived and applied using the micro-blogging service Twitter. The emphasis on time and space helped to situate Twitter as an object to be studied. Twitter is understood as interacting structural layers of communicative exchange, each with temporal-spatial effects to be observed and interpreted. Deliberation is assessed through meaning – that is, value or attention assigned to distinct signifiers – and an interpretation of communicative action based on Habermas's validity claims and principles of ideal speech.

The findings of this analysis were presented and discussed for each of the major research questions. In very general terms, it might be said that the textual and thematic analysis of discourse provided some evidence that Twitter users were deliberating according to the validity claims, but it was more difficult to find evidence of ideal speech conditions. There was evidence that Twitter software shapes the flow of discourse between users of the application, and in ways that are both temporally distinct and appear to correspond to thematic and deliberative discontinuities. The relationship between these observations, however, is complex and requires critical dissection – that is the purpose of this discussion chapter.

CRITICAL REVIEW OF MAJOR FINDINGS

The UK riots were extraordinary for many reasons. Most obviously, thousands of people rioted in cities across the UK, engaging in various forms of disruptive activity, including legitimate protest, property destruction, looting and violence.
In the words of one judge, this was “collective insanity”. The riots were also extraordinary, however, for the way that the state generally and the prime minister specifically, sought to shape the public-discursive interpretation of these events: “opportunist thugs in gangs... looting, violence, vandalising and thieving” (Cameron 2011a). This discourse fed into a draconian judicial response, characterised by supposed deterrent sentencing, which resulted in exceptional rates of incarceration, often for offences that would normally be treated as minor.

Clearly, there are multiple concerns here, though they may be related. There is a concern that the state and political machinery can exert undue influence over the public sphere for political gain. There is a concern that the state and the judiciary are not sufficiently held to account for acting extraordinarily. There is a concern that mass media is not fulfilling the role assigned to it by the 4th Estate model, perhaps even abusing its position as the dominant conduit for public discourse. Moreover, there is a general concern that print and broadcast technologies are ill equipped to support discourse during acute events – rapid-moving, intensely political and disruptive social happenings. It is structurally questionable whether, during such events, fully reasoned, democratic legitimacy is even possible.

Kellner (2004) suggested that where (and when) mass media inevitably descends into hysteria, Internet media can provide a “wealth of opinion and debate” to inform, educate and motivate citizens. In other words, digital technologies have been held up as a more democratic alternative, better suited to productive discourse during complex, fast-moving social events. In the
simplest terms, this is the hypothesis under review in this project – during the UK riots, did digital media enable rational, productive discussion any better than the mass media channels? This is not an attempt to explain the state response to the riots, nor a critique of state or political influence over public discourse – there is no suggestion that digital media channels were dominant in the UK in 2011. Rather, this is a hypothesis about the potential of digital media to eventually meet a democratic requirement that is not being met satisfactorily at present.

A summary reading of the research findings and analysis suggests that complexity – both in terms of framing Twitter and democracy for study, and in unpicking the relationship between the two phenomena – is unavoidable and critically important. Furthermore, both the literature review work and the case study analysis suggest that it is fundamentally misleading and unhelpful to construct a binary dynamic in which democracy is either present or absent, enabled or inhibited by digital technology. A technology like Twitter is more likely to make differential contributions, strengthening some aspects of democracy, according to some interpretations of communicative norms and some deliberative practices, but weakening others. Consequently, even a simplified account of Twitter and democracy must recognise this nuance and uncertainty.

The issue is that nuance and uncertainty tend to resist neat, linear, concluding statements. Even with democracy restricted to a deliberative model, and assessed using a narrow interpretation of communicative action, it is clear that Twitter had both enabling and inhibiting influences during the riots. How should
those different (sometimes contradictory) effects be synthesised into in a coherent (and urgent) conclusion? Furthermore, a comprehensive literature review is sufficient to establish that digital politics is a complex field of enquiry that has defied simplistic frameworks and logics – what value is there in a study that repeats this generally accepted conclusion?

One response to this challenge is that there is surely more value in recognising and exploring complexity than there is in denying it (an important realisation for media studies more generally). Furthermore, the complexity itself reveals something important about the dynamics connecting digital technology (especially software) and democratic processes. Consider, for instance, the way that different thematic codes were distributed between different hashtags. The finding that it is more productive to analyse discourse at the level of individual hashtags (software structures) rather than at the platform or application level is a useful one. It underlines the importance of reading and interpreting software for study, and supports a wider argument for greater specificity and precision in Internet studies.

Moreover, the different behaviour of different hashtags suggests that Twitter cannot be viewed as a unified sphere of public exchange (as it often is). A key finding underlined in the discussion was that the hashtag, rather than being a coordinator of discourse, may serve, in part at least, to inhibit deliberation by keeping separate opposing views and different methods of argument. In this respect, Twitter replicated the behaviour of the (politicised) print media during the riots. Clearly the link-sharing functionality of Twitter is highly significant in this respect, and highlights the extent to which Twitter remains embedded in
existing media systems. In some respects, it is a misrepresentation to ask whether Twitter is more or less democratic than other media types, because to a great extent, traditional and digital media are simply components of a larger media system.

This point deserves further consideration because it has implications beyond the narrow deliberative framing of democracy. An important claim about the democratic potential of social media concerns the way that it enables a more diverse and plural audience to engage in discourse, and yet the influence of traditional media over the riot discourse on Twitter is inescapable. Nearly two-thirds of the tweets in the coding sample shared external media of one sort or another, and a third of these linked directly to national media content, much of which was online copy from traditional print publications. In addition, many tweets that do not include links are comments on national media texts.

It is unsurprising, then, that the thematic concerns of the riot public on Twitter replicated those in the wider mediasphere. The close thematic analysis found that discourse was dominated, on the one hand, by commentary on the moral, social and political causes of the riots, and on the other by attempts to externalise the rioters, to define them by their transgressions and to locate them beyond the moral and cultural norms of society. To a large extent, these thematic concerns were dictated by the links embedded within tweets, so Twitter, in part at least, acted as an echo chamber for established, often professional, media voices. Whether or not these voices were wholly representative of the mass mediasphere cannot be determined from the Twitter sample alone – a survey of print and broadcast texts beyond Twitter would be required as well.
It is possible, however, to observe differences between these thematic categories: social complexity tweets (69%) tend to link to external media far more than RAO tweets (43%). Social complexity tweets were also more productive (not emotional) and more deliberative according to the coding criteria. In part, the concentration of productive and deliberative codes within the SOC category may have been caused by the coding method – the embedded media tends to give the impression of greater consideration and reason giving – but only in part. The deliberative coding, especially, demanded evidence of personal voice (commentary) within the tweet text. The association between external media and the more complex social causation arguments is interesting, therefore, both for what it suggests about Twitter users politically and for what it says about how users tend to make different types of political argument.

Communicative action prioritises reason-giving, considered and respectful exchange and calls to external or existing social and cultural knowledge. In the riot public, this type of persuasion tended to be used to emphasise the social complexity of rioting – the myriad causes, the possible motivations of rioters, the wider responsibility for social disorder. Consequently, SOC contributions tended to include calls to external arguments and links to evidence of complexity. RAO tweets were less concerned with these normative ideals, more often making reductive claims about cause and responsibility, often without normative construction.

This does not mean, however, that the SOC tweets were any more successful or persuasive in terms of the wider riot discourse. Indeed, for those who hope that normative, deliberative digital discussion might effect social and political action
in the wider public (and political) sphere, these findings may not be especially encouraging. As was noted in both the findings and analytical discussion, the fact that content, thematic and deliberative codes tended to be distributed unevenly across hashtags is concerning for a deliberative model. It suggests that, rather than coordinating and encouraging deliberative exchange between users holding different points of view, Twitter allows these positions to circulate independently of each other. To repeat an important conclusion from the discussion chapter:

The hashtag suggests coordination, but the association may be illusory: within hashtags there are discourse cultures that, effectively, speak different languages. Deliberation, then, rather than being a democratic ideal, is simply a dialect within wider language wars. There is no evidence, even, that different dialects speak to each other: deliberation may be a marker of difference rather than a route to consensus.

The study found evidence of problematic conditions for ideal speech within the riot public, which further calls into doubt the deliberative potential of Twitter. Could it be that despite his perceived lack of Internet expertise, Habermas was prescient when he claimed that digital mediation would cause “the fragmentation of large but politically focused mass audiences into a huge number of isolated issue publics” (Habermas 2006, 423).

A possible counter argument could be made based on the (albeit limited) evidence that, over time, discourse flows in the riot public became less polarised and more deliberative. Sentiment analysis was employed sparingly, owing to concerns about its efficacy and reductive tendencies, but the linear tracking of
matched positive and negative sentiment suggested that the public became more consensual over time. Both positive and negative become less polarised, though positive sentiment neutralises at a faster rate. This raises several questions. Are Twitter users calming down, their opinions becoming less extreme and moving towards rational consensus? Alternatively, does this normalisation suggest that, as fewer people use a hashtag, views inevitably become less extreme – in other words, do topical hashtags become progressively less representative of public attitudes and opinions as, over time, the public takes its views elsewhere?

It is a considerable assumption that a hashtag should perform the same coordinating function in the same way from one day to the next. Hashtags are software-user constructions – they are not fixed objects, and so the function/effect of this construction can presumably change over time.

All the hashtags analysed were more deliberative on the Thursday compared to the Wednesday, at least in terms of validity claim coding. There is also a narrowing of temporal disparities between hashtag streams, the implications of which were discussed in the previous chapter. These findings might suggest greater consensus over time; certainly, discourse on Thursday was found to be more productive and deliberative and more closely aligned within the SOC, POL and RES codes (generally, the more liberal and deliberative codes).

It would not be appropriate, however, to conclude that these findings validate the deliberative potential of Twitter – the evidence is too sparse and the discussion far too speculative. Having said that, it is worth commenting on the comparison between the discourse in the riot public, especially associated with the #UKRiots hashtag, and the arguments presented to parliament during the
emergency sitting on Thursday 11th August. After all, parliament (with its ritualised format for debate, its codes of etiquette, address and phraseology, its temporal rhythms and its formalised mechanisms for reaching and expressing consensus) should be the archetypal deliberative setting. It might be expected that professional representatives from across the political spectrum would produce gold standard deliberative discourse, consider a full range of positions and engage fully in productive, reasoned debate.

A full critical reading of parliamentary discourse is beyond the scope of this conclusion chapter, but would be a valuable undertaking for a future research project. Once again, the task should not be framed in terms of deliberative binaries, but rather in terms of relative deliberative practices: how do digital channels compare to formal political channels in terms of normative practices? It is possible to comment briefly from a summary reading of the Hansard recording of the debate.

The tone for that session was set by the Prime Minister’s statement, parts of which have been commented upon already, but what is remarkable is the lack of variety in the questions and statements made to the house. The parliamentary discourse aligns closely with the findings of the Riots Communities and Victims Panel (RCVP), which was widely criticised for its “Victorian” interpretation of social ills, its persistent paternalism and its reductive and conservative critique of rioters and rioting (Bridges 2012).

On the rare occasion that a member of parliament (MP) did raise the possibility of deeper social complexity (and complicity) to the rioting, these ideas were quickly dismissed by the government (and the dominant discourse). Consider
the following exchange:

Mr Elfyn Llwyd (Dwyfor Meirionnydd) (PC): Does the Prime Minister realise that in times of economic downturn acquisitive crime always increases? The difference this week was that it was backed up by extreme violence and perpetrated by mobs. In that light, may I ask him to reconsider the cuts to police budgets? He will be seen as giving in not to mob violence, but to common sense.

The Prime Minister: I simply do not accept this determinism that changes in the economy mean automatic changes in the levels of criminality. Indeed, the figures for the last recession disprove that. We should be clear in this House that it is criminals who are responsible for crime. It is an individual act, and we should hold people responsible for their acts. (Hansard 2011, column 1068)

Using the same coding criteria as the Twitter analysis, the dominant thematic concerns appear to be defining rioters as others; expressions of solidarity with the police, especially, but also with the law abiding; a generalist neoliberal critique – more accurately, a paternalist emphasis on personal responsibility – and condemnation of the disruptive influence of digital technology, especially social media. In other words, parliamentary discourse was aligned far more closely with the thematic concerns that were the least deliberative in the riot public.

The simple fact that Twitter enabled the publication and dissemination of alternative arguments – a broader range of thematic concerns – is perhaps the
most powerful endorsement of its democratic potential, especially because other spheres of public discourse manifestly failed to deliver reasoned, nuanced and exploratory debate. While many of these concerns originated in external media texts, these concerns were often the subject of adjunctive discussion, which was productive and deliberative in certain codes especially, suggesting that an engaged and informed public were using Twitter. The question, then, is not whether Twitter has the potential for deliberation – this potential presumably exists anywhere there are humans prepared to deliberate – but rather: does the software actively facilitate this deliberation?

This raises another important question: why should it be supposed that any communication technology will automatically or inevitably enable deliberation? As Graham (2015) notes, fully normative deliberation is a rarefied communicative practice – it is hardly likely to occur in the everyday discussions and exchanges that occupy the public sphere. Such communication is “not bound to any formal agendas or outcomes, and political talk that emerges in these spaces is often spontaneous and tends to lack any direct purpose” (ibid 250). In other words, is it somewhat unfair to judge Twitter’s democratic potential against such a demanding set of normative criteria?

Furthermore, despite a longstanding supposition that Internet technologies are structurally suited to deliberative practices, this sort of determinism is problematic. Deliberative practices are not “naturally occurring and universal” but rather “constructed and contingent” (Coleman and Moss 2012).

"Rather than thinking of deliberation as an objective or formulaic practice in which one kind of technical platform can serve the needs of all citizens
and all of the vast range of subjects they might want to discuss, it makes sense to acknowledge that different social groups behave differently in varying online spaces.” (Birchall and Coleman 2015, 267)

If deliberation is hard to achieve, and if different groups require different communicative environments in order to deliberate, then it is highly problematic to assume any unifying, deterministic deliberative logic. The deliberative environment becomes something that must be carefully designed, something tailored and particular and constructed locally, rather than a generic property of digital technology. As Birchall and Coleman (2015, 268) claim, “designers should acknowledge the nuances of cultural practice and expressive habit that frame deliberative interaction, rather than expecting such habits and practices to bend to the rigours of deliberative theory”. They proceed to describe several principles that might be considered by designers looking to develop deliberative spaces.

The idea that technology must be designed to encourage deliberation reframes any question about Twitter’s deliberative potential. While Twitter may have been called a digital town square (Leetaru 2015), there is little suggestion that it was conceived or designed in such a way as to intentionally encourage deliberation. It hardly makes sense, then, to question whether or not Twitter (or any generic social media technology) delivers deliberation – there is little reason to assume that it should. It is more reasonable to focus on the affordances that seem to best support deliberation, and to ask how they might be appropriated by an intentionally deliberative design.
Consider, for instance, the hashtag – an affordance that is supposed to contribute to the creation and the coordination of issue publics (Bruns and Moe 2014, Schmidt 2014). In some respects, the analysis in this project supports this claim: hashtags appear to be a significant structure, shaping ambient flows and topical concerns, helping to construct a communicative community while supporting considerable plurality. More compellingly, deliberative discussion was distributed unevenly across hashtags: some hashtags were more productive than others, and these differences were associated with thematic discontinuities. It might well be supposed that, were a designer seeking to develop a deliberative space, then he or she might consider making use of the hashtag – or a hashtag-like function – to coordinate discussion groups.

The issue is that the analysis also suggested that hashtags tend to be less effective coordinators the more popular they become. The temporality of the hashtag is critical in this respect. Specifically, there is evidence that temporality and deliberation align and that higher temporalities undermine ideal speech (there may be a temporal threshold above which information flows become too dense, and full and equal consideration becomes impossible). However, the discussion chapter concluded that this alignment cannot be read as an endorsement of the conceptual framework: temporality may shape discourse but it is equally possible that discourse shapes temporality.

This is a familiar issue, first introduced at the start of chapter two. If deliberation is socially constructed then it is problematic to assume that deliberative spaces can ever be designed: such logic always risks determinism. The great benefit of the temporal approach is that it illustrates the fluidity and the malleability of
hashtag-enabled discourse: hashtag temporality changes and so does the deliberativeness of discourse. The evidence indeed suggests that any association between affordance and deliberation is likely to be highly contextual. In other words, if there is deliberation, then it comes from the users and not from the hashtag.

What are the implications, then, for the democratic potential of Twitter, and for digital media more generally? Any attempt to apply the findings from the riot analysis to other contexts must be cautious and fully aware that deliberation seems to depend, first and foremost, upon the intentions and the commitment of human users. Furthermore, while there is value in these contextual descriptions of deliberative construction, what is arguably more important is the gradual development of a historical record of software-enabled deliberation. If there are stable logics connecting software and deliberation, then they are more likely to be revealed by a comparative analysis of discourse across many different contexts. In this respect, the development of a reliable and replicable comparative method becomes especially important. This study attempted to develop a temporal measure of software-discourse interaction to facilitate such a comparative approach. The next section will reflect upon the success of this approach.

In conclusion, the idea that a combination of careful design and social media logic will automatically encourage deliberation is too deterministic, an example of technological solutionism. Deliberation is complex, it requires commitment from the deliberators (in addition to political engagement, it demands commitment to a mode of engagement), and deliberative spaces tend to be
carefully constructed and rule-bound. Consequently, if the aim is to encourage deliberation, then this analysis suggests that time would be better invested in education and engagement programs. Attempts to ‘outsource’ this work to digital technologies are unlikely to be wholly successful.

LIMITATIONS AND SUGGESTIONS

One of the great challenges for researchers seeking to develop the applied study of Internet technologies – that is, those who want to explore the social as well as the technological dynamics of digital computers – is how to conceptualise the digital object as something to be studied. The literature review chapters established that there remains considerable disagreement about how best to achieve this, not only between disciplines but, quite often, within them too. It is clearly difficult to frame the digital object in a way that is sufficiently definite to be transferrable between contexts without becoming deterministic.

A possible solution may lie at the temporal intersection of digital and political phenomenology. Much like Internet theory as a whole, the temporal approach is not well developed as yet. There are theories of network time, timeless time and, more broadly, of time-space compression driving (and being driven by) the complex interaction between global cultural flows. In short, there is a sense of quickening, of established rhythms being disrupted, and this disruption is increasingly a concern for both the digital and political sciences. Both
communicative technology and communicative democracy necessarily involve the meeting of human minds – a meeting that must be constructed in both time and space. Castells (2010) has described the city as, first and foremost, a communication system because of the way it facilitates multifarious interactive settings; in the digital context Knorr Cetina (2009) has described the synthetic situating of the communicative act – the meeting of minds via an onscreen projection of those minds (in text, images or video).

The conceptual framework chapter concluded that the temporal approach was potentially a productive one – a way of moving the communicative study of digital politics on from narrow contextual description (or polemics) and towards a more general and applicable theory of democracy in digital time-space. A method was developed, drawing on the central dynamics of temporal theory and the few studies that have attempted an empirical reading of network time. It is important to reflect briefly on the success of that method, and to consider what the experience in this project suggests for the temporal method in future.

This was not an attempt to argue that the temporal approach is the only way – or even the best way – to establish digital communication as an object in the world to be studied by political scientists, and it should not have been read as such. Of course, there are other approaches, including network theory, anthropological and ethnographic framings as well as innovative cultural, economic and evolutionary methodologies. Rather, this was an attempt to provide a perspective on the digital object in a way that is replicable and theoretically justified cross-contextually. It is a perspective that should be particularly applicable to the study of digital democracy, especially the deliberative practices.
frequently cited as central to that concept. Furthermore, if it proves productive, it is a perspective that should help elucidate the complex digital-physical dualism that so complicates a great deal of Internet theory (and, by extension, modern social theory as well). It is not known what the effect might be of a perceived separation between the digital and physical worlds: it is an area that demands further enquiry.

After this project, there remains a reasonable prospect that temporal analysis can contribute to this effort, but it cannot be claimed that the method proved its productivity conclusively, or even that it was possible to frame time-space with a great deal of objectivity. There are different reasons for this, and it is worth considering each in turn, both to establish the limitations of the approach, but also to suggest possibilities for development.

The first issue – which has been demonstrated and discussed on occasion already – is that digital time-space remains an elusive phenomena that is hard to describe and easy to misinterpret. In particular, a researcher interested in the temporal approach must recognise that it is very easy to impose temporality rather than to observe it. This involves both practical and theoretical issues, and neither type is easily resolved. The practical issues relate mostly to the fact that data collection, processing, filtering and reading methods can all suggest temporalities that are hardly related to the (physical or social) phenomenon being studied. These temporalities are constructed first in the parsing and processing done by the (Twitter) API, and then in the programmes and the spread-sheets of the researcher, not to mention the theoretical and structural preferences that shape methodologies.
An easy way to illustrate this issue is to consider the decisions taken in the identification and extraction of the riot public. The decision to focus on hashtags to define that public reflects an assumption that Twitter is organised according to structural layers, and that the macro layer is best suited to identifying the most public conversations. Limiting the analysis to certain hashtags, however, excludes tweets that don't use those hashtags and constructs a 'conversation' that exists as an object only in the context of the research. Most probably, it was never experienced by a single human user in the form it is eventually studied. Clearly this has implications for temporality. Two researchers could study the UK riots and construct quite different temporal pictures depending on how and where they chose to search, their processing techniques and their presentation methods.

In large part, this is an issue for big data methods more generally. There needs to be far more awareness about the social, representational and phenomenological significance of data processing decisions. Clearly the object as studied is not always the same as the object as lived, and often this separation needs to be better understood.

In the context of this project, the discussion chapter attempted to question what the different temporal measures actually represented in terms of phenomenological experience. The riot public is an abstraction, as indeed are stream density and persistence. In terms of lived phenomena, it was argued that they reflect the ambient temporality of the riot on Twitter – the sense of being surrounded by the story – but, of course, this too is a conceptual abstraction.
More work is needed to better understand the relationship between these abstracted measures and time as it manifests and is experienced on screen during the communicative act. It is well beyond the scope of this thesis to make any assertions or predictions about how that work might proceed, but it seems likely that it will require contributions from across the social, cultural and natural sciences. What is clearer is that, at this stage, considerable caution must be exercised in applying and interpreting temporal measures – and that the scope for quantitative analyses remains limited. The quantitative measures developed in this project have been applied only in the framing of qualitative readings but, even so, it is important to preface (and now postscript) those readings by acknowledging the assumptions and the abstractions that made them possible.

This observation has wider implications for big data analyses, which tend to assume an ontology of unified and quantitative objectivity. Indeed, much of the machine-driven processing of the data archive relies on a tacit acceptance that aligns observation and reality without any acknowledgement of abstraction, exclusion, representation or dualism. Perhaps this points to an emergent role (and responsibility) for the social theorist: the task, first, of understanding properly the data science domain and, second, of interpreting (and informing) big data work for social and cultural application. As recent publications indicate, several researchers are aware of this responsibility and are working already to integrate the social and data sciences (Crawford et al. 2014, Bowker 2014, boyd and Crawford 2011).
Those efforts should include contributions to the development of techniques that will enable big data work to better inform social and cultural theory (and vice versa). Standardisation is likely to be critical in this respect (Bruns and Stieglitz 2013). One of the reasons for pursuing Twitter time was that it could suggest ways to standardise analyses of democratic potential. If the temporal approach can be standardised, then perhaps it becomes possible to compare and contrast contextual studies of digital democracy. Therefore, it is important to reflect on the methods used in this project and to identify the techniques that proved productive and any issues that might complicate standardisation.

As with all projects that rely on automated API queries and big data processing tools, this study must acknowledge the potential for selection and confounding biases (Ruths and Pfeffer 2014). Selection biases are particularly an issue when APIs are proprietary and restricted. In the case of Twitter, the streaming API used to collect tweets for this study returns approximately one per cent of all tweets published. The sample size is less of an issue than the sample selection methods, which are not known to researchers. These issues were acknowledged in the methodology and some strategies were developed to mitigate against biases, but it is important to recall this potential for error because it is fundamental to data-driven Internet analysis.

There are steps that individual researchers – and the academic community as a whole – could take to further mitigate against such biases in future. Clearly, a standardised and replicable approach to both collecting and processing data would help. In this regard, it is important that researchers currently developing methods for data collection and processing make public their tools – including
API querying scripts, data handling processes and analytical tools. A public record would assist verification and development efforts as well as standardisation.

Researchers should also acknowledge more readily the likelihood that confounding relationships confuse and complicate a great deal of analyses, especially in a text-based communication system that enables hyperlink relationships to connect millions of documents. In general terms, the

“logic of hyperlinking has the potential to defy independence, to create confounding relationships between samples regardless of platform, audience or sampling techniques. The ‘temporality’ of Google search will be driven, in part, by the temporality of Facebook and Twitter and all the different sources that Google indexes.” (Pond 2015, 154).

More specifically, the practice of embedding hyperlinks into tweets makes it very difficult to define the tweet object, either as a text or as a temporal moment. As discussed already, embedded links create windows into a vast web of interactive text, the limits of which can only be guessed at. In this study, each link was followed to its immediate destination and no further, but there are no such limits on real Twitter users. A tweet can pass by in an instance or it can ‘unfurl’ for hours, through networks of hyperlinked deferrals.

These connections are not always temporally linear either. It has been noted how different links can invoke different temporal experiences (past, present, future), but it is equally the case that tweets can reference other tweets in ways that are temporally non-linear. The retweet, for example, is particularly
problematic in this respect. According to the temporal method, a retweet is located by its moment of publication – where it appears in the stream is determined by its timestamp. This is a considerable simplification however. In some respects, the retweet is not something new, defined by its moment of creation, but a reference to a moment already passed – to the original tweet – which now extends into the present in uncertain ways thanks to the retweet and the additional viewing opportunities (moments) that the retweet creates. A great deal more conceptual and empirical work is required to explore how these historical relationships complicate Twitter time.

In lieu of that work, it seems problematic to suggest that network time can be measured simply by observing publication rates in pre-defined temporal windows. Such an approach creates an artificial picture of temporal unity (of pace or speed defined only in the present, of peaks and troughs seemingly unrelated to each other) and this can confuse analysis. This confusion was evident in the attempts to explain spikes in stream density in relation to persistence spikes, ambient temporality or diurnal variations.

Despite these considerable conceptual and practical issues, the temporal approach appears to be more promising than the spatial approach, which is undermined by the limited availability of spatial data and the fact that, in terms of Twitter at least, the fact that the spatial sample is self selecting. While it was possible to make some general claims about a national riot public, it was not possible to explore in any detail how the structures of Twitter and its information flows related to the physical distribution of riot events. These difficulties are likely to remain unless social media sites change how they collect
(and make available) spatial data on their users – and such a change would raise considerable ethical concerns and risk violating the privacy of users.

Unless more Twitter users decide that they wish to make public their location information, spatial methods must seek to make use of textual location data from profile information and Twitter’s location metadata point. As discussed, however, it is difficult to process this data and to extract meaningful location information from it. Innovation in this area will be dependent upon better automated reading tools, comprehensive location databases, and a better understanding of how Twitter users choose to represent their physical locations to the platform.

If it is difficult to automate the analysis of location information; it is even more challenging to automate the reading of political talk and to evaluate the deliberative quality of tweet text. The study demonstrated the difficulty in first applying and then interpreting sentiment analysis and automated reading techniques. There are two issues in particular. The first is that machine natural language toolkits (automated processing engines) struggle to interpret nuance, metaphor, satire and other types of non-literal representation. The second is that, even if meaning can be extracted and interpreted successfully, it is always reductive to render this meaning into a computable form – a floating point sentiment score, for instance, or a word cloud.

It remains necessary, therefore, to human read tweets to assess thematic content and to evaluate deliberative potential. Human reading is clearly slower than machine reading, and greatly limits the number of tweets that can be studied. This undermines somewhat the logic of the big data approach, and even in
human hands, coding methods remain reductive. Democracy can only be considered narrowly, according to certain definitions in certain contexts, and using certain (simplified) criteria. This study relied upon a deliberative interpretation of communicative democracy but this is hardly the only way to frame democracy, and it remains a contested interpretation, especially in its normative form.

Furthermore, such an approach removes the democratic process from the minds and mouths of the human beings who practice it. Democracy becomes an abstract, normative concept – one that exists solely in the text of tweets and the representative meaning encoded therein. While such an approach may be necessary or convenient from a methodological perspective, it is hardly ideal to reduce a complex, vibrant, discordant social practice in this way. What is required is a theory of digital democracy that fully frames the digital object without reducing or ignoring the influence of human-led social construction. There are plenty of attempts at such a theory (Coleman and Freelon 2015, Dryzek and List 2003, Barber 2002, 1997) but it remains an urgent task for the political sciences.

Many of these theories have attempted to combine multiple perspectives on the relationship between digital communication and democracy. Temporality often plays a central role in such theories, but is this role deserved? Does the analysis of the UK riots, and the discussion that has followed it, support the view that, because digital technologies are fast, they undermine the necessarily slow practice of democracy?
Temporality eludes objective measurement. It can be described in quite specific terms, but comparing Twitter time to Facebook time is fundamentally different from comparing the top speeds of a car and an aeroplane. Moreover, the notion that any technology (Twitter, Facebook or the Internet as a whole) has an innate speed is inherently deterministic. The analysis of Twitter time during the UK riots suggested that the patterns of pace observed (the stream densities) were constructed by the discourse – by users choosing to log on to Twitter and to send tweets. Those patterns of pace may have constructed discourse in turn, shaping the structural flows and ambient topicality, but at best temporality is an indicative measure not an explanatory one.

This is the same point as the one made right at the start of the literature review: that media studies have long tried to balance the determinist and constructivist perspectives and that delicate interpretative act seems to begin anew with each emergent technology. While this project has been preoccupied with defining the Internet as an object for study, this is really just a continuation of a more general effort to conceptualise media and mediation. It is clear that, while digital technology is new, challenging and theoretically exciting, communication, representation and social practices like democracy are not. This realisation serves as an important reminder: an integrated approach, calling on computer science, software studies, social hermeneutics and critical theory, is absolutely necessary for researchers seeking to better understand digitally-mediated modernity.
RECOMMENDATIONS FOR FUTURE RESEARCH

The review of limitations is important, partly because it is a reminder that judicious caution must be exercised when interpreting the findings of this study, but also because it reveals outstanding questions and suggests avenues for future investigation. The final task in this thesis, then, is to consider these future research challenges briefly, to ask how they are informed by this project and to suggest ways that researchers might seek to respond. These suggestions should not be read as an attempt to limit or to define future research efforts – there are innumerable unanswered questions and conceptual uncertainties. Rather, this is an attempt to identify questions that follow directly from the analysis and discussion of the UK riots. The comments reflect the particular research interests of the thesis.

The first point has been noted briefly already: there is a convincing case for building a more complete historical record of software-enabled communication in political contexts. This record should not be limited to any one application (e.g. Twitter), and it should extend beyond the narrow deliberative framing of democracy employed in this project. Clearly, this is a substantial undertaking, but the opportunity to compare and contrast across different contexts would enable researchers to investigate better the super logics shaping the relationship between software and communication.

For instance, it was noted in the findings that adjunctive discussion tended to happen in response to links embedded within tweets – texts, multimedia, speeches, statements and opinions circulating more widely in the mediasphere.
An important affordance of Twitter is that it acts as a link sharing and commenting system, but is hardly the only platform for commenting on media texts. Rather than attempting to assess the deliberative potential of Twitter in isolation, it would perhaps be more productive to perform a comparative analysis with adjunctive discussion supported by different applications at different locations on the Internet.

An obvious example is the commenting communities that many websites support, which have a variety of affordances that support reader engagement with texts. Given the number of national media texts circulating in the riot public, it could be instructive to compare the Twitter-enabled discussion of these texts with the in situ discussion at the newspaper websites. How do thematic concerns differ? Is one more deliberative than the other? Is there any evidence that differences are shaped by the affordances of the different commenting software? As noted already, there would be considerable value in exploring more fully how an application like Twitter is situated within the wider media system.

The temporal approach developed in this thesis has also been used to compare discourse on Twitter with televised political discussion (Pond 2015). Q&A is a weekly political discussion program on the Australian Broadcasting Corporation (ABC), and #QandA is a hashtag used specifically to interact with the televised broadcast. The study found similar temporal complexities to this project, some of which were challenging for deliberation, but also noted that rigid clock-based temporalities are not necessarily conducive to deliberation, even if they are slower.
The second research recommendation is a clear extension of the first. To enable meaningful comparative analysis across any historical record, there needs to be standardised practices for data collection and processing and standardised techniques for data analysis. Other researchers have called for greater standardisation across Twitter research (Bruns and Stieglitz 2013, 2012), but there are considerable challenges, not least the on-going disagreement over how digital objects should be conceptualised and observed. Is standardisation possible across software applications, for instance, or does the specificity of software construction mean that Facebook and Twitter will never submit to the same analytical methods?

One argument for pursuing a temporal method was that it could enable a degree of standardisation across software structures. While temporality may be complex and contextual, the experience of time – that is, the relative negotiation and perception of its pace and rhythms – is pervasive. Furthermore, it has been proposed that hegemonic clock time can serve as a mechanised baseline, against which the interplay of dynamic temporalities might be observed empirically. If researchers could reach consensus around a suite of temporal methods, might this support a standardised framework for contextual analysis?

This study provides some evidence that such a consensus might be possible, though it raises several issues for a temporal approach. As noted in the discussion, it does appear that temporality – stream density, persistence, lag – is variable across Twitter’s software structures, and that discourse is also variable across these same structures. Furthermore, it is possible to observe how these temporal dynamics might construct differential communicative experiences,
making use of concepts like ambient temporality. Those observations are complicated, however, by the unstable (and sometimes uncertain) temporality of software objects, the deferral of meaning in text (and through hyperlinks) and the difficulty of translating abstract flows into objective user experiences.

Clearly, if the temporal method is to support standardisation, then considerable work is needed, both conceptually and methodologically, to better understand the relationship between software, time and meaning-making. It is worth remembering that this is an emergent area of research – a new and dynamic research space. Theories of network time are still being developed and, as yet, there have been hardly any substantive attempts to study network time empirically. This remains an area of some promise, then, and one in which there is genuine potential for inter-disciplinary collaboration.

Beyond the temporal method, the third recommendation is that there should be greater effort to synthesise and standardise different methodological perspectives. In other words, a temporal method might prove productive, but it is only one perspective on the relationship between software and the human-social experience. Other perspectives are valuable, and they are provided by network science, textual analysis, cultural studies and so on. To date, there has been very little effort to develop truly integrative research approaches. Clearly there are conceptual challenges to unifying these very different methods, but they are not insurmountable.

It is acknowledged that a potential criticism of the methodology is that it does not attempt to interview the human contributors to the riot public or to describe them in any great detail. The preference for textual analysis does not imply that
an analysis of gender, ethnicity, demography or social-economic status is not required. Such information could prove contextually and critically important. The conceptual framework invoked Stuart Hall’s concept of the situated audience and, in doing so, expressly acknowledged the importance of interpretative and situated decoding by the physical audience. The significance of physical (social and cultural) situation is acknowledged in the call for spatial-contextual analysis of digital flows and the recognition of potential dualism (the digital-physical dialectic). Cultural, anthropological and ethnographic approaches could help to untangle these complexities and to re-contextualise the audience.

This project attempted to synthesise ideas from software studies, epidemiology, political theory and cultural theory. Network analysis was rejected initially because it is less suited to an analysis of situated meaning-making. Nevertheless, as the discussion made clear, a concept like ambient temporality is dependent on the flow of meanings within systems – collections of individuals – and network analysis could have revealed useful information about connections within the riot public. Integrated methodologies may require paradigmatic shifts in the way that digital communication is conceived for study and a challenging re-integration of cultural and empirical approaches. The emergent field of Cultural Science, for instance, seeks to situate culture within an empirical, evolutionary framework (Hartley and Potts 2014).

The success of these integrated methods may depend, in part, upon the development of automated techniques for making full use of the metadata created by digital technologies. From a cultural perspective, it is tempting to dismiss the potential of automated processing, on the grounds that machine
reading will always struggle to interpret the nuance and complexity of individual subjectivity. This study demonstrated the limits of some current techniques. Critiquing the current utility of automated processing is not the same as rejecting its future potential, however. Natural language processing has improved dramatically in a short period, and the algorithmic analysis of social media data has already produced some intriguing observations. While these methods may not replicate the nuance and insight of hermeneutical analysis, it is surely worth pursuing automated methods that improve the framing and efficiency of such work.

Freelon (2015) identified only a handful of studies that have attempted to use social computing methods to inform an analysis of digital politics, and yet defining the digital object for study is clearly one of the central challenges for digitally-focused research. Too often, digital research is pursued without a clear understanding of digital technology and without a clear concept of how that technology might construct digital-social effects. This uncertainty may explain the persistent determinism for which Internet studies has been criticised.

This observation inspires the final recommendation of this thesis: greater dialogue between social and cultural theorists, engineers and developers is highly desirable. This is not a call for specific research but, rather, a call for greater research capacity. Productive and constructive dialogue can support and strengthen research into the effect of software in society. At present, there are remarkably few research teams properly equipped to pursue fully integrated digital-social research. Developing integrated theories, integrated methods, and
integrated research teams to pursue those methods will be crucial to the future success of digital-social research efforts.
@gmpolice. 2011. "Another has just handed himself in after his friend saw him on the Shop a Looter ad van and said his face was everywhere and could not hide." Accessed 27 August.


Barber, Benjamin R. 2006. "How democratic are the new telecommunication technologies?" Second Conference on the Internet, law and politics: analysis and prospective study, Barcelona, Open University of Catalonia (UOC).


BBC. 2011b. "Three killed protecting property during Birmingham riots." BBC  


Beckford, Martin. 2012. "London riots: Almost 1,000 jailed as judges give tougher  

Benkler, Yochai. 2006. The wealth of networks: How social production transforms  
markets and freedom: Yale University Press.

Bennett, W Lance, and Alexandra Segerberg. 2012. "The Logic of Connective  
Action: Digital media and the personalization of contentious politics."  

Berners-Lee, Tim, Robert Cailliau, Ari Loutonen, Henrik Frystyk Nielsen, and  
Reader, edited by Noah Wardrip-Fruin and Nick Montfort. Cambridge,  
Massachusetts: The MIT Press.

Berners-Lee, Tim, and Mark Fischetti. 2000. Weaving the Web: The Original  
Design and Ultimate Destiny of the World Wide Web by Its Inventor. New  


http://snurb.info/node/621.


Bruns, Axel, Jean Burgess, Kate Crawford, and Frances Shaw. 2012. #qldfloods and @QPSMedia: Crisis Communication on Twitter in the 2011 South East Queensland Floods. Brisbane: ARC Centre of Excellence for Creative Industries and Innovation.


Comninos, Alex. 2011. Twitter revolutions and cyber crackdowns: User-generated content and social networking in the Arab spring and beyond. Association for Progressive Communications (APC).


Cutler, Judge Keith 2014. Inquest into the death of Mark Duggan: Report to prevent future deaths.


Hansen, Derek L, Ben Shneiderman, and Marc A Smith. 2011. "Title."


Java, Akshay, Xiaodan Song, Tim Finin, and Belle Tseng. 2007. "Why we twitter: understanding microblogging usage and communities."


November 2015.


Vaughan-Nichols, Steven J. 2012. How Twitter tweets your tweets with open source: Twitter couldn’t exist without open-source software, and they know it and they share their own code back in return. Accessed 20 November 2015.

Vieweg, Sarah, Amanda L Hughes, Kate Starbird, and Leysia Palen. 2010. "Microblogging During Two Natural Hazards Events: What Twitter May Contribute to Situational Awareness." CHI 2010: Crisis Informatics, Atlanta, GA.


Vitak, Jessica, Paul Zube, Andrew Smock, Caleb T Carr, Nicole Ellison, and Cliff Lampe. 2010. "It’s Complicated: Facebook Users’ Political Participation in
the 2008 Election." CyberPsychology, Behaviour and Social Networking 0 (0):1-8.


Williams, Raymond. 1976. Keywords: A vocabulary of culture and society. New York: Oxford University Press.


ENDNOTES

i The Broadwater Farm estate in Tottenham has a notorious history. In 1985, it experienced serious rioting after “a local woman, Cynthia Jarrett, died while police searched her home following the arrest of her son.” (Dodd 2014). During those riots, Police officer PC Keith Blakelock was fatally stabbed.

ii In addition to the causal factors, he outlines several police procedures that likely served to increase looting during the riots, particularly an emphasis on protecting life – on “holding the line” – above the preservation of property (Bridges 2012).

iii “By analogy with the biosphere (Vernadsky’s concept) we could talk of a semiosphere, which we shall define as the semiotic space necessary for the existence and functioning of languages” (Lotman 1990, 123.)

iv Legitimacy is clearly a complex and much theorised concept in political science (Buchanan 2002). The term is used here in a generic descriptive sense – legitimate political action requires that the acting body (government) is perceived to have authority for its action. According to REF, political legitimacy justifies coercive behaviour: “The descriptive use of political legitimacy accounts for why people believe that a government has the right to impose sanctions on them” (Paletta 2011). That right, or authority, is awarded through democratic processes and implies that the action broadly reflects the will of the citizenry. As such, legitimacy is a test of democratic process and a functioning public sphere.
Print circulations in India, for instance, remain strong. See The Economist: [http://www.economist.com/node/17106285](http://www.economist.com/node/17106285)

The Guardian has developed alternative revenue models to fund its journalism, including philanthropy, subscription services, sponsorship and user-generated content (see, for instance [http://www.theguardian.com/sponsored-content](http://www.theguardian.com/sponsored-content)).

It would be remiss to suggest that access to the Internet is distributed uniformly and globally. In India, a country with 1,200,000,000 people, only 7.5% of the population was online in 2010, according to Google. The CIA provides similar figures: 61,338,000 people online in 2009 (5% of the population). As such, the networked communication technologies discussed in this project are, predominantly, concentrated in North America, Europe and Asia (Java et al, 2007).

There is also a question of human distinctiveness. If human society is defined by its technology, then what does this imply about other species that use technology? Arguably, it limits the scope for distinction and definition to align society and technology quite so closely.

“Architectural control is an inescapable feature of digital technology. All digital code, by choosing to enable interaction in a particular manner, closes off
interaction that might have occurred in another way.” (Best and Tozer 2012, 402).

$x$ Consider, for instance, the following quotation: “Social networks are often divided into groups or communities, and it has recently been suggested that this division could account for the observed clustering.” (Newman and Park 2003, 1). In effect, then, an abstraction – the network – has been adopted to explain a complex social formation – the community – but that complex formation community is now being invoked to itself explain an observed feature of the network: clustering.

$x\text{i}$ Actually, Facebook could now better be described as a platform upon which many applications run and interact.

$x\text{ii}$ van Dijck and Poell (2013) use a familiar definition of social media that combines the somewhat fuzzy concepts of Web 2.0 and user-generated content. These are technologies that “build on the ideological and technological foundations of the Web 2.0 and that allow the creation and exchange of user-generated content” (Kaplan and Haenlein 2010, 61). As discussed, Morozov (2013a) has argued that web 2.0 is an empty concept that seeks to suggest technological differences between phases of the Internet that simply do not exist. Additionally, the notion of user-generated content really makes little sense given that all content on the Internet has been uploaded by a user somewhere or other. If one wishes to infer a distributed network logic, there can be no sense of central authority, ownership or production in terms of Internet content.
Alternatively, if the intent is to distinguish between professional and amateur content, this too is nonsensical given that a great deal of content published via social media technologies is written either to generate income or by authors who are paid formally by the media industry to produce content. In short, the characteristics of social media that supposedly isolate it for analysis are not sufficiently robust for the task.

Accessibility is relative. Most of the applications under discussion here are privately owned, commercial enterprises, employing proprietary algorithms to drive revenue-generating services. As boyd and Crawford (2011) have argued convincingly, the production and distribution of big data raises access questions and ethical concerns. They warn of a new digital divide as access to data is increasingly limited, or available only from commercial suppliers for restrictive fees. Twitter, for instance, now restricts access to its API far more than it used to, and provides historical or large-scale access only through GNIP – its preferred commercial supplier. Additionally, of course, accessibility does not confer automatic ethical consent.

The preference so far has been to keep things as simple as possible and so discuss social media technologies as though these applications were stand-alone software, created somehow in isolation. This, of course, is a misnomer. Technology is not value-neutral, nor does it exist outside of the human agents and social processes engaged in its genesis (Williams 1975). Facebook and Twitter are applications, but they are also companies, both now listed publically,
both required to submit financial statements and shareholder reports.

Commercial motivations are written into the code that makes these applications function.

_xv_ A clear issue with social media as a term is that it implies that a technology operates with limited functionality – promoting sociality – and that whatever that function is, it must be uniform across all social media technologies. A cursory analysis of Facebook makes it clear that this is not the case. Facebook is more accurately described as a suite of applications delivered through a common interface (the Facebook website or mobile application). Facebook has long been working to integrate search tools, retail, recommendation and review services and many other functions into this existing interface. In this respect, the company has more in common with Google than with Twitter. Further, both Facebook and Twitter develop applications to integrate their own functionality and data collection methods into far flung corners of the Web, either through widgets or clients, or through integrated sign-in processes.

_xvi_ Twitter, Inc. also maintains a repository of its open source collaborations at https://github.com/twitter

_xvii_ There is also no certainty that influence is well approximated by these readily available data points.

_xviii_ There is a further, more complex question about the epistemology of metadata – the additional layer of encoded information that researchers often focus on when they scrape Internet datasets. There is a prevailing assumption
that this metadata represents a more essential representation of datafication – the true nature of data object, as it were. Of course, this is not the case. Metadata is similarly captured, encoded and made available by the Internet application and its creators. It can no more be assumed to reveal than it can obscure.

Language is central to any comparison here. No matter how successfully a researcher controls for potential biases and confounders, to make any cross-context comparison, he or she must assume linguistic universality. With all else being equal, what reason is there to assume that people will discuss London the same as they do New York, or conservatism the same as liberalism, or men the same as women?

“In 2009 in Tunisia and Egypt, there were only 34.1 and 24.3 internet users per 100 inhabitants respectively. Furthermore, in Egypt only 7% of inhabitants are Facebook users, while 16% use the platform in Tunisia.” (Comninos 2011, 5).

The authors define their method as follows: “We identify these flows by finding very similar tweets in our datasets using the shingling method for string comparison (Manning, Raghavan, & Schütze, 2008), which converts a string of text (such as a tweet) into a fingerprint summary of the words it comprises. This fingerprint can then be efficiently compared against other strings (other tweets) to find near-duplicates. This methodology parallels the one used in Lotan’s (2009) visual analysis of tweets surrounding the 2009 Iranian election protests.” (Lotan et al. 2011, 1381).
Like *virality*, another term borrowed from the natural sciences, it can be a helpful metaphor, one that appears to describe the superficial characteristics of information exchange on Twitter. Unfortunately, such terms, precisely because they have such specific scientific uses, imply material and structural properties that may not be appropriate to communication dynamics. In chemistry, maybe, it is inevitable that a substance will diffuse from high to low concentrations: there is no such inevitability in communication.

Identifying the location of Twitter users relies upon the user choosing to attach geo-coordinate data to their tweets. Very few users opt to do this – 1-2% in most data sets. In this case, though, the authors selected a sample of highly retweeted users and then manually searched through their Twitter histories for evidence of location.

In a special parliamentary session to debate the riots, David Cameron said: “‘Everyone watching these horrific actions will be struck by how they were organised via social media. Free flow of information can be used for good, but it can also be used for ill, so we are working with the police, the intelligence services and industry to look at whether it would be right to stop people communicating via these websites and services when we know they are plotting violence, disorder and criminality.’” (Hansard 2011). What the evidence was for this claim is unknown – certainly it is not a view supported by any of the subsequent academic research into riot causation and organisational practices.

See Williams, R (1976)
A change in language, after all, cannot be reduced to the action of an individual. Even if that individual is Shakespeare, and the change is something as specific as a coinage—and Shakespeare is credited with several—the coinage still requires a popular reception and adoption into the common lexicon.

The team at FloatingSheep.com are a notable exception. Working primarily from a social geography perspective, they have made notable advances in mapping the geographies of “digispace”. See, for instance Graham and Zook (2013) and Shelton (2013).

It is important to note a limitation of this technique, especially in a sample this size: a single tweet can distort such a visual representation of the discourse. Within the #LondonRiots cloud, several of the most prominent words originate in the tweet:


Retweeted 37 times (the longest chain in the #LondonRiots sample), the tweet links to episode #352 of the Citizen Radio podcast, in which the London riots were discussed. The frequent retweeting of this link explains the prominence of Mississippi, ALEC (the American Legislative Exchange Council), slave, hate and killing in the #londonriots cloud. It would be a misreading, then, to assume that these particularly emotive words are necessarily signifiers or riot-related meaning, but the benefit of working with these relatively small samples (in terms
of big data at least) is that it is still possible to manually follow up these inconsistencies and correct for them. The WordCloud presented has been adjusted by removing the Citizen Radio tweet.

The concept of lag was conceived in an attempt to explore the temporality of retweet chains and scripts were written accordingly. There are a few examples of research teams developing similar approaches, although these have tended to rely on strict informational approaches to information flow, mathematics and diffusion-modelling. For example, Burnap et al. (2014) calculate information flow size and survival as a way of modelling communication during an acute event, where survival is a similar concept (both epistemologically and methodologically) to lag. They find an association between these measures and sentiment scores – a finding that could not be replicated in exploratory data analysis for this thesis. Again, it is important to note the abstract and idealised nature of such communicative modelling, and to repeat the observation that it is inherently reductive to render complex meaning-making dynamics in this way.

The evocation of Derrida and différance is intentional (Derrida 1967). In a hypertext system, meaning is always deferred, through language of course, but also through the technicity of the hyperlink itself.

It is possible to access different iterations of Twitter’s proprietary code base – at different times different scripts have been made available for public access. However, the full, functioning and current code base remains commercial and confidential.
See, for instance, evidence that Twitter sentiment predicts stock market movements (Bollen et al. 2011).
Appendix A

# Connect to the Mongo DB containing all tweets

def connect():
    from pymongo import MongoClient
    client = MongoClient()
    db = client.ukriotsdb
    return db

# Calculate time intervals for desired study period

from datetime import *

# start, end datetimes; interval timedelta

def times(start_time, end_time, interval):
    period = (end_time - start_time).total_seconds() / interval.total_seconds()
    i = 0
    t = []
    while i <= period:
        t.append(start_time + (i*interval))
        i += 1
    return t

# perform calculations on tweet sample: count frequencies, user lists, sentiment scores, follower numbers

def halflife(tweets, times):
    i = 0
    out = {}
    while i < len(times):
        for item in tweets:
            if times[i] <= item['datetime'] < times[i+1]:
                if times[i] not in out:
                    out[times[i]] = {'count': 1, 'users': [item['user']]['screen_name'],
                                     'sentiment': [item['sentiment']]
                    else:
                        out[times[i]]['count'] += 1
                        if item['user']['screen_name'] not in out[times[i]]['users']:
                            out[times[i]]['users'].append(item['user'])
                        out[times[i]]['followers'] += item['user']['followers_count']
                        out[times[i]]['sentiment'].append(item['sentiment'])
                        else:
                            out[times[i]]['count'] += 1
i += 1
return out

# clean results: return 0 value if no tweets in interval

def clean_half_life(times, out):
    for i in times:
        if i not in out:
            out[i] = {'count':0, 'users':0, 'followers':0}

# Functions for textual manipulation including retweet identification, wordcloud computation and automated content analysis.

# parse tweets for NLP

def make_tags(tweets):
    from textblob import TextBlob
    for item in tweets:
        blob = TextBlob(item['text'])
        tags = blob.tags
        item['tags'] = []
        for tag in tags:
            item['tags'].append(tag[0])

# Find RTs

def find_rts(tweets):
    rt = []
    for i in tweets:
        try:
            p = [u for u,x in enumerate(i['tags']) if x == 'RT']
            for v in p:
                temp = v+1
                if i['tags'][temp] == '@':
                    rt.append(i)
        except:
            if i['text']
    return rt

# Identify and extract RT chains

def make_chains(rt):
    import difflib
    out = []
    i = 0
    while i < len(rt):
        a = rt[i]['text']
        tweets = [a]
        ids = [rt[i]['id']]
        for item in rt:
            if item['id'] not in ids:
                b = item['text']
```python
seq=difflib.SequenceMatcher(a=a.lower(), b=b.lower())
if seq.ratio() > 0.9:
    tweets.append(b)
    ids.append(item['id'])
    temp = [tweets, ids]
out.append(temp)
i += 1
return out

# chain manipulation

def filter_chains(out):
    chains = []
    for item in out:
        if len(item[1]) > 1:
            chains.append(item)
    return chains

def sort_chains(chains):
    for item in chains:
        item[0].sort()
        item[1].sort()

def tuple_chains(chains):
    tup_set = []
    for item in chains:
        temp = []
        for v in item:
            temp.append(tuple(v))
        tup_set.append(temp)
    return tup_set

def final_chains(tup_set):
    final = set(map(tuple, tup_set))
    final_list = map(list, final)
    return final_list

# lag calculations

def make_ids(chains):
    id = []
    for i in chains:
        id.append(i[1])
    return id

def make_dts(id, t):
    dt = []
    for i in id:
        temp = []
        for v in i:
            for tweet in t:
                if v == tweet['id']:
```
temp.append(tweet['datetime'])
    dt.append(temp)
return dt

def trim_dt(dt):
    for i in dt:
        if len(i) > 5:
            del i[0]
            del i[-1]

def make_lag(dt):
    lag = []
    for i in dt:
        l = i[-1] - i[0]
        av = l / len(i)
        lag.append(av)
    return lag

def chain_locator(a, t):
    out = []
    for i in a:
        temp = []
        for item in i[1]:
            for tweets in t:
                if tweets['id'] == item:
                    temp.append(tweets['user']['location'])
        out.append(temp)
    return out
Appendix B

#UKRiots
#LondonRiots

#Riots
#RiotCleanUp

#OperationCupOfTea
Wednesday coding sample (10:30 – 13:30)

Thursday coding sample (10:30 – 13:30)
### Appendix C: Riot public coding sample: adjunctive discussion tweets

<table>
<thead>
<tr>
<th>Hashtag Code</th>
<th>Deliberative Code</th>
<th>Content Coding</th>
<th>Thematic coding</th>
<th>Notes</th>
<th>Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>BR1</td>
<td></td>
<td>uRT @Chunm71: Anyone recognise this murda? NAME AND SHAME! #Londonriots #BirminghamRiots</td>
<td>RFI</td>
<td>BL</td>
<td>PRE</td>
</tr>
<tr>
<td>BR1</td>
<td></td>
<td>uHe's got this spot on. #Londonriots #Liverpoolriots #BirminghamRiots #riots</td>
<td>MM</td>
<td>PO</td>
<td>reaction shock</td>
</tr>
<tr>
<td>BR1</td>
<td></td>
<td>uhttp://t.co/YtPrQa #BirminghamRiots #Avivisana @MiliGB @Ambassador #Peace BE UPON THE MUSLIM BROTHERS. This is unbelievable!</td>
<td>NM</td>
<td>PRE</td>
<td>comparison</td>
</tr>
<tr>
<td>BR1</td>
<td></td>
<td>uLast week we forgot the 2005 Bourn Race Riots, based on rumours about a gang rape that never happened. Story: <a href="http://t.co/FDDlbh">http://t.co/FDDlbh</a>. #BirminghamRiots</td>
<td>CM</td>
<td>PO</td>
<td></td>
</tr>
<tr>
<td>BR1</td>
<td></td>
<td>u'@Uu would like 2 engage me on a personal level instead of @BirminghamRiot u can get me at @Fred1086. #BirminghamRiots. Value feedback.'</td>
<td>DA</td>
<td></td>
<td>value feedback?</td>
</tr>
<tr>
<td>BR1</td>
<td></td>
<td>u@birminghamriots 3 dead already and if we don't go beyond the 'criminal rhetoric this will happen again.'</td>
<td>PO, PRE</td>
<td></td>
<td>criminal rhetoric dangerous</td>
</tr>
<tr>
<td>BR1</td>
<td></td>
<td>uAfter the 3 Muslims who got murdered in the BirminghamRiots I really do think diff communities are now gna fight.</td>
<td>PO</td>
<td></td>
<td>different communities fight opinion</td>
</tr>
<tr>
<td>BR1</td>
<td></td>
<td>u... a fucking library, pick up a book, start reading &amp; learn something. IT'S TOTALLY FREE! #BirminghamRiots</td>
<td>PRE</td>
<td></td>
<td>declarative statement</td>
</tr>
<tr>
<td>BR1</td>
<td></td>
<td>u@Bunny Mandela thanks j i just don't want silly excuses being made for these rioters! They could have chosen not to riot at all #Birminghamriots</td>
<td>PRE</td>
<td></td>
<td>significance rioters excuses</td>
</tr>
<tr>
<td>BR1</td>
<td></td>
<td>u@Tres muertos mas en UK, en #BirminghamRiots.</td>
<td>PRE</td>
<td></td>
<td>unknown</td>
</tr>
<tr>
<td>BR1</td>
<td></td>
<td>uThe three people that died last night, RIP I do hope the Police catch the people who did that to them. #Birminghamriots</td>
<td>PRE</td>
<td>ES</td>
<td></td>
</tr>
<tr>
<td>BR1</td>
<td></td>
<td>u#Legend90: The three people that died last night, RIP I do hope the Police catch the people who did that to them. #Birminghamriots</td>
<td>PRE</td>
<td></td>
<td>reaction emotive</td>
</tr>
<tr>
<td>BR1</td>
<td></td>
<td>uLO FUKING BORED, wish these #Birminghamriots would end already so i can leave the bloody house</td>
<td>PRE</td>
<td></td>
<td>declarative statement</td>
</tr>
<tr>
<td>BR2</td>
<td></td>
<td>u@birminghamriots: Copycat wannabes when your older I'm gonna be there to fuck your life up!!! Pussy hakes!!!</td>
<td>PRE</td>
<td></td>
<td></td>
</tr>
<tr>
<td>BR2</td>
<td></td>
<td>u'It's all 2 quiet. Let's hope this isn't the calm before the storm. #BirminghamRiots'</td>
<td>PIN, PRE</td>
<td></td>
<td>comment worry</td>
</tr>
<tr>
<td>BR2</td>
<td></td>
<td>u#BirminghamRiotsthe thing is they stole tvs and they can't afford to pay tv licence'</td>
<td>PRE</td>
<td></td>
<td>comment rioter</td>
</tr>
<tr>
<td>BR2</td>
<td></td>
<td>u#BirminghamRiotsthe thing is they stole tvs and they can't afford to pay tv licence'</td>
<td>PRE</td>
<td></td>
<td>comment rioter</td>
</tr>
<tr>
<td>BR3</td>
<td></td>
<td>uThat's all 2 quiet. Let's hope this isn't the calm before the storm. #BirminghamRiots</td>
<td>PRE</td>
<td></td>
<td></td>
</tr>
<tr>
<td>BR3</td>
<td></td>
<td>u#Birminghamriots #alexmufc1 I could have sworn using mobile phones in petrol stations is slightly less dangerous than candles...</td>
<td>PRE</td>
<td></td>
<td></td>
</tr>
<tr>
<td>BR3</td>
<td></td>
<td>uhttp://t.co/Osodbv #londonriots #Manchesterriots #Birminghamriots #Banker puppet got+police brutality+betrayed youth+Londonriots #fme</td>
<td>MM, NM</td>
<td>PC</td>
<td>crisis leadership banks policies policing</td>
</tr>
<tr>
<td>BR3</td>
<td></td>
<td>uhttp://t.co/Osodbv #LondontoRiots #Manchesterriots #Birminghamriots #Banker puppet got+police brutality+betrayed youth+Londonriots #fme</td>
<td>NM, MM</td>
<td>PO</td>
<td></td>
</tr>
<tr>
<td>BR4</td>
<td></td>
<td>u#rt @Alternative We all need to take responsibility for #BirminghamRiots, #ukriots <a href="http://t.co/9M0M0Q2">http://t.co/9M0M0Q2</a></td>
<td>DA, PRE</td>
<td></td>
<td>call to responsibility</td>
</tr>
<tr>
<td>LR1</td>
<td></td>
<td>uRT @DavidAllenGreen: Post on #LondonRiots this year's #OneWebRiots for bloggig winner and #Hackney resident @Graemearcher: <a href="http://tg">http://tg</a>...</td>
<td>BL</td>
<td>PO, PR</td>
<td></td>
</tr>
<tr>
<td>LR1</td>
<td></td>
<td>uhttp://lockezzr/s/128308460 vThe police are kicking ass. #Birminghamriots #Liverpoolriots</td>
<td>BL</td>
<td>PRE</td>
<td></td>
</tr>
<tr>
<td>LR1</td>
<td></td>
<td>u#Chunm71: Anyone recognise this murda? NAME AND SHAME! #Londonriots #BirminghamRiots</td>
<td>BL</td>
<td>PRE</td>
<td></td>
</tr>
<tr>
<td>LR1</td>
<td></td>
<td>u#One young Londoner confronts Tory Banks. Johnson over #Londonriots and the lack of investment in future generations. <a href="http://t.co/PkoiH2y/">http://t.co/PkoiH2y/</a></td>
<td>BL</td>
<td>PC</td>
<td></td>
</tr>
<tr>
<td>LR1</td>
<td></td>
<td>u#RT @KeyDC: Watch this woman shouting at the rioters, facing them by herself. Good for her. Great speech. <a href="http://t.co/A7Z7qq">http://t.co/A7Z7qq</a> #Londonriots</td>
<td>BL</td>
<td>PO</td>
<td></td>
</tr>
<tr>
<td>LR1</td>
<td></td>
<td>u#Watching a good city turn bad #Londonriots <a href="http://t.co/0L06d8h">http://t.co/0L06d8h</a></td>
<td>BL</td>
<td>PRE</td>
<td></td>
</tr>
<tr>
<td>Hashtag Code</td>
<td>Text</td>
<td>Information</td>
<td>Media sharing</td>
<td>Adjunctive Discussion</td>
<td>Help &amp; Support</td>
</tr>
<tr>
<td>-------------</td>
<td>------</td>
<td>-------------</td>
<td>---------------</td>
<td>---------------------</td>
<td>---------------</td>
</tr>
<tr>
<td>LR1</td>
<td>U've il mondo fosse un computer sarebbe il momento di premere Ctrl-Alt-Canc.<a href="http://t.co/w41ijy">http://t.co/w41ijy</a> #londonriots</td>
<td>NM</td>
<td>PRE</td>
<td>comment universal</td>
<td>0</td>
</tr>
<tr>
<td>LR1</td>
<td>U'RRT @tonyachakalich: Who are the rioters? <a href="http://t.co/0k9mip">http://t.co/0k9mip</a> via @guardian #londonriots fantastic piece by @PaulLewis</td>
<td>GI</td>
<td>NM</td>
<td>rioter classification?</td>
<td>poor areas diversity nuanced descriptive</td>
</tr>
<tr>
<td>LR1</td>
<td>I've about bloody time too!!! <a href="http://t.co/yX717VR">http://t.co/yX717VR</a> &quot;sings&quot; Let the water cannon kick it! <a href="http://t.co/0Ym1Bb">http://t.co/0Ym1Bb</a> #londonriots #manchesterriots</td>
<td>MM, MM</td>
<td>PIN, PRE</td>
<td>recommendation aggressive state</td>
<td>SOC</td>
</tr>
<tr>
<td>LR1</td>
<td>u'And I thought I was the only one who u'Hope these #londonriots have him. #LondonRiots #riotcleanup</td>
<td>MM, MM</td>
<td>PC</td>
<td>psychological causes</td>
<td>SOC</td>
</tr>
<tr>
<td>LR1</td>
<td>u'@chrisbrown the thugs causing u'Heard David Cameron speaking about #londonriots #manchesterriots. #londonriots are a symptom of the #londonriot has allowed opp 2c the #londonriots Bennett diagram <a href="http://t.co/2oz49MeQH">http://t.co/2oz49MeQH</a></td>
<td>OM</td>
<td>PRE</td>
<td>comment social (humour)</td>
<td>0</td>
</tr>
<tr>
<td>LR1</td>
<td>u'@RRT @Thelklyn: Must Read: The #londonriots are a symptom of the 'burning &amp; looting' of UK public services <a href="http://t.co/QD9i0Wq">http://t.co/QD9i0Wq</a> via @reposo...</td>
<td>OM</td>
<td>PC</td>
<td>burning looting public services state responsibility</td>
<td>POL, NLC</td>
</tr>
<tr>
<td>LR1</td>
<td>u'RT @Jack_FF: More of this please! Looter rag-dolled: <a href="http://t.co/0VAMfg">http://t.co/0VAMfg</a> via @Samuel_Mallatt if darndad #LondonRiots</td>
<td>OM</td>
<td>PRE</td>
<td>signification looters</td>
<td>RAO</td>
</tr>
<tr>
<td>LR1</td>
<td>u'RT @ReactsMUF: Worst looter of them all, what a bastard. <a href="http://t.co/ur1RLkW">http://t.co/ur1RLkW</a> #UKriots #ManchesterRiots #LondonRiots</td>
<td>OM</td>
<td>PC</td>
<td>signification looters</td>
<td>RAO</td>
</tr>
<tr>
<td>LR1</td>
<td>u'RT @Editor's blog: Business and the burglars of plasma screens <a href="http://bit.ly/pkHASIM">http://bit.ly/pkHASIM</a> #HR #LondonRiots</td>
<td>OM</td>
<td>PO</td>
<td>personal moral responsibility looting HR perspective</td>
<td>RAO, RED</td>
</tr>
<tr>
<td>LR1</td>
<td>u'RT @QAmantteFC: LOL at this gif. <a href="http://t.co/%5BDXqNY">http://t.co/[DXqNY</a> #londonriots #Kloots #laughatthesic</td>
<td>OM, GM</td>
<td>PC</td>
<td>reaction humour riots = idiots scum</td>
<td>RAO</td>
</tr>
<tr>
<td>LR1</td>
<td>u'RT @Chap of the week award? <a href="http://t.co/1bHmp">http://t.co/1bHmp</a> Bloody morons the lot of them #londonriots</td>
<td>OM</td>
<td>PRE</td>
<td>signification looters</td>
<td>RAO</td>
</tr>
<tr>
<td>LR1</td>
<td>u'RT @SocEurope: New article: &quot;The #londonriots 2013 On Econsumerism coming Home to Ruin&quot; by Zygmunt Bauman <a href="http://t.co/C2jP6K">http://t.co/C2jP6K</a></td>
<td>OM</td>
<td>PRE</td>
<td>consumerist riots</td>
<td>SOC, NLC</td>
</tr>
<tr>
<td>LR1</td>
<td>u'Mhm... RT @swinwhitlaw: 'The #londonriots show journalism isn't #londonriots2013 the moral arbiter it likes to think it is!' <a href="http://t.co/LuK67752">http://t.co/LuK67752</a></td>
<td>OM, GM</td>
<td>PO, PC</td>
<td>media meta commentary</td>
<td>MC</td>
</tr>
<tr>
<td>LR1</td>
<td>u'RT @ASOS_Daniela: Something good to come out of #LondonRiots <a href="http://t.co/0t9pJG">http://t.co/0t9pJG</a></td>
<td>OM, GM</td>
<td>PRE</td>
<td>reaction something good</td>
<td>0</td>
</tr>
<tr>
<td>LR1</td>
<td>u'RT @SocEurope: Particularly taking questions. I wish if India had a PM with even 10% oratory skills!</td>
<td>OM</td>
<td>PRE</td>
<td>political comment</td>
<td>signification Cameron</td>
</tr>
<tr>
<td>LR1</td>
<td>u'RT @londonriots were the hot topic in English class today. It's so tragic and wrong, why do people do this? So unexpected itsnotforlondon</td>
<td>PRE</td>
<td>ES</td>
<td>reaction awful</td>
<td>SOL</td>
</tr>
<tr>
<td>LR1</td>
<td>u'RT @LondonRiots are a symptom of the #londonriots have allowed opp 2c the #londonriots Bennett diagram <a href="http://t.co/2oz49MeQH">http://t.co/2oz49MeQH</a></td>
<td>OM</td>
<td>PRE</td>
<td>comment social (humour)</td>
<td>signification looters</td>
</tr>
<tr>
<td>LR1</td>
<td>u'RT I hope they get those bastards who killed that man in Ealing. He was just putting a fire out. An innocent. Absolute bastards #londonriots</td>
<td>PRE</td>
<td>CTA, IA</td>
<td>reaction something good</td>
<td>0</td>
</tr>
<tr>
<td>LR1</td>
<td>u'RT I heard David Cameron speaking after #LondonRiots, particularly taking questions. I wish if India had a PM with even 10% oratory skills!</td>
<td>PRE</td>
<td>CTA, IA</td>
<td>reaction something good</td>
<td>0</td>
</tr>
<tr>
<td>LR1</td>
<td>u'RT I'm just saying... one person in the dock this morning was a 31 year old teacher for looting richer sounds Croydon?! Can't be right #londonriots</td>
<td>PRE</td>
<td>reaction emotive</td>
<td>signification looters</td>
<td>RAO</td>
</tr>
<tr>
<td>LR1</td>
<td>u'RT I'll TonyBarnesTimes it's a great point, but also listen to some of #londonriots It's great! 'We got X, Y &amp; Z' that's not hate just soiln act!&quot;</td>
<td>PO</td>
<td>PC</td>
<td>commentary causes looting vs other? consumerism</td>
<td>SOC, RAO</td>
</tr>
<tr>
<td>LR1</td>
<td>u'RT @Ammonest: RT @Wossag99 - @MelPotouK @ASPolice Here is one of the scummy wankers. RT &amp; get the bastard caught. #londonriots looter...</td>
<td>PRE</td>
<td>CTA</td>
<td>signification looters</td>
<td>RAO</td>
</tr>
<tr>
<td>LR1</td>
<td>u'I think you're wrong... this isn't the time to be talking politics. It's not right. #londonriots</td>
<td>PRE</td>
<td>CTA</td>
<td>signification looters</td>
<td>RAO</td>
</tr>
<tr>
<td>LR1</td>
<td>u'Cameron says the police will get &quot;whatever they need&quot;... mhm, so if they ask for flamethrowers...? Let's just test him. #londonriots #policebeating</td>
<td>PRE</td>
<td>comment</td>
<td>POLICE, RES</td>
<td>2</td>
</tr>
<tr>
<td>LR1</td>
<td>u'I hope these #londonriots have something to do with derral insurance;</td>
<td>PRE</td>
<td>unknown</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>LR1</td>
<td>u'And I thought I was the only one who didn't ) @ruelkisicombe ... Still don't have a clue what these #londonriots are about.&quot;</td>
<td>PRE</td>
<td>confusion</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>Hashtag Code</td>
<td>Text</td>
<td>Deliberative Code</td>
<td>Media sharing</td>
<td>Information</td>
<td>Adjective Discussion</td>
</tr>
<tr>
<td>--------------</td>
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</tr>
<tr>
<td>LR1</td>
<td>#londonriots: And I thought I was the only one who didn't! } &quot;@lukeslocombe: Still don't have a clue what these #LondonRiots are about...&quot;</td>
<td>confusion</td>
<td>PRE</td>
<td>unknown</td>
<td>comment</td>
</tr>
<tr>
<td>LR1</td>
<td>I keep hearing about all the #LondonRiots blokes calling themselves &quot;freedom fighters&quot; and all I can think of is a Braveheart but we've chains</td>
<td>signification noters</td>
<td>PRE</td>
<td>unknown</td>
<td>comment</td>
</tr>
<tr>
<td>LR1</td>
<td>&quot;Police Dogs get injured but they won't use WATER cannons. That's the British Government's way of thinking #LondonRiots</td>
<td>police dogs injured but no water cannons</td>
<td>PRE, PO</td>
<td>unknown</td>
<td>reaction</td>
</tr>
<tr>
<td>LR1</td>
<td>I'm insisting it's bloodily horrendous #LondonRiots!</td>
<td>reaction shock</td>
<td>PRE</td>
<td>unknown</td>
<td>comment</td>
</tr>
<tr>
<td>LR1</td>
<td>&quot;RT @dorkisandwich: 33% support use of live ammunition against #LondonRiots, demonstrating once again why community safety isn't in the h...&quot;</td>
<td>contrast national egypt uk economic triggers</td>
<td>CI</td>
<td>unknown</td>
<td>comment</td>
</tr>
<tr>
<td>LR1</td>
<td>#Londonriots I wonder if the MET Police will contact the Cloudmakers re: the little matter of rioting #problemsolving #LondonRiots</td>
<td>unknown</td>
<td>PRE</td>
<td>unknown</td>
<td>comment</td>
</tr>
<tr>
<td>LR1</td>
<td>&quot;RT @KingQua2nd: TBM Tony Blair is the best PM we have had in a long time! I miss that guy @Homo_bot @LondonRiots! Fuck Blair yo!&quot;</td>
<td>comment politics</td>
<td>PRE</td>
<td>unknown</td>
<td>politics</td>
</tr>
<tr>
<td>LR1</td>
<td>I'm assuming the only place that hasn't been looted is the local library... #LondonRiots</td>
<td>contrast national egypt uk economic triggers</td>
<td>PO</td>
<td>unknown</td>
<td>comment</td>
</tr>
<tr>
<td>LR1</td>
<td>&quot;RT @spikedonline: Why do people assume a gathering of white blokes defending their town is a racist pogrom-in-the-making? #LondonRiots...&quot;</td>
<td>race assumptions</td>
<td>PRE</td>
<td>unknown</td>
<td>reaction</td>
</tr>
<tr>
<td>LR1</td>
<td>&quot;How many involved in the #LondonRiots will claim incapacity benefit for bad backs after carrying those TVs? Remove their benefits for life!&quot;</td>
<td>signification looters punishment</td>
<td>PRE</td>
<td>unknown</td>
<td>comment</td>
</tr>
<tr>
<td>LR1</td>
<td>I can't help but draw contrast between #Egypt #Jan25 uprising and #LondonRiots with same economic triggers - who's civilized now? #justsaying</td>
<td>unknown</td>
<td>PRE</td>
<td>unknown</td>
<td>reaction</td>
</tr>
<tr>
<td>LR1</td>
<td>#LondonRiots Are they rioting? I just saw people hell bent on going out looting!</td>
<td>making light</td>
<td>G1</td>
<td>unknown</td>
<td>comment</td>
</tr>
<tr>
<td>LR1</td>
<td>&quot;RT @MitsosMurt: Oh dear London! I see 2012 around the corner seriously! #LondonRiots&quot;</td>
<td>comment normal</td>
<td>PRE</td>
<td>unknown</td>
<td>making light</td>
</tr>
<tr>
<td>LR1</td>
<td>I will keep you updated on the current government status in dealing with the #LondonRiots</td>
<td>comment normal</td>
<td>PRE</td>
<td>unknown</td>
<td>making light</td>
</tr>
<tr>
<td>LR1</td>
<td>&quot;RT @LondonRiots Are they rioting? I just saw people hell bent on going out looting!&quot;</td>
<td>comment</td>
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<td>making light</td>
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<td>LR1</td>
<td>&quot;RT @MitsosMurt: Oh dear London! I see 2012 around the corner seriously! #LondonRiots&quot;</td>
<td>comment normal</td>
<td>PRE</td>
<td>unknown</td>
<td>comment</td>
</tr>
<tr>
<td>LR1</td>
<td>&quot;RT @AdamHLeaver: Is Martial Law on its way? Do the big guns need to come out? #LondonRiots&quot;</td>
<td>comment normal</td>
<td>PRE</td>
<td>unknown</td>
<td>comment</td>
</tr>
<tr>
<td>LR1</td>
<td>&quot;RT @MitsosMurt: Oh dear London! I see 2012 around the corner seriously! #LondonRiots&quot;</td>
<td>comment normal</td>
<td>PRE</td>
<td>unknown</td>
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</tr>
<tr>
<td>LR1</td>
<td>&quot;Where's Danny Dyer, and what's he up to now? I’ve thought of a propa nasty film to get up and running rhansomwhat #LondonRiots &quot;</td>
<td>PRE</td>
<td>making light</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>LR1</td>
<td>&quot;...a fucking library, pick up a book, start reading &amp; learn something. IT'S TOTALLY FREE! #BirminghamRiots #LondonRiots&quot;</td>
<td>PRE</td>
<td>anger rioter read books</td>
<td>RAO</td>
<td>2</td>
</tr>
<tr>
<td>LR1</td>
<td>&quot;@OrderOf9Angles What's happening is certainly no protest, but there is plenty of terror. Buy a dictionary. #LondonRiots&quot;</td>
<td>PRE</td>
<td>comment riot signification (not protest)</td>
<td>RAO</td>
<td>2</td>
</tr>
<tr>
<td>LR1</td>
<td>&quot;@RT @RobertBenfer: The #Londonriots weren't just about looting, they were about. Nah it was just about looting.&quot;</td>
<td>PO</td>
<td>opinion lootin simple</td>
<td>SOC, RAO</td>
<td>3</td>
</tr>
<tr>
<td>LR1</td>
<td>&quot;As much as I approve of people standing up for themselves, this has been taken way too far with innocent people being hurt #LondonRiots&quot;</td>
<td>PRE</td>
<td>declarative stategment</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>LR1</td>
<td>&quot;@RT @RasamahMK: FLIP the 3 British-Pakistani Muslims killed by looters in Birmingham while defending their community&amp;mosque #LondonRiots&quot;</td>
<td>PRE</td>
<td>solidarity</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>LR1</td>
<td>&quot;Started in hackney again last night, police dogs going into my mates garden, lucky it hasn't come to Highbury THANK GOD #LondonRiots&quot;</td>
<td>SI</td>
<td>reaction commentary</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>LR1</td>
<td>&quot;@Robert_F_AFC I hope you and your family are safe! One of my friends in Birmingham is in hospital, not good at all #LondonRiots&quot;</td>
<td>DA, PRE</td>
<td>reaction worry</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>LR1</td>
<td>&quot;#LondonRiots r truly only mo' extreme manifestations of riots happening everywhere, external reflection of dysfunctional, intrinsic state.&quot;</td>
<td>PO</td>
<td>state distunction reaction</td>
<td>SOC, POL</td>
<td>3</td>
</tr>
<tr>
<td>LR1</td>
<td>&quot;These riots are the finger pointing at the problem. Don't focus on the finger #LondonRiots&quot;</td>
<td>PRE, PO</td>
<td>deeper causes?</td>
<td>SOC</td>
<td>3</td>
</tr>
<tr>
<td>LR1</td>
<td>&quot;Kind of housebound currently, anyone know if all's unboarded and open for business in London today? Seems very quiet here #LondonRiots&quot;</td>
<td>RFI</td>
<td>unknown</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>LR1</td>
<td>&quot;@RT @Stokiebabajog: &quot;Don't know what I want, but I know how to get it&quot; (See Pilots) #LondonRiots #GBBO&quot;</td>
<td>PRE</td>
<td>comment</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>LR1</td>
<td>&quot;@RT @ipapersman: Let's get one thing straight: these people aren't 'protesting', they are looting and destroying. #LondonRiots&quot;</td>
<td>PRE</td>
<td>signification looters</td>
<td>RAO</td>
<td>2</td>
</tr>
<tr>
<td>LR1</td>
<td>&quot;@zu2010YT natalanarazman: #Londonriots should stop #zu201d let's be honest riots going on everywhere need to stop it&quot;</td>
<td>PO</td>
<td>emphasis on national nature</td>
<td>0</td>
<td>2</td>
</tr>
<tr>
<td>LR1</td>
<td>&quot;@RT @skypesdomedine: Brendan O'Neill says there's nothing political about #LondonRiots, which are being carried out by a motleycoddled mob ...&quot;</td>
<td>GI</td>
<td>no political cause mob</td>
<td>RAO, RED</td>
<td>3</td>
</tr>
<tr>
<td>LR1</td>
<td>&quot;@zu2010YT @skhar_cawsey: This is just getting ridiculous #LondonRiots #zu201d; saw you shoving dressess up your top at bluewater last night didn't i?&quot;</td>
<td>DA, PRE</td>
<td>confusion</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>LR1</td>
<td>&quot;@Flaw over to the #LondonRiots, couldn't use my claws on them kids, got bored, went to The Griffin and got drunk.&quot;</td>
<td>PRE</td>
<td>making light</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>LR1</td>
<td>&quot;@Dita think Theresa may gets 'va31 every time she uses the word robust! #LondonRiots&quot;</td>
<td>PRE</td>
<td>comment</td>
<td>0</td>
<td>2</td>
</tr>
<tr>
<td>LR1</td>
<td>&quot;Meant to be working but have to admit I'm glued to the news need to drag myself away from the TV #LondonRiots&quot;</td>
<td>PN</td>
<td>comment news engrossing</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>LR1</td>
<td>&quot;@RT @iamviewfromheal: It's ridiculous that people are claiming that the #LondonRiots are in protest against government austerity instead of ...&quot;</td>
<td>PO</td>
<td>riots not a protest against austerity</td>
<td>SOC, RED</td>
<td>3</td>
</tr>
<tr>
<td>LR1</td>
<td>&quot;@RT @orl_nena: #zu201dWell, you know, like, I don't really give a fuck what the general public think #zu201d St Vicious #Londonriots&quot;</td>
<td>PRE</td>
<td>unknown</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>LR1</td>
<td>&quot;@RT @spaldingbhearn: What's happening in #LondonRiots is truly no surprise: they are a direct result of the utter failure of the UK government #LondonRiots&quot;</td>
<td>PRE</td>
<td>comment punish looters</td>
<td>RAO</td>
<td>2</td>
</tr>
<tr>
<td>LR2</td>
<td>@Flawed_leash @jag_rwae @jag_halder (looting RT @Danny_85 The looting has begun #mangenerdos #Londonriots <a href="http://t/ffrog.com/9y7p">http://t/ffrog.com/9y7p</a>)</td>
<td>EL</td>
<td>unknown</td>
<td>NN</td>
<td>?</td>
</tr>
<tr>
<td>LR2</td>
<td>@Not sure about blaming the parents but check it: <a href="http://t.co/0y1t85X">http://t.co/0y1t85X</a> @LondonRiots #Londonriotsanalysis</td>
<td>CM</td>
<td>probation politician comparison</td>
<td>SOC, POL</td>
<td>3</td>
</tr>
<tr>
<td>LR2</td>
<td>@Hafza Hasnain. Shahzad Ali, Abdul Musaev <a href="http://t.co/E5oaQvC">http://t.co/E5oaQvC</a> #LondonRiots #hajings #jungs</td>
<td>CM</td>
<td>focus on heroes standing up against rioters</td>
<td>SOI</td>
<td>2</td>
</tr>
<tr>
<td>LR2</td>
<td>&quot;@RT @charmity: BBC Doesn't Want To Hear the Real Reasons for the London Riots - VIDEO: <a href="http://on.fb.me/0dWGBW">http://on.fb.me/0dWGBW</a> @j2 #Londonriots #skunks&quot;</td>
<td>CM</td>
<td>austerity youth politics youth clubs</td>
<td>SOC, NLC, MC</td>
<td>3</td>
</tr>
<tr>
<td>Hashtag Code</td>
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<td>----------------------------------------------------------------------</td>
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</tr>
<tr>
<td>LR2</td>
<td>#londonriots RT? name &amp; shame! <a href="http://t.co/OFHR8b2">http://t.co/OFHR8b2</a> Check it out!</td>
<td>GI, RFI</td>
<td>CM, MM</td>
<td>PRE</td>
<td>CTA</td>
</tr>
<tr>
<td>LR2</td>
<td>#RT @charliehebdo: #EDL attacks a bus - they are not the defenders of our community! <a href="http://t.co/883b3o">http://t.co/883b3o</a> what #blackheads #londonriots</td>
<td>GI</td>
<td>MM</td>
<td>PRE</td>
<td></td>
</tr>
<tr>
<td>LR2</td>
<td>#RT @GirataliSpoke: #frayations #londonriots <a href="http://t.co/4iSmpy">http://t.co/4iSmpy</a></td>
<td>MM</td>
<td>PRE</td>
<td>ES</td>
<td></td>
</tr>
<tr>
<td>LR2</td>
<td>#RT @damianthompson: BBC Doesn’t Want to Hear the Real Reasons for the London Riots - VIDEO: <a href="http://on.fb.me/c0W6g86">http://on.fb.me/c0W6g86</a> #londonriots #ukriots</td>
<td>MM, OM</td>
<td>PC</td>
<td>MC</td>
<td></td>
</tr>
<tr>
<td>LR2</td>
<td>#RT @londonriots: #BackOnItsFeet. Join us... affects by #Londonriots to help get spend £10 in all my local shops</td>
<td>MM</td>
<td>MM, NM</td>
<td>PRE</td>
<td></td>
</tr>
<tr>
<td>LR2</td>
<td>#RT @kirstypatterson: I’ve pledged to spend £10 in all my local shops affected by #londonriots to help get Earl/E #backonitsfeet. Join us...</td>
<td>OM, PC</td>
<td>PRE</td>
<td>IA, CTA</td>
<td></td>
</tr>
<tr>
<td>LR2</td>
<td>#RT @londonriots: #BackOnItsFeet. Join us... affects by #Londonriots to help get spend £10 in all my local shops</td>
<td>OM, NM</td>
<td>PC</td>
<td>MC</td>
<td></td>
</tr>
</tbody>
</table>

u'No core, proud identity to fall back on http://t.co/5TmBWkh”

u'If the #londonriots is about looting and violent fun. #sad

u'some of the #londonriots are about http://t.co/soSH4KSnM

u'@RT @WanhamR: Full text of Cameron’s speech on Prime Minister is on top of the boiling/note/looting/riot

u'wix(VV03) #FRJ #Londonriots #1201d #londonriots

u'LondonRiots #UKRiots #Northcleanup

u'@The BBC #newsnight debate w/ Diane Abbott on right now. is the most completely out of touch discussion on #LondonRiots I've seen so far!

u'Please research about the black community in London, Nigeria, Ghana, Somalia & watch the news before you make any comment on da #LondonRiots

u'@1equalmusic: http://t.co/tco/idM6hhM via @youtube #shocking'

u'RT @thekarachikid: RT @guardian: “An Open Letter to David Cameron’s Parents: #afc #arsenal #LondonRiots, if you crazy English

u'@1equalmusic: http://t.co/d04ledN’

u'UKRiots #LondonRiots now up on No 10 website

u'An Open Letter to David Cameron’s Parents: http://t.co/obti8wqgx4 #LondonRiots #afc #arsenal #LondonRiots

u'Open Letter to David Cameron’s Parents: #UKRiots #LondonRiots #afc #arsenal #LondonRiots

u'In my eyes and pray. #LondonRiots #riot #afc #arsenal #LondonRiots #riots

u'@ChefNero: RT @guardian: “If We Don’t Riot, You Don’t Listen… recipe for problems. http://t.co/nuNc9”

u'is locking away the kids of the #LondonRiots really the solution?Read http://t.co/tdvLHdZ

u'@1equalmusic: #afc #arsenal: #afc #arsenal: #UKRiots #LondonRiots

u'Open Letter to David Cameron’s Parents: http://t.co/obti8wqgx4 #LondonRiots #afc #arsenal #LondonRiots

u'Open Letter to David Cameron’s Parents: http://t.co/obti8wqgx4 #LondonRiots #afc #arsenal #LondonRiots

u'Open Letter to David Cameron’s Parents: #UKRiots #LondonRiots

u'@The BBC #newsnight debate w/ Diane Abbott on right now. is the most completely out of touch discussion on #LondonRiots I've seen so far!

u'As ever Camer-moron the British Prime Minister is on top of the boiling/note/looting/riot

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u'n this absolutely terrible: i close my eyes and pray. #LondonRiots #prayforlondon!

u'As ever Camer-moron the British Prime Minister is on top of the boiling/note/looting/riot

u'@1equalmusic: #afc #arsenal: #afc #arsenal: #UKRiots #LondonRiots

u'Open Letter to David Cameron’s Parents: http://t.co/obti8wqgx4 #LondonRiots #afc #arsenal #LondonRiots

u'Open Letter to David Cameron’s Parents: #UKRiots #LondonRiots

u'LondonRiots #UKRiots #Northcleanup

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u'Please research about the black community in London, Nigeria, Ghana, Somalia & watch the news before you make any comment on da #LondonRiots

u'Oh for heavens sake it’s not music that is causing these #Londonriots!!!

u'RT @aerotwist: Remember that photo of the #londonriots I said I found most distressing? pics that show it was just boring and violent fun. #afc #arsenal

u'@1equalmusic: http://t.co/tco/idM6hhM via @youtube #shocking'

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u'@1equalmusic: #afc #arsenal: #afc #arsenal: #UKRiots #LondonRiots

u'Open Letter to David Cameron’s Parents: http://t.co/obti8wqgx4 #LondonRiots #afc #arsenal #LondonRiots

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u'Please research about the black community in London, Nigeria, Ghana, Somalia & watch the news before you make any comment on da #LondonRiots

u'n this absolutely terrible: i close my eyes and pray. #LondonRiots #prayforlondon!

u'Hearing lots of sirens flying down Finchley Road. Hopeing it’s not related to the boiling/note/looting/riot #LondonRiots'

u'Verylator @1equalmusic: #afc #arsenal: #afc #arsenal: #UKRiots #LondonRiots

u'focked up rage, pics show that it was just boring and violent fun. #afc #arsenal

u'@1equalmusic: #afc #arsenal: #afc #arsenal: #UKRiots #LondonRiots

u'Open Letter to David Cameron’s Parents: http://t.co/obti8wqgx4 #LondonRiots #afc #arsenal #LondonRiots

u'Open Letter to David Cameron’s Parents: #UKRiots #LondonRiots

u'@The BBC #newsnight debate w/ Diane Abbott on right now. is the most completely out of touch discussion on #LondonRiots I've seen so far!

u'Please research about the black community in London, Nigeria, Ghana, Somalia & watch the news before you make any comment on da #LondonRiots

u'Oh for heavens sake it’s not music that is causing these #Londonriots!!!

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u'Open Letter to David Cameron’s Parents: #UKRiots #LondonRiots
u"@2011cil:@paige_@akey: read my article about youths #LondonRiots and my role in f@attakhte@block & #theknot in the http://t.co/Vv0QeBNS RT"

u"@2011cil:guardian: David Cameron considers banning rioters from social media http://t.coJVULy#Kiots #Londonriots #AskTheKnot Video The man is an idiot"

u"UK PM considers banning suspected rioters from social media http://t.co/yDRAik #Londonriots agree w/ rocking!banks but not free speech/

u"RT @newsubrecipe: Yet again @DavidAltenGreen is the voice of reason. This time on #Londonriots. http://t.co/xHvK"

u"@http://t.co/O4Sd1v #Londonriots #manchesterriots #birminghamriots Banker puppet govt+police brutality +betrayed youth #Londonriots thtwd...

u"I'm worried. #LondonRiots"

u"Everyone needs to RT this!! I hope @Hey_SoulSister gets what she deserves, the EVIL VITCH. http://t.co/ymne6U5 #LondonRots RT"


u"I think the Queen is fasting because the situation in England makes me unity = fasting

u"The #Londonriots happened because of #racism. I'm worried. #Londonriots #theknot #attacktheblock"

u"UK PM considers banning suspected rioters from social media http://t.co/yDRAik #Londonriots agree w/ rocking!banks but not free speech/

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<tbody>
<tr>
<td>LR3</td>
<td>U'Exactly RT &quot;InFruFirms: When's a Cameron's compensation for decades of economic irrationalism and elite looting? #Londonriots #FrueNeuealsamos&quot;</td>
<td>PRE</td>
<td>PO</td>
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<tr>
<td>LR3</td>
<td>U'Sky news headline: &quot;we don't want culture of fear&quot; ... #Londonriots Erinyei</td>
<td>GI</td>
<td>PRE</td>
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<tr>
<td>LR3</td>
<td>U'Just saw the video of the Milan kid re #Londonriots, i don't know how you can say mob rule is OK. Any large gathering can end up like that:</td>
<td>PO, PRE</td>
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<tr>
<td>LR3</td>
<td>U @Asher_Wolf I think the bigger concern was shutting down mobile networks #Londonriots</td>
<td>DA</td>
<td>MC</td>
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<tr>
<td>LR3</td>
<td>U'RT @spaulmakepeace: I'm glad to see David Cameron has restored our decency to our streets #Londonriots</td>
<td>PRE</td>
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<td>LR3</td>
<td>U'RT @PeterTatchell: Cameron wants looters jailed. Lehu2019s start with MPs who looted the expenses system #Londonriots #UKriots #GJaggers #Love ...</td>
<td>PO</td>
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<tr>
<td>LR3</td>
<td>U'I want a dignified PM, not someone who throws out words like they are sick 'thugs' etc. He needs more graviats. #Londonriots</td>
<td>PO</td>
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<td>LR3</td>
<td>U'RT @LeahBH: #BCC doesn't cover the #LondonRiots as much as it did #Bahman in fear of cancellation of #LondonOlympics #2012 ...</td>
<td>PO, MC</td>
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<tr>
<td>LR3</td>
<td>U'‘These #Londonriots costing the Government’s purse millions of pounds when we are already on the brink #lootisholigan</td>
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<tr>
<td>LR3</td>
<td>U'Do we ban the video camera because some people use it to make profit? Don't blame social media for #Londonriots #ukriots</td>
<td>PO, MC</td>
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<td>LR3</td>
<td>U'RT #riots2012: Shorter Parliament: I WANT VENGEANCE! FUCK THE INEVITABLE NEGATIVE CONSEQUENCES! #ukriots #Londonriots #Blackup</td>
<td>PO, PRE</td>
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<tr>
<td>LR3</td>
<td>U'‘#Londonriots no matter what the economic situation is, there is no justification for destroying innocent people’s homes and businesses’</td>
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<td>LR3</td>
<td>U'RT @Polly_Evans: RT u2013c&gt;&lt;&gt;&lt; Williamson: Tweeting in Kabul airport! Real irony if #Londonriots results in #Afghanistan being free-er than UK ...</td>
<td>PIN, PRE</td>
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<td>LR3</td>
<td>U‘Don’t have a problem banning face coverings, head scarves and hoodies for a period to assert responsibility? #LondonRiots</td>
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<td>LR4</td>
<td>U'Government multi media controls after #Londonriots. <a href="http://it.co.uk/d/rh64R8">http://it.co.uk/d/rh64R8</a> Social media is a tool. How you use it is up to you.</td>
<td>BL</td>
<td>PC</td>
<td>MC</td>
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<td>social media meta commentary</td>
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<td>LR4</td>
<td>U'RT #Londonriots #Olympics #LondonRiots #London2012 #London2012: social media meta controls after #Londonriots. <a href="http://it.co.uk/d/rh64R8">http://it.co.uk/d/rh64R8</a> Social media is a tool. How you use it is up to you.</td>
<td>CM</td>
<td>PO, PC</td>
<td>MC</td>
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<td>human causes minority response</td>
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<td>LR4</td>
<td>U'#Londonriots are just getting silly now. Some black lady is pissed. <a href="http://it.co.uk/d/gjefeO">http://it.co.uk/d/gjefeO</a></td>
<td>GI</td>
<td>CM, PC</td>
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<td>empirics correlation not causation poverty riots</td>
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<td>LR4</td>
<td>U'Verse: ... There is no sense of community because they haven’t been given one. Rusulf Brand: <a href="http://it.co.uk/d/GJefeO">http://it.co.uk/d/GJefeO</a> #Londonriots #London2012</td>
<td>MM</td>
<td>PRE</td>
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<td>comment questionable sincerity</td>
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<td>PC</td>
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<td>nuisance community deprivation politics complexity reaction</td>
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<tr>
<td>LR4</td>
<td>U'Riot in London. RT @proslavisharvey Feral Capitalism Hits The Streets. <a href="http://it.co.uk/d/0ou5R9A">http://it.co.uk/d/0ou5R9A</a></td>
<td>CM, CM, PC</td>
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<td>left critique feral capitalism political economy mass dispossession</td>
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<td>LR4</td>
<td>U'@Dynamagician please listen and RT a friends view on recent events <a href="http://it.co.uk/d/TQyfeu-c">http://it.co.uk/d/TQyfeu-c</a> #Londonriots</td>
<td>CM, MM</td>
<td>PO</td>
<td>CTA</td>
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<tr>
<td>LR4</td>
<td>U'Morceau de rap pas mal du tout sur un sujet d'actualité #London #Londonriots. <a href="http://it.co.uk/d/kk8R8">http://it.co.uk/d/kk8R8</a></td>
<td>CM, MM</td>
<td>PO</td>
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<td>U'GasseetsShots I take if the criticism has started! Then #Londonriots</td>
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<td>declarative statement</td>
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<tr>
<td>LR4</td>
<td>U'This is terrible! I feel like throwing something at my new 42&quot; plasma @BBCQT #londonriots</td>
<td>PN, PRE</td>
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<td>reaction shock spooO</td>
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<td>LR4</td>
<td>U'English Defence League you don't defend me, nor stand up for what I believe in. #EDL #Londonriots</td>
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<td>declarative statement</td>
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<tr>
<td>MR1</td>
<td>@JimKerrRMT: If you want to stand up and stand up and say &quot;no more&quot;... #Manchester &lt;br&gt;<a href="http://t.co/8UuSc69K">http://t.co/8UuSc69K</a></td>
<td>BL</td>
<td>PRE</td>
<td>unknown</td>
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<tr>
<td>MR1</td>
<td>@ManchesterRMT: Community is rising up against rioters - Politicians quick to score photo ops - <a href="http://t.co/0XoJURy">http://t.co/0XoJURy</a></td>
<td>GI</td>
<td>BL</td>
<td>PD</td>
<td>politics opportunism</td>
<td>RES, O</td>
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<tr>
<td>MR1</td>
<td>@<a href="http://t.co/SgFwifKmgShows">http://t.co/SgFwifKmgShows</a> just how stupid the majority of louters. #ManchesterRMT #Londonriots</td>
<td>BL</td>
<td>PRE</td>
<td>looter stupidity</td>
<td>RAO</td>
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<tr>
<td>MR1</td>
<td>@Interesting look at the &quot;catch a looter&quot; sites going up <a href="http://t.co/T2iC0i">http://t.co/T2iC0i</a> #ManchesterRMT #AntiRiots</td>
<td>CM</td>
<td>PO, PC</td>
<td>MC</td>
<td>meta social media</td>
<td>RES</td>
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<tr>
<td>MR1</td>
<td>@you don't fuck with the GMP or the GMP fuck with you <a href="http://t.co/mN3UQk#">http://t.co/mN3UQk#</a> #ManchesterRMTs</td>
<td>SI</td>
<td>MM</td>
<td>PRE</td>
<td>recommendation</td>
<td>POLICE, RES</td>
<td>2</td>
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<tr>
<td>MR1</td>
<td>@Liam Gallagher's store also hit - ironic, louters decided to steal from their own: <a href="http://tweep.com/6Ibyvou">http://tweep.com/6Ibyvou</a> #ManchesterRMTs #PrettyGreen</td>
<td>SI</td>
<td>MM, CM</td>
<td>PRE</td>
<td>signification</td>
<td>RAO</td>
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<tr>
<td>MR1</td>
<td>@About bloody time too!!! <a href="http://t.co/TATtVR">http://t.co/TATtVR</a> &quot;sings&quot; Let the water cannon kick @ <a href="http://t.co/qVmD8p">http://t.co/qVmD8p</a></td>
<td>NM, MM</td>
<td>PRE</td>
<td>SPAM</td>
<td>recommendation</td>
<td>RAO, RES</td>
<td>2</td>
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<tr>
<td>MR1</td>
<td>@RT @FootballAgentPM: Recognise these louters from the #ManchesterRMTs then contact @GMPolice with information. Stand up for what's right...</td>
<td>GI</td>
<td>MM, MM</td>
<td>PO</td>
<td>racism today state blame foreign wars</td>
<td>SOC, RED</td>
<td>3</td>
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<tr>
<td>MR1</td>
<td>@I feel absolutely sick, just seen a picture from #ManchesterRMTs of people i kind of know.</td>
<td>SI</td>
<td>PIN</td>
<td>reaction shock</td>
<td>O</td>
<td>1</td>
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<tr>
<td>MR1</td>
<td>@A relationship is only meant for two people, but some bitches these days just don't know how to count. #ManchesterRMTs #riotkaun</td>
<td>PRE</td>
<td>unknown</td>
<td>O</td>
<td>1</td>
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<td>@RT @FootballAgentPM: Recognise these louters from the #ManchesterRMTs then contact @GMPolice with information. Stand up for what's right...</td>
<td>PRE</td>
<td>CTA</td>
<td>commentary</td>
<td>RAO, RES</td>
<td>2</td>
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<tr>
<td>MR1</td>
<td>@RT @DaveWinder1: I think thats called incitement @Tony_UFCool Oh yes I Hope MANCHESTER gets destroyed Tonight #ManchesterRMT #GMPolice</td>
<td>GI</td>
<td>MM, MM</td>
<td>PO</td>
<td>commentary</td>
<td>O</td>
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<tr>
<td>MR1</td>
<td>@for once thank god for the rain. Looting ain't such fun when you are p....d wet through #manchesterRMTs #riotkaun</td>
<td>PRE</td>
<td>Other</td>
<td>none</td>
<td>O</td>
<td>1</td>
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<tr>
<td>MR1</td>
<td>@Great quote from Waterstone's employee on the news: &quot;We'll stay open, if they steal some books they might learn something&quot; #manchesterRMTs</td>
<td>GI</td>
<td>PRE</td>
<td>signification</td>
<td>RAO</td>
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<tr>
<td>MR1</td>
<td>@CharlotteGoult @notlootanynmore Yeah I have. Great to see! Hearing the place is starting to resemble a city again? #ManchesterRMTs</td>
<td>RFI</td>
<td>DA</td>
<td>ES</td>
<td>reaction hope?</td>
<td>O</td>
<td>1</td>
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<tr>
<td>MR1</td>
<td>@jazzart_F1 did u see that little cunt on #kymnews being interviewed last night #manchesterRMTs</td>
<td>PRE</td>
<td>signification</td>
<td>RAO</td>
<td>0</td>
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<tr>
<td>MR2</td>
<td>@Everyone expected #Leedsriots to happen because of the #Londonriots and #ManchesterRMTs this is what they get <a href="http://t.co/LHBE94">http://t.co/LHBE94</a></td>
<td>MM</td>
<td>PRE</td>
<td>comparison</td>
<td>RAO</td>
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<tr>
<td>MR2</td>
<td>@RT @AWNicholson88: Pj On The News Whom R Making Excuses For #ManchesterRMTs R SCUM?! There Is NO Excuse?!</td>
<td>PRE</td>
<td>signification</td>
<td>RAO, RED</td>
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<tr>
<td>MR2</td>
<td>@l! Robot is like Manchester... Riots! #ManchesterRMTs</td>
<td>PRE</td>
<td>unknown</td>
<td>O</td>
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<tr>
<td>MR2</td>
<td>@When the only shops that sell van caps get looted and you can't get one @ManchesterRMTs</td>
<td>PRE</td>
<td>comment</td>
<td>O</td>
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<td>MR3</td>
<td>@LadyLikeTheBoot Attention: Capital in chaos!! #fuckrite #ManchesterRMTs <a href="http://t.co/COOLPHD">http://t.co/COOLPHD</a></td>
<td>BL</td>
<td>PRE</td>
<td>declarative</td>
<td>O</td>
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<tr>
<td>MR3</td>
<td>@<a href="http://t.co/4GzJ5ak">http://t.co/4GzJ5ak</a> #liverpoolriots #ukriots #manchesterriots THIS IS EXACTLY RIGHT!!!</td>
<td>MM</td>
<td>PO, PC</td>
<td>police brutality</td>
<td>SOC, NLC</td>
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<td>MR4</td>
<td>@Why can't we see that 12yo lad's face &amp; his vile mother on BBC News? #ManchesterRMTs</td>
<td>PRE</td>
<td>signification</td>
<td>RAO</td>
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<tr>
<td>OCT1</td>
<td>@OperationCupOfTea Less riots in London with 16000 police were on duty - Riots spread to rest of country instead - <a href="http://t.co/0FwJW3">http://t.co/0FwJW3</a></td>
<td>BL</td>
<td>PRE</td>
<td>possible opinion?</td>
<td>SOC</td>
<td>4</td>
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<tr>
<td>OCT1</td>
<td>@OperationCupOfTea A very British way of handling things <a href="http://t.co/btHY9C">http://t.co/btHY9C</a></td>
<td>BL</td>
<td>PRE</td>
<td>ES</td>
<td>national identity</td>
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<tr>
<td>OCT1</td>
<td>@Blog post on the riots - The England Riots <a href="http://t.co/qpmT3cr">http://t.co/qpmT3cr</a> #riotcleanup #OperationCupOfTea #Riots</td>
<td>CM</td>
<td>PO, PC</td>
<td>personal moral responsibility</td>
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<tr>
<td>OCT1</td>
<td>@Interesting idea... not sure if it would work though... <a href="http://t.co/s7OxHe">http://t.co/s7OxHe</a> #riotkaun #OperationCupOfTea</td>
<td>GM</td>
<td>PRE</td>
<td>IA</td>
<td>expression interest</td>
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<td>Adjunctive Discussion</td>
<td>Help &amp; Support</td>
<td>Meta</td>
<td>SPAM/Other</td>
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<td>OCT1</td>
<td>#Riots: #OperationCupOfTea - <a href="http://t.co/">http://t.co/</a> s6KZET1</td>
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<td>OCT1</td>
<td>#Riots: TV Presenter @GeriHalli</td>
<td>GI</td>
<td>MM</td>
<td>reaction humour</td>
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<tr>
<td>OCT1</td>
<td>#Riots: We've decided to join in with #OperationCupOfTea what else is there to do when the world is in a mess?!!</td>
<td>PRE</td>
<td>ES</td>
<td>supportive statement</td>
<td>SOL</td>
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<td>#Riots: OperationCupOfTea LET'S DRINK TEA! wait a minute... i cant ...</td>
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<td>ES</td>
<td>supportive statement</td>
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<td>OCT1</td>
<td>#Riots: OperationCupOfTea - Milk, 3 sugar's... Just got the kettle on. Anyone else?</td>
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<td>supportive statement</td>
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<td>#Riots: I love #OperationCupOfTea</td>
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<tr>
<td>OCT1</td>
<td>#Riots: #Football: DON'T MAKE WAR MAKE TEA! #OperationCupOfTea</td>
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<td>supportive statement</td>
<td>SOL</td>
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<td>OCT1</td>
<td>#Riots: I like that #OperationCupOfTea is trending, such a British response, I'll raise my mug of Green Tea to that! Seymour</td>
<td>PRE</td>
<td>MC</td>
<td>supportive statement</td>
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<tr>
<td>OCT1</td>
<td>#Riots: I think Team India is planning for Tea Party #OperationCupOfTea</td>
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<td>#Riots: I regard less of the riots, I need #OperationCupOfTea</td>
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<td>OCT1</td>
<td>#Riots: So the US has the appalling Tea Party movement... the UK has #OperationCupOfTea Sometimes I'm so proud to be British</td>
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<td>supportive statement</td>
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<td>#Riots: OperationCupOfTea I think some Earl Grey...</td>
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<td>supportive statement</td>
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<td>OCT1</td>
<td>#Riots: Ah now a hashtag I can actually get behind - time to stock the kettle on... #OperationCupOfTea</td>
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<td>OCT1</td>
<td>#Riots: Might be time for #OperationCupOfTea kitchen here i came. Or am I missing something?</td>
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<td>OCT1</td>
<td>#Riots: I see #OperationCupOfTea and think of Ancroth with tea cups in the streets of London. Click on TT. Disappointed. Send masks to England, START</td>
<td>PRE</td>
<td>unknown</td>
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<td>OCT1</td>
<td>#Riots: Ironically, in year's time in London there will be 100s running about trying to get their hands on gold, silver or bronze #OperationCupOfTea</td>
<td>PRE</td>
<td>comment situational</td>
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<td>#Riots: A cup of Sweet Chai for me I think. #OperationCupOfTea</td>
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<td>#Riots: Rather participate in #OperationCrumplets than #OperationCupOfTea</td>
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<td>#Riots: Mr Picklesworth showing his support for #OperationCupOfTea <a href="http://t.co/">http://t.co/</a> N0sdhC</td>
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<td>#Riots: A cup of tea and a good book. What's everyone reading? #OperationCupOfTea #ReadingNoRioting</td>
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<td>OCT2</td>
<td>#Riots: @AndyTheBigTwit same here andy its just a shocking what i'm reading and the photos #OperationCupOfTea #ukRiotsoz</td>
<td>DA</td>
<td>reaction shock</td>
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<td>OCT2</td>
<td>#Riots: I am supporting #OperationCupOfTea by lounging on the sofa, tea in hand whilst watching #ItvThisMorning. The cleaning can wait one day...</td>
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<td>OCT2</td>
<td>#Riots: I am supporting #OperationCupOfTea ... wh. Can't stand tea... let's try trending #OperationCanOfCoke</td>
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<td>OCT3</td>
<td>#Riots: We'll country needs tough love now #riotshtr <a href="http://t.co/iy0xyRIV">http://t.co/iy0xyRIV</a></td>
<td>PRE</td>
<td>ES</td>
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11
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<th>Hashtag Code</th>
<th>Text</th>
<th>Information</th>
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<th>Adjective Discussion</th>
<th>Help &amp; Support</th>
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<tr>
<td>#riots</td>
<td>Continua donant-nos lliçons...’</td>
<td>R1</td>
<td>MM, NM</td>
<td>PC</td>
<td>social political causes dungeons media stop search realism protest insurrection</td>
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<td>#riots</td>
<td>That 31 year old teacher was Alexis Bailey. Not the first time she's been in trouble:</td>
<td>R2</td>
<td>CI</td>
<td>NM</td>
<td>PRE</td>
<td>signification looters</td>
<td>RAO</td>
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<tr>
<td>#riots</td>
<td>This article about the riots is interesting, informative and considered.</td>
<td>R1</td>
<td>CI</td>
<td>NM</td>
<td>PC</td>
<td>shopping riots Baublerfair? consumption political still more complex than criminality looting</td>
<td>SOC, NLC</td>
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<tr>
<td>#riots</td>
<td>@That 31 year old teacher was Alexis Bailey. Not the first time she's been in trouble:</td>
<td>R2</td>
<td>NM</td>
<td>PRE</td>
<td>comment media commentary</td>
<td>RAO, LC, RED, MC</td>
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<td>#riots</td>
<td>Interesting piece in tonight's Evening Standard on the role of Twitter in the riots <a href="http://t.co/j4FjFr1">http://t.co/j4FjFr1</a></td>
<td>R1</td>
<td>NM</td>
<td>PC</td>
<td>MC</td>
<td>social media commentary</td>
<td>SM</td>
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<td>#riots</td>
<td>u&quot;According to smug @AlexSalmond, that run! #riots'</td>
<td>R1</td>
<td>NM</td>
<td>PC</td>
<td>MC</td>
<td>social media commentary</td>
<td>MC</td>
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<td>#riots</td>
<td>u'Sangat TV last night proved not all</td>
<td>R1</td>
<td>NM</td>
<td>PC</td>
<td>MC</td>
<td>social media commentary</td>
<td>BOC, NLC</td>
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<td>#riots</td>
<td>u&quot;Does CBCs “setting sights on justice” (in any translation) equal Cameron’s “doing whatever is necessary to restore law and order” ? #riots</td>
<td>R1</td>
<td>GM</td>
<td>PR</td>
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<td>#riots</td>
<td>u&quot;Rioters threatening this weekend's features as police over-stretched - understandable but unprecedented -</td>
<td>R1</td>
<td>GM</td>
<td>PC</td>
<td>PRE</td>
<td>comment organisational response</td>
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<td>#riots</td>
<td>u&quot;Rioters threatening this weekend's features as police over-stretched - understandable but unprecedented -</td>
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<td>PC</td>
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<td>u&quot;Looting unacceptable too early to say causes youth costs</td>
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<td>#riots</td>
<td>u'Rioters I won't be happy if these ignorant scum get the footy cancelled on the weekend #andthenitwillfall #surprisingsurprised</td>
<td>R1</td>
<td>PRE</td>
<td>making light</td>
<td>O</td>
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<tr>
<td>#riots</td>
<td>u&quot;Should be on #shahnaazera at 2 irh to discuss #riots - imagine they won't have much truck with ridiculous Arab spring analogies being pushed</td>
<td>R1</td>
<td>PO</td>
<td>national comparison not valid arab spring</td>
<td>SOC</td>
<td>3</td>
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<tr>
<td>#riots</td>
<td>u&quot;Does CBC's ‘setting sights on justice’ (in any translation) equal Cameron’s “doing whatever is necessary to restore law and order” ? #riots</td>
<td>R1</td>
<td>PRE</td>
<td>political comment significant Cameron</td>
<td>POL</td>
<td>2</td>
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<tr>
<td>#riots</td>
<td>u&quot;I’ll I owned a construction company I would buy some land and make plans for a super prison for these rioters/ crooks</td>
<td>R1</td>
<td>PRE</td>
<td>comment looter punishment</td>
<td>RAO</td>
<td>2</td>
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<tr>
<td>#riots</td>
<td>u&quot;Can imagine police running round with super soaker 5000’s due to budget cuts! #walmartcannons #riots #riots</td>
<td>R1</td>
<td>PRE</td>
<td>making light</td>
<td>O</td>
<td>1</td>
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<tr>
<td>#riots</td>
<td>u&quot;No riots in cricklewood but I think there was an unsuccessful attempt on Brent cross last night, idiots, Brent Cross is zombie-proof. #riots</td>
<td>R1</td>
<td>PRE</td>
<td>comment community</td>
<td>RAO</td>
<td>2</td>
<td></td>
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<tr>
<td>#riots</td>
<td>u&quot;I can completely understand good citizens protecting their streets just wish the government would get strong armed against the #riots</td>
<td>R1</td>
<td>PRE</td>
<td>comment state policy</td>
<td>RES</td>
<td>2</td>
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<tr>
<td>#riots</td>
<td>u&quot;White I'd love to see this stuff in #London as flat out social / class war. I Can't help but see a load of spivs looking for a buck #riots</td>
<td>R1</td>
<td>PO</td>
<td>class social causes? doubt</td>
<td>SOC, RAO</td>
<td>3</td>
<td></td>
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<tr>
<td>#riots</td>
<td>u&quot;I'm going to watch TV last night proved not all</td>
<td>R1</td>
<td>PRE</td>
<td>comment</td>
<td>MC</td>
<td>1</td>
<td></td>
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<tr>
<td>#riots</td>
<td>u&quot;I only had some of these feral hood rats addresses and a steady supply of grenades... And a crossbow for those that run! #riots</td>
<td>R1</td>
<td>PRE</td>
<td>comment</td>
<td>RAO</td>
<td>2</td>
<td></td>
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<tr>
<td>#riots</td>
<td>u&quot;According to smug @AlexSalmond, #riots are an ‘ugly’English, not UK ‘ugly’phenomenon. He’s obviously not observed the aftermath of an Edinburgh derby.&quot;</td>
<td>R1</td>
<td>CI</td>
<td>PRE</td>
<td>comparison situational</td>
<td>SOC</td>
<td>4</td>
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<tr>
<td>#riots</td>
<td>u&quot;That 31 year old teacher was Alexis Bailey. Not the first time she's been in trouble:</td>
<td>R2</td>
<td>NM</td>
<td>PRE</td>
<td>signification looters</td>
<td>RAO</td>
<td>4</td>
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<tr>
<td>#riots</td>
<td>u&quot;I can completely understand good citizens protecting their streets just wish the government would get strong armed against the #riots</td>
<td>R1</td>
<td>PRE</td>
<td>comment state policy</td>
<td>RES</td>
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<td>Hashtag Code</td>
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<td>Media sharing</td>
<td>Adjective Discussion</td>
<td>Help &amp; Support</td>
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<tr>
<td>R1</td>
<td>@IPader_SarahCross awful scenes from Manchester #riots - I hope you guys are staying safe!</td>
<td>PRE</td>
<td>ES</td>
<td>reaction awful</td>
<td>SOL</td>
<td>1</td>
<td></td>
<td></td>
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<tr>
<td>R1</td>
<td>@The UK’s economy may not fully recover for another three years if #riots #londonriots</td>
<td>GI</td>
<td>PO</td>
<td>2</td>
<td></td>
<td></td>
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<tr>
<td>R1</td>
<td>@I can’t watch Utl this weekend I’m going to be absolutely fucking pissed off beyond belief #riots</td>
<td>PRE</td>
<td>declarative statement</td>
<td>O</td>
<td>1</td>
<td></td>
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<tr>
<td>R1</td>
<td>I think those #riots will reach France - just a matter of time.'</td>
<td>PRE</td>
<td>comment</td>
<td>O</td>
<td>2</td>
<td></td>
<td></td>
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<tr>
<td>R1</td>
<td>#RT @Michelle_G_B: Great.so its started in BfD now then #riots &amp;BoTh: Don’t lie..</td>
<td>PRE</td>
<td>unknown</td>
<td>O</td>
<td>1</td>
<td></td>
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<tr>
<td>R1</td>
<td>I’ve just been into #Leicester. There’s far less damage than I was expecting. Looks like the police had the #riots under control ’</td>
<td>SI</td>
<td>PN</td>
<td>support police</td>
<td>POLICE, SOL</td>
<td>2</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>R1</td>
<td>I’ve never been disgusted to be british until now these #riots are unbelievable!!</td>
<td>PRE</td>
<td>situational comment</td>
<td>O</td>
<td>1</td>
<td></td>
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<tr>
<td>R2</td>
<td>#RT @Ed_Miliband: Responsibility is the key to stop those #riots happening again rt.co/XEMkM0</td>
<td>BL</td>
<td>PO</td>
<td>responsibility who?</td>
<td>O</td>
<td>2</td>
<td></td>
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<tr>
<td>R2</td>
<td>#Sheffield - business as usual: <a href="http://t.co/0D67C8K">http://t.co/0D67C8K</a> #statusnoteably #sheffield #riots</td>
<td>CII</td>
<td>BL</td>
<td>PRE</td>
<td>declarative statement</td>
<td>O</td>
<td>2</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>R2</td>
<td>#Cuu2011best magnifique #riots #londonriots #londonriots <a href="http://t.co/Hyp0GdMo">http://t.co/Hyp0GdMo</a></td>
<td>BL</td>
<td>PRE</td>
<td>unknown</td>
<td>NN</td>
<td>7</td>
<td></td>
<td></td>
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<tr>
<td>R2</td>
<td>#Yeah this is what I want to see more of if these riots continue. Rough justice <a href="http://t.co/DVvUeh">http://t.co/DVvUeh</a> #riots</td>
<td>SI</td>
<td>CM, MM</td>
<td>recommendation aggressive state</td>
<td>RAO, RES, POLICE</td>
<td>2</td>
<td></td>
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<tr>
<td>R2</td>
<td>#RT @GillesKend30: Yeah this is what I want to see more of if these riots continue. Rough justice <a href="http://t.co/DVvUeh">http://t.co/DVvUeh</a> #riots</td>
<td>SI</td>
<td>MM</td>
<td>recommendation aggressive state</td>
<td>RAO, RES, POLICE</td>
<td>2</td>
<td></td>
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<tr>
<td>R2</td>
<td>#Really sad 2 hear independent music labels left devastated by Tuesday’s riot ftx <a href="http://t.co/paj7F01">http://t.co/paj7F01</a> @patrickhaveron #londonriots #riots uk</td>
<td>NM</td>
<td>PN</td>
<td>OTHER</td>
<td>reaction sadness</td>
<td>O</td>
<td>2</td>
<td></td>
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<tr>
<td>R2</td>
<td>#RT @Sallenturf: Legend! This is how to deal with #riots. <a href="http://t.co/02m8W/Uk">http://t.co/02m8W/Uk</a> #londonriots #riots</td>
<td>OM</td>
<td>PRE</td>
<td>signification re looter response</td>
<td>RAO</td>
<td>2</td>
<td></td>
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<tr>
<td>R2</td>
<td>#politicians that couldn’t be bothered to finish their holiday early suddenly exploiting the destruction as a photo opportunity #riots</td>
<td>PO</td>
<td>2</td>
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<tr>
<td>R2</td>
<td>#Love the man on the news who just blamed the Polish all the jobs for the #riots. That’s a new one</td>
<td>PO</td>
<td>2</td>
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<tr>
<td>R2</td>
<td>#RT @dgyhn: The anti piracy adverts which stated YOU WOULDNT STEAL A TELEVISION ‘just don’t seem relevant anymore. #riots</td>
<td>PRE</td>
<td>comment</td>
<td>O</td>
<td>1</td>
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<td>R2</td>
<td>#Sangat TV clips by far the most real &amp; interesting reporting i’ve seen during #riots. BBC and Sky box slow, repetitive, late by comparison</td>
<td>PO</td>
<td>MC</td>
<td>meta media comparison</td>
<td>2</td>
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<tr>
<td>R2</td>
<td>#Watching the news. Can’t say i am proud to be english tonight. Embarassed yes. If #riots</td>
<td>PRE</td>
<td>situational comment</td>
<td>O</td>
<td>1</td>
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<tr>
<td>R2</td>
<td>#RT @worldtreeman: I thought th father of one of those 3 men killed in th #riots yesterday was brave and had a great message. live in 1he...</td>
<td>PO</td>
<td>EB</td>
<td>restraint response peace</td>
<td>SOL</td>
<td>3</td>
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<tr>
<td>R2</td>
<td>#They’ve had fun, they’ve got their HD Tvs and their new phones. It’s over. Doubt 1000s of extra police had much to do with it/#riots</td>
<td>PRE</td>
<td>comment looter cause</td>
<td>RAO</td>
<td>3</td>
<td></td>
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<tr>
<td>R3</td>
<td>#UK #riots 2011: Acting Commissioner Tim #Golden Defends Police’s 2011s Measure Response to Looting <a href="http://igo.gi/GkB3Gw7d">http://igo.gi/GkB3Gw7d</a></td>
<td>BL</td>
<td>PR</td>
<td>2</td>
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<td>R3</td>
<td>#RT @SRSConsultancy: The causes of #riots in #london: SRS Consultancy’s Christian Cullen - latest interview. Network Ten News <a href="http://t.co/">http://t.co/</a>...</td>
<td>BL</td>
<td>PO</td>
<td>3</td>
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<td>R3</td>
<td>#Britishwater walkers carons blind people! Careful - picture is not for the squeamish. #riots #riots <a href="http://t.co/IZZ4Z">http://t.co/IZZ4Z</a></td>
<td>BL</td>
<td>PRE</td>
<td>declarative statement</td>
<td>RES</td>
<td>3</td>
<td></td>
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<td>R3</td>
<td>#RT @DaniTaylor instead #number19rgn seems intent on ignoring lessons and playing to the Daily Mail agenda <a href="http://rt.co/kjz32H">http://rt.co/kjz32H</a> #riots</td>
<td>CM</td>
<td>PO</td>
<td>politics mail agenda leadership</td>
<td>POL, RAO, LC</td>
<td>4</td>
<td></td>
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<td>R3</td>
<td>#UK #riots succeed! Boris invests 550million in result in more food and heritage festival <a href="http://t.co/yfhVoJ">http://t.co/yfhVoJ</a></td>
<td>GII</td>
<td>GM</td>
<td>PO</td>
<td>social commentary politics investment</td>
<td>RES</td>
<td>3</td>
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<tr>
<td>R3</td>
<td>#U2011clguardian David Cameron considers banning rioters from social media <a href="http://t.co/IvH7">http://t.co/IvH7</a> #riots #londonriots #riotonuk #The man is an idiot #riots</td>
<td>GII</td>
<td>NM</td>
<td>PC</td>
<td>social media commentary politics</td>
<td>POL, RES</td>
<td>4</td>
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<tr>
<td>R3</td>
<td>#RT @EmmaHopkins92: Furnisutt picture! #Unleash_Mr_Cameron #FRiots <a href="http://t.co/u4b3Dsq">http://t.co/u4b3Dsq</a></td>
<td>OM</td>
<td>PRE</td>
<td>spoof cameron looted</td>
<td>O</td>
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<td>Media sharing</td>
<td>Adjective Discussion</td>
<td>Help &amp; Support</td>
<td>Meta</td>
<td>SPAM/Other</td>
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<td>R3</td>
<td>u#riots Stupid sodsacking 1 <a href="http://t.co/3Zuwz2w">http://t.co/3Zuwz2w</a> ( ) materialistic shifts. Look what they did <a href="http://t.co/RFSJQbQAL">http://t.co/RFSJQbQAL</a>.</td>
<td>G3</td>
<td>GM</td>
<td>PRE</td>
<td>signification loosens</td>
<td>RAO</td>
<td>2</td>
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<tr>
<td>R3</td>
<td>u#I\’m thinking after the last week may be an armored vehicle hobby may be useful...this looks nice for the ships! <a href="http://t.co/92E0WpW4qro">http://t.co/92E0WpW4qro</a>.</td>
<td>G3</td>
<td>GM</td>
<td>PRE</td>
<td>comment militarisation</td>
<td>RES</td>
<td>1</td>
<td></td>
<td></td>
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<tr>
<td>R3</td>
<td>u#RT #riots Julies sa m’a capuche <a href="http://t.co/RFmpu7v2">http://t.co/RFmpu7v2</a> via #riotcourier.</td>
<td>G3</td>
<td>GM</td>
<td>PO, PC</td>
<td>politicisation hoody social factors</td>
<td>SOC</td>
<td>3</td>
<td></td>
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<td>R3</td>
<td>u##riots u’Shocked into compliance! @NaomiAkilin ‘s ‘Shock Doctrine’ neo-liberal tactic, use riots to clamp down on civil liberties 95rigxgelmh.</td>
<td>G3</td>
<td>PO</td>
<td>PRE</td>
<td>political neo-liberal tactics’ civil liberties</td>
<td>RES, NLC</td>
<td>4</td>
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<td>R3</td>
<td>u##riots u\‘#doubt if Dave can remember 1971 riots.</td>
<td>G3</td>
<td>PO, PN</td>
<td>PRE</td>
<td>political comment</td>
<td>Cameron</td>
<td>POL</td>
<td>2</td>
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<tr>
<td>R3</td>
<td>u#riots I would have you strung up high your blackberry shoved down your throat! Pet in hell...</td>
<td>G3</td>
<td>PO, PN</td>
<td>reaction anger</td>
<td>RAO</td>
<td>0</td>
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<tr>
<td>R3</td>
<td>u#riots They’re all sliding away from reality into denial of accountability of any government, any UK policy. I’ve had enough - lunch!</td>
<td>G3</td>
<td>PO, PN</td>
<td>government accountability?</td>
<td>SOC, POL, RES</td>
<td>3</td>
<td></td>
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<tr>
<td>R3</td>
<td>u#Oh no. Nick Du Blos is on. This guy doesn’t like GTIs #riots #riots.</td>
<td>G3</td>
<td>PO, PRE</td>
<td>unknown</td>
<td>O</td>
<td>1</td>
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<tr>
<td>R3</td>
<td>u##number10gov #riots P LE A S E #Cameroon...yes, it’s a failure of our society...but, THE ROT IS ALREADY THERE - THEY NEED LOCKING UP?</td>
<td>G3-1</td>
<td>PO</td>
<td>PRE</td>
<td>signification loosens</td>
<td>punishment</td>
<td>RAO</td>
<td>2</td>
<td></td>
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<tr>
<td>R3</td>
<td>u#922 arrests in the riots that’s another 922 to be sent to Afghanistan to support the troops then? (Oh most of them are 12? Send em anyway!?)</td>
<td>G3</td>
<td>PO, PRE</td>
<td>rioter politician</td>
<td>comparison</td>
<td>3</td>
<td></td>
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<tr>
<td>R3</td>
<td>u#RT #drugum #RODB11 #pmq #riots what great role-models these MPs are, how can they condemn the looters when what they did with expenses was...</td>
<td>G3</td>
<td>PO, PRE</td>
<td>politician</td>
<td></td>
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<tr>
<td>R3</td>
<td>u##riots u’Last laugh on the looters. This is really make him change his mind won’t it?</td>
<td>G3</td>
<td>PRE</td>
<td>punishment</td>
<td>RAO</td>
<td>2</td>
<td></td>
<td></td>
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<tr>
<td>R3</td>
<td>u##riots Lord Ashdown u’Britain needs intentional help to cut out cancer #riots. Government paralyzed to deal with true issues <a href="http://t.co/2Z7RO">http://t.co/2Z7RO</a> #Davidisimkey.</td>
<td>G3</td>
<td>MM</td>
<td>PO, PC</td>
<td>complexity of causes</td>
<td>SOC</td>
<td>3</td>
<td></td>
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<td>R3</td>
<td>u##riots u#Last laugh on the looters. This is genius <a href="http://t.co/C7c05o">http://t.co/C7c05o</a> #riots shooting</td>
<td>G3</td>
<td>GM</td>
<td>PRE</td>
<td>signification loosens</td>
<td>riot response</td>
<td>RAO</td>
<td>2</td>
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<td>R3</td>
<td>u##riots u\‘#they can\’t read RT #inspector4 It says something about London\u2019s riots #waterstone\u2019s bookstores weren\u2019t looted #riots</td>
<td>G3</td>
<td>PRE</td>
<td>signification loosens</td>
<td>RAO</td>
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<td>RCUP2</td>
<td>&quot;I'll be holding my own CDHRA meeting tonight. WinOrI might have Kingfisher, not decided yet. #LondonRiots #UKriots #riotcleanup&quot;</td>
<td>GI</td>
<td>PRE</td>
<td>making light</td>
<td>O</td>
<td>1</td>
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<tr>
<td>RCUP3</td>
<td>&quot;I'm not holding a meeting tonight. WinOrI might have Kingfisher, not decided yet. #LondonRiots #UKriots #riotcleanup&quot;</td>
<td>BL</td>
<td>PRE</td>
<td>declarative statement</td>
<td>2</td>
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<td>RCUP3</td>
<td>&quot;I'm not holding a meeting tonight. WinOrI might have Kingfisher, not decided yet. #LondonRiots #UKriots #riotcleanup&quot;</td>
<td>CM</td>
<td>PC</td>
<td>CTA</td>
<td>3</td>
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<tr>
<td>RCUP3</td>
<td>&quot;I'm not holding a meeting tonight. WinOrI might have Kingfisher, not decided yet. #LondonRiots #UKriots #riotcleanup&quot;</td>
<td>GI</td>
<td>PRE</td>
<td>reaction anger politics</td>
<td>3</td>
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<td>RCUP3</td>
<td>&quot;I'm not holding a meeting tonight. WinOrI might have Kingfisher, not decided yet. #LondonRiots #UKriots #riotcleanup&quot;</td>
<td>GI</td>
<td>PRE</td>
<td>making light</td>
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<td>RCUP3</td>
<td>&quot;I'm not holding a meeting tonight. WinOrI might have Kingfisher, not decided yet. #LondonRiots #UKriots #riotcleanup&quot;</td>
<td>BL</td>
<td>PO</td>
<td>political actions regardless</td>
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<td>RCUP3</td>
<td>&quot;I'm not holding a meeting tonight. WinOrI might have Kingfisher, not decided yet. #LondonRiots #UKriots #riotcleanup&quot;</td>
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<td>RCUP3</td>
<td>&quot;I'm not holding a meeting tonight. WinOrI might have Kingfisher, not decided yet. #LondonRiots #UKriots #riotcleanup&quot;</td>
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<td>&quot;I'm not holding a meeting tonight. WinOrI might have Kingfisher, not decided yet. #LondonRiots #UKriots #riotcleanup&quot;</td>
<td>GI</td>
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<td>narrative making light</td>
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<td>RCUP3</td>
<td>&quot;I'm not holding a meeting tonight. WinOrI might have Kingfisher, not decided yet. #LondonRiots #UKriots #riotcleanup&quot;</td>
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<td>anger youth boris johnson</td>
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<td>UKR1</td>
<td>&quot;I'm not holding a meeting tonight. WinOrI might have Kingfisher, not decided yet. #LondonRiots #UKriots #riotcleanup&quot;</td>
<td>GI</td>
<td>PRE</td>
<td>ideological</td>
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<td>UKR1</td>
<td>&quot;I'm not holding a meeting tonight. WinOrI might have Kingfisher, not decided yet. #LondonRiots #UKriots #riotcleanup&quot;</td>
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<td>PRE</td>
<td>ideological</td>
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<td>&quot;I'm not holding a meeting tonight. WinOrI might have Kingfisher, not decided yet. #LondonRiots #UKriots #riotcleanup&quot;</td>
<td>BL</td>
<td>PO</td>
<td>ideological</td>
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<td>&quot;I'm not holding a meeting tonight. WinOrI might have Kingfisher, not decided yet. #LondonRiots #UKriots #riotcleanup&quot;</td>
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<td>UKR1</td>
<td>&quot;#hashtag. You honestly couldn't make this shit up. One of the few surviving shops around Lancaster Gate, asphalt国旗 rioters <a href="http://t.co/qJgQ2Au">http://t.co/qJgQ2Au</a>**&quot;</td>
<td>MM</td>
<td>PRE</td>
<td>reaction irony?</td>
<td>O</td>
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<td>UKR1</td>
<td>&quot;#RT @CarlosLauff: #Carton - Who's to blame for the #LondonRiots? - riotstopswap #UKriots <a href="http://t.co/2WAt28">http://t.co/2WAt28</a>**&quot;</td>
<td>MM</td>
<td>PD</td>
<td>police hit match petrol cartoon</td>
<td>POLICE</td>
<td>3</td>
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<td>UKR1</td>
<td>&quot;#RT @IrelandLightning: Poor Alexis Bailey - Should've looked Spotecieves <a href="http://t.co/QzgB2bdB">http://t.co/QzgB2bdB</a> #ukriots #kondrikovici&quot;</td>
<td>MM</td>
<td>PRE</td>
<td>signification looters</td>
<td>RAO</td>
<td>2</td>
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<td>UKR1</td>
<td>&quot;#DavidAllenGreen in @TheNewStatesman: <a href="http://t.co/1HgHgCv">http://t.co/1HgHgCv</a> #ukriots&quot;</td>
<td>NM</td>
<td>PC</td>
<td>riots causes police social media meta</td>
<td>POLICE, RES</td>
<td>3</td>
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<td>UKR1</td>
<td>&quot;#RT 01_heedland: A.M. reminder: My Guardian column on the #ukriots and the wider crisis of confidence <a href="http://t.co/10oTeRETQ">http://t.co/10oTeRETQ</a>&quot;</td>
<td>GI</td>
<td>NM</td>
<td>PO, PC</td>
<td>politics economics meta commentary</td>
<td>SOC, NLC</td>
<td>3</td>
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<td>UKR1</td>
<td>&quot;#Jul2011@SkyNews: Three Men Killed Protecting Community <a href="http://t.co/v9Y1HQh2uG1dI">http://t.co/v9Y1HQh2uG1dI</a> hope they catch the bastards that did this #ukriots&quot;</td>
<td>GI</td>
<td>NM</td>
<td>PRE</td>
<td>reaction anger</td>
<td>O</td>
<td>2</td>
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<td>UKR1</td>
<td>u&quot;@TheSunNewspaper <a href="http://t.co/0WUE7f9">http://t.co/0WUE7f9</a> - Send them to a proper war and see how 'badman' they are then! #ukriots&quot;</td>
<td>GI</td>
<td>NM</td>
<td>PRE</td>
<td>signification looters punishment</td>
<td>RAO</td>
<td>4</td>
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<td>UKR1</td>
<td>&quot;#RT Strykerseven: excellent piece on reasons behind #ukriots (1) - New Statesman <a href="http://t.co/mEvJdV2uQ1d1">http://t.co/mEvJdV2uQ1d1</a>&quot;</td>
<td>NM</td>
<td>PC</td>
<td></td>
<td>POL, SOC, NLC</td>
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<td>UKR1</td>
<td>&quot;#SWBnewsaven on how Labour's response to the #ukriots has been even worse than the Tories. <a href="http://t.co/9WknAvQT4">http://t.co/9WknAvQT4</a>&quot;</td>
<td>NM</td>
<td>PC</td>
<td>telegraph political analysis labour messes up give harmen to the looters</td>
<td>SOC, RAO, RED</td>
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<td>UKR1</td>
<td>&quot;#RT @MalinAlvis: My thoughts on the #kondrikovici rioters from thecommentisfalse @guardian: Don't deal with them like Athens did in 2008 -&quot;</td>
<td>NM</td>
<td>PO, PC</td>
<td>national comparison</td>
<td>SOC</td>
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<td>UKR1</td>
<td>&quot;#RT @PaulLewis: My Longer Read: Who are the rioters? Young men from poor areas... but that's not the full story <a href="http://t.co/SufVfUlQ">http://t.co/SufVfUlQ</a> #UKRiots&quot;</td>
<td>GI</td>
<td>NM</td>
<td>PC</td>
<td>rister classification? poor areas diversity nuanced descriptive</td>
<td>SOC</td>
<td>3</td>
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<td>UKR1</td>
<td>&quot;#RT @TheUKriots: the psychology of looting - <a href="http://t.co/2WygUT4">http://t.co/2WygUT4</a> #ukriots&quot;</td>
<td>NM</td>
<td>PC</td>
<td>shopping riots Baudrillard? consumption political still more complex than criminally locating</td>
<td>SOC, NLC</td>
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<td>UKR1</td>
<td>u&quot;@Viswadezo: Al Jazeera fala com o autor Alex WHistle sobre os motins no Reino Unido <a href="http://t.co/rn9Poos9I">http://t.co/rn9Poos9I</a> #LondonRiots #UKriots&quot;</td>
<td>NM, MM</td>
<td>PO</td>
<td>complex social causes also looting</td>
<td>SOC</td>
<td>?</td>
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<td>UKR1</td>
<td>&quot;#City's Senior Lecturer in Sociology, Dr Chris Greer, quoted by FRANCE 24 <a href="http://t.co/g0g4f6eo">http://t.co/g0g4f6eo</a> and the FT <a href="http://t.co/kv3y9Q3">http://t.co/kv3y9Q3</a> on #ukriots&quot;</td>
<td>MM, PR</td>
<td>PC</td>
<td>social causes complexity police marginalisation</td>
<td>SOC</td>
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<td>UKR1</td>
<td>&quot;#riots Avkirots Phycosynthesis at chemically, bankers plunder and live like kings. Free for all. Hell hath come. Poem at <a href="http://t.co/UGSRGQn">http://t.co/UGSRGQn</a>&quot;</td>
<td>GM</td>
<td>PO, PC</td>
<td>looter politician competition</td>
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<td>UKR1</td>
<td>&quot;#RT @TheReminovit: Wow. Marine Benoite Clarke: <a href="http://t.co/1CPy2Uy">http://t.co/1CPy2Uy</a> #ukriots (PLEASE don't laugh at her comments. It's a poem, not her nor my op...&quot;</td>
<td>GM</td>
<td>PO, PC</td>
<td>race causes media complexity</td>
<td>SOC</td>
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<td>UKR1</td>
<td>&quot;#RT @PascalPia: Croydon rioter confessing on Facebook. BUSTED! PLEASE RT1 <a href="http://t.co/Q6dppA">http://t.co/Q6dppA</a> #kondrikovici rioters Avkirots @metpolice @TeanBosco ...&quot;</td>
<td>GM, MM</td>
<td>PRE</td>
<td>CTA</td>
<td>signification looters punishment</td>
<td>RAO</td>
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<td>UKR1</td>
<td>u&quot;#RT @BigBigBlue: It's a shame they can't test a school and steal same education. Avkirots&quot;</td>
<td>PRE</td>
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<td>signification looters uneducated</td>
<td>RAO</td>
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<td>UKR1</td>
<td>u&quot;#To all the people calling for the Avkirots rioters rioters to be put down and stuff... shows what's wrong with the middle class in this c...&quot;</td>
<td>PO</td>
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<td>class commentary reaction severity</td>
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<td>UKR1</td>
<td>u&quot;@JoeNBC @Morning_Joe @Morningninja: what rioters are doing in Avkirots US politicians are doing in essence to it's citizenry&quot;</td>
<td>PRE</td>
<td></td>
<td>comparison situational</td>
<td>POL, O</td>
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<td>UKR1</td>
<td>&quot;#RT @Jazzeera: There's not much difference between those otders and #Hashtag/In/Us/brigade&quot;</td>
<td>PRE</td>
<td></td>
<td>comment society safety</td>
<td>RES</td>
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<td>UKR1</td>
<td>&quot;#RT @Penneers: &quot;I don't feel safer knowing that we're 24 hours away from having water cannons #rioting #kondrikovici #Avkirots&quot;</td>
<td>PRE</td>
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<td>unknown</td>
<td>POLICE</td>
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<td>UKR1</td>
<td>&quot;#hmcoulag thanks I heard that the police now everything can use they need to restore the law and order #ukriots&quot;</td>
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<td>UKR1</td>
<td>u&quot;#ukriots Banks do it, m's do it, even stupid hoody chavs do it! 'Lets do it, lets loot for free' (not) #kondrikovici&quot;</td>
<td>PO</td>
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<td>looter stealing banks politicians</td>
<td>POL, RAO</td>
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UKR1 #UKriots @SkyNewsRoyal: #UKriots #LondonRiots after Cameron's tough talk, I'll be back on London's streets tonight to see if last night's rela..."

UKR1 #UKriots @Simon_Gardner: Is it just me that thinks "robust treatment" sounds a bit S&M? #UKriots #LondonRiots

UKR1 #UKriots Riiiiisons: no one owes you a living. If you want that to then earn it. The police have your pictures and I'm sending them my pick too!

UKR1 #UKriots Riots: the looting during the #UKriots is as bad as the fraudulent expense claims by politicians but why haven't all those thieves been prosecuted?

UKR1 #UKriots: UK says sorry, I don't really, I just felt rather annoyed by these doits complaining to the BBC over the #rioters tag

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UKR1 #UKriots: #rioters off the streets?

UKR1 #UKriots: #UKriots don't even need the belts they take credit for the community clean up

UKR1 #UKriots DC and his govt are quick to respond to this weeks national events? I predict a series of dead "retrospectives" in 5-3 yrs #rioters

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<tr>
<td>UKR1</td>
<td>&quot;#ukriots: Definitely the worst bit of footage I've seen, fucking idiots! #ukriots #ukriot&quot;</td>
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<td>&quot;#UKRiots: Oh For fucsk sake! Looting near the Embankment (see pic) <a href="http://t.co/i9nRPho3">http://t.co/i9nRPho3</a> #ukriots #ukriot&quot;</td>
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<td>&quot;RT @Angel_Hibo: This comment is instigating an untruth CFP(Combined EX forces) is NOT EDT, that's a FACT Birmingham Riots http:&quot;</td>
<td>BL</td>
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<td>&quot;Serious Tweet Alert! The #UKRiots now beg the question, are we past civil disobedience? Does voice require violence? <a href="http://t.co/WRF5RQ2Q">http://t.co/WRF5RQ2Q</a>&quot;</td>
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<td>PC</td>
<td>reaction, restraint, politics, social</td>
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<td>&quot;@high RT @Sandmonkey RT th'heyeesa: Cameron says UK might limit #socialmedia use because it has spread the disorder <a href="http://t.co/faz3JbN">http://t.co/faz3JbN</a> #UKriots&quot;</td>
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<td>&quot;These weren't #ukriots - Wales and Scotland were uncathed. If you want to blame its the REAL moral laps is DEMOCRACY, the evil religion of Tapey&quot;</td>
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<td>&quot;Labour's Riots Blame Game Turns Toxic: <a href="http://t.co/3g0bHMF">http://t.co/3g0bHMF</a> #UKriots #ukriots&quot;</td>
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<td>&quot;An open letter to David Cameron's parents: <a href="http://t.co/3g0bHMF">http://t.co/3g0bHMF</a> #UKriots #ukriots&quot;</td>
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<td>&quot;Really good stuff &amp; RT th'adivahkgerson: Riots in the UK: Front pages from the regions: <a href="http://t.co/3g0bHMF">http://t.co/3g0bHMF</a> #UKriots&quot;</td>
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<tr>
<td>UKR3</td>
<td>&quot;RT @PaulLewis: Muslim and Sikh men succeeding where the government failed: protecting their streets in peace: <a href="http://t.co/0G9a2zH">http://t.co/0G9a2zH</a> #ukriots&quot;</td>
<td>GI</td>
<td>NM</td>
<td>PO, analysis, reaction, Asian, Muslim, restraint</td>
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<td>Hashtag Code</td>
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<td>Information</td>
<td>Media sharing</td>
<td>Adjective Discussion</td>
<td>Help &amp; Support</td>
<td>Meta</td>
<td>SPAM/Other</td>
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<td>#UKriots</td>
<td>🎉@<a href="http://to/NdW3rM0">http://to/NdW3rM0</a> police fary at santenous, #riots what kind of example is this. throw key away imo!</td>
<td>GI</td>
<td>NM</td>
<td>PRE</td>
<td>reaction significance (police prison)</td>
<td>RAO</td>
<td>4</td>
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<tr>
<td>#UKriots</td>
<td>🎉@Guardian: Full text of Cameron’s speech on #riots. #Londonriots now up on No 10 website <a href="http://bit.ly/nhmzdk">http://bit.ly/nhmzdk</a>*</td>
<td>GI</td>
<td>NM</td>
<td>PC</td>
<td>cameron criminality violence vandalising law order no justifiable causal link</td>
<td>RAO, REd</td>
<td>2</td>
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<tr>
<td>#UKriots</td>
<td>🎉@Tariq Jahan has been the outstanding hero of the #riots. Amazing wisdom and maturity in the very worst of situations <a href="http://to/Tq8MJZ">http://to/Tq8MJZ</a>_*</td>
<td>GI</td>
<td>NM</td>
<td>PO</td>
<td>restraint response peace huminity birmingham</td>
<td>SOL</td>
<td>3</td>
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<tr>
<td>#UKriots</td>
<td>🎉Anyone who says #UKriots couldn’t or wouldn’t happen in Australia - cop this: they already did, over Easterriots <a href="http://to/6Lu2H1">http://to/6Lu2H1</a>*</td>
<td>GI</td>
<td>NM</td>
<td>PC</td>
<td>national comparison</td>
<td>SOc</td>
<td>3</td>
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<tr>
<td>#UKriots</td>
<td>🎉Someone can read the future. Last week in the guardian. #riots <a href="http://t.co/95FPH">http://t.co/95FPH</a>*</td>
<td>GI</td>
<td>NM</td>
<td>PO</td>
<td>youth cuts social story pre riots there will be riots</td>
<td>SOc</td>
<td>3</td>
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<tr>
<td>#UKriots</td>
<td>🎉v/u2011@guardian: David Cameron considers banning rioters from social media <a href="http://to/7y/lu7/77">http://to/7y/lu7/77</a> #riots. #Londonriots #riots2011. The man is an idiot*</td>
<td>GI</td>
<td>NM</td>
<td>PRE, PO</td>
<td>MC</td>
<td>social media meta commentary</td>
<td>MC, RES</td>
<td>3</td>
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<tr>
<td>#UKriots</td>
<td>🎉The best of british-Muslim &amp; Sikh men succeeding where the govt failed: protecting their streets in peace <a href="http://to/9K/Wh6E">http://to/9K/Wh6E</a> #riots</td>
<td>GI</td>
<td>NM</td>
<td>PO</td>
<td>response restraint vigil mourning</td>
<td>RES</td>
<td>3</td>
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<tr>
<td>#UKriots</td>
<td>🎉#must watch RT @PaulLewis: In the five days I’ve been covering #riots, nothing so moving as seeing this: <a href="http://ig.com/3e5/7w7">http://ig.com/3e5/7w7</a>*</td>
<td>GI</td>
<td>NM</td>
<td>PO</td>
<td>response restraint vigil mourning</td>
<td>SOL</td>
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<td>#UKriots</td>
<td>🎉#RT @dGor_Tad: What did Nick Clegg expect?? He has an arsen conviction &amp; gets to be deputy PM. Why can’t rioters? <a href="http://to/bbc.in/CaU3M">http://to/bbc.in/CaU3M</a> #riots*</td>
<td>GI</td>
<td>NM</td>
<td>PO</td>
<td>politicians rioter comparison</td>
<td>POL</td>
<td>4</td>
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<td>#UKriots</td>
<td>🎉#ALL weekend Premier League games are OFF, statement here <a href="http://to/96/2jkx/9EPF">http://to/96/2jkx/9EPF</a> #UKriots*</td>
<td>GI</td>
<td>OM</td>
<td>PR</td>
<td>re brand uk?</td>
<td>RES</td>
<td>2</td>
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<td>#UKriots</td>
<td>🎉#Desperate times requires desperate measures. It’s high time the system in the UK is changed or better still Re-Branded. #UKriots</td>
<td>GI</td>
<td>PO</td>
<td></td>
<td>britain culture? not destroy but build</td>
<td>RES</td>
<td>2</td>
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<tr>
<td>#UKriots</td>
<td>🎉#Peter Tapsell: Shouldn’t we be learning from Richard Nixon? #UKriots*</td>
<td>GI</td>
<td>PO</td>
<td></td>
<td>national comparison nixon lessons</td>
<td>RES</td>
<td>2</td>
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<td>#UKriots</td>
<td>🎉#RT @Xmhorri: PM: “When you have deep moral failures you don’t hit them with a wall of money” #UKriots</td>
<td>GI</td>
<td>PRE</td>
<td></td>
<td>signification deep moral failure</td>
<td>RES</td>
<td>2</td>
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<td>#UKriots</td>
<td>🎉@Anti_s_media: Backbench Tony: Don’t disperse them, round them up using army and put them in Wembly Stadium. #UKriots “Is this real life?”</td>
<td>GI</td>
<td>PO</td>
<td></td>
<td>political comment</td>
<td>RES, POL</td>
<td>3</td>
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<td>#UKriots</td>
<td>🎉@PaulLewis: wonder if that was the same excuse used by Mubarak when they locked up loads of bloggers and tweeters #UKriots</td>
<td>GI</td>
<td>PO</td>
<td></td>
<td>social meta politics repression Mubarak</td>
<td>MC, RES</td>
<td>3</td>
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<td>#UKriots</td>
<td>🎉#What cameron declare war against social media? Don’t blame technology for your weakness!! #Londonriots #riots</td>
<td>GI</td>
<td>PRE</td>
<td></td>
<td>comment technology cameron</td>
<td>MC, POL</td>
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<td>#UKriots</td>
<td>🎉#Nadine Dorries just said that if a riot broke out in Australia they’d have water cannon and tear gas. rain’ll she’s wrong. #UKriots</td>
<td>GI</td>
<td>PO</td>
<td></td>
<td>national comparison state response</td>
<td>RES</td>
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<td>#UKriots</td>
<td>🎉#UKriots disputed that the KGB cupboard says the word was attacked! What’s the need for that? # selfish bullies</td>
<td>GI</td>
<td>PRE</td>
<td></td>
<td>reaction disgust</td>
<td>RAO</td>
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<td>#UKriots</td>
<td>🎉#Hahahaha RT @damienbyfield: We always blame the uk’s weather but it came in good use last night.oz it kept the rats indoors #UKriots</td>
<td>GI</td>
<td>PRE</td>
<td></td>
<td>signification looters (rats)</td>
<td>0</td>
<td>1</td>
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<td>#UKriots</td>
<td>🎉@Ilmetoploskew: While u figuring out why u lied about #Duggar, we also want 2 know how Seán Hoare died. Remember him? #UKriots #tob #obscures</td>
<td>GI</td>
<td>DA</td>
<td>IA</td>
<td>comment question to state power</td>
<td>POLICE</td>
<td>2</td>
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<tr>
<td>#UKriots</td>
<td>🎉#Early shout for Christmas Number 1: #Cameron. Osborne and Boris with their cover of “We didn’t start the fire.” #UKriots</td>
<td>GI</td>
<td>PRE</td>
<td></td>
<td>making light</td>
<td>0</td>
<td>1</td>
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<td>#UKriots</td>
<td>🎉#Part of the problem is absent fathers #Cameron is taken rubbish. I know plenty of children without dads but they don’t loot!!! #UKriots</td>
<td>GI</td>
<td>PO</td>
<td></td>
<td>families absent fathers not cause #cameron talking rubbish</td>
<td>SOc</td>
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<td>#UKriots</td>
<td>🎉#Let me get this straight: We now support those who use social media to incite violence and looting?? I didn’t get the memo. #UKriots</td>
<td>GI</td>
<td>PRE</td>
<td></td>
<td>comment media commentary</td>
<td>MC</td>
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<td>#UKriots</td>
<td>🎉#Jeff Jarvis: I hear an MP in essence asking for social media to be regulated. Danger, friends, danger. #UKriots</td>
<td>GI</td>
<td>PO</td>
<td></td>
<td>social media opinion</td>
<td>MC</td>
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<td>Spam/Other</td>
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<td>UKR3</td>
<td>u’lu2010/8/18Live: Cameron: What matters is to get the most out of the budget that is already there. #UKriots u2010/8/18That’s k... #equedebrief# Riots?</td>
<td>GI</td>
<td>PO</td>
<td>comment surprise</td>
<td>O</td>
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<td>UKR3</td>
<td>u’Cameron says that police were taken by surprise by these #ukriots. I think that we were all taken a little by surprise.’</td>
<td>GI</td>
<td>PRE</td>
<td>comment surprise</td>
<td>O</td>
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<td>UKR3</td>
<td>u’RT @jeffjarvis: I hear an MP in essence asking for social media to be regulated. Danger, friends, danger. #UKriots</td>
<td>PO</td>
<td>MC</td>
<td>social media</td>
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<td>UKR3</td>
<td>u’UKriots Honduras riots constant talk about “stealing and looting” from UK MPs is in parliament, basked up by the bankers who never stole...</td>
<td>PO</td>
<td>MC</td>
<td>social media</td>
<td>MC</td>
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<td>UKR3</td>
<td>u’Will any MP mention the IPCC &amp; most people’s belief it is not independent from Matt? #UKriots #ukriots #Cameron”</td>
<td>PC</td>
<td>PRE</td>
<td>police complaints</td>
<td>O</td>
<td>1</td>
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<td>UKR3</td>
<td>u’RT @lia_y_alias: Please don’t hashtag the #ukriots as the Ayrriots. The Scots are smart enough as it is. &lt;=&quot;=&quot; &quot;SMUG&quot;&quot; =) Ya laws!&quot;</td>
<td>PRE</td>
<td>comparision</td>
<td>situational</td>
<td>O</td>
<td>1</td>
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<td>UKR3</td>
<td>u’I’ve got an idea. I shall call it prohibition. Sure fire winner. #UKriots#UKriots</td>
<td>PRE</td>
<td>comment society</td>
<td>RES</td>
<td>3</td>
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<td>UKR3</td>
<td>u’Blood still pumping from #ukriots raid on ‘Aunty Val’s Home Kitchen’ in Kyogle. The recycled bathroom tile is a cracker.”</td>
<td>PRE</td>
<td>making tight</td>
<td>O</td>
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<td>UKR3</td>
<td>u’RT @jonworth: Oh Cameron, Blackberry Messenger might be closed, but it’s not hard to make or use similar systems. Hopeless. #UKriots”</td>
<td>PO</td>
<td>MC</td>
<td>social media</td>
<td>MC</td>
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<tr>
<td>UKR3</td>
<td>u’RT @Komatsky: #UKriots PM: “Police must close down Twitter, Blackberry Messenger, Bell’s Telephonic Engine, Smoke Signalling to allow...</td>
<td>PRE</td>
<td>MC</td>
<td>comment media</td>
<td>MC</td>
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<td>u’RT @Komatsky: #UKriots PM: “Police must close down Twitter, Blackberry Messenger, Bell’s Telephonic Engine, Smoke Signalling to allow...</td>
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<td>comment media</td>
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<td>2</td>
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<td>UKR3</td>
<td>u’lu2010/8/18De_Italy: What’s all this obsession with Luton shops? I’ve been there. They’re rubbish....#UKriots lu2010/8/18work there they are rubbish!”</td>
<td>PRE</td>
<td>situational comment</td>
<td>O</td>
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<td>UKR3</td>
<td>u’#rantababbubbaby Sadly, ongoing social problems are rarely considered in “law and order” policy. It’s all about the short term fixes. #UKriots”</td>
<td>PO</td>
<td>justice response</td>
<td>law order short term</td>
<td>SOC, RES</td>
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<tr>
<td>UKR3</td>
<td>u’I wish don’t the rioters steal and plunder legally and become a MP ? #ukriots”</td>
<td>PRE, PO</td>
<td>MP</td>
<td>policy</td>
<td>RES</td>
<td>3</td>
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<tr>
<td>UKR3</td>
<td>u’I see tapa and beers are trending, at least nation hasn’t lost its sense of humor #ukriots #riots”</td>
<td>PRE</td>
<td>MC</td>
<td>comment media</td>
<td>MC</td>
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<tr>
<td>UKR3</td>
<td>u’RT @jabbatoo: I see tapa and beers are trending, at least nation hasn’t lost its sense of humour #ukriots #riots”</td>
<td>PRE</td>
<td>MC</td>
<td>comment media</td>
<td>MC</td>
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<td>UKR3</td>
<td>u’RT @damian _866: I think the MPs’ facade, unthinking, and ill-informed response to the #ukriots is more depressing than the riots themselves...”</td>
<td>PO</td>
<td>politics meta</td>
<td>commentary</td>
<td>RES</td>
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<tr>
<td>UKR3</td>
<td>u’How many of us are old enough to remember the “Middle Class” in the 70’s seeking petrol? Just as bad as the #ukriots same people”</td>
<td>PO</td>
<td>comparison middle</td>
<td>class petrol 1970s</td>
<td>SOC</td>
<td>3</td>
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<td>UKR3</td>
<td>u’Violence won’t end anyone’s disenfranchisement, it only gives the powers that be an excuse to ignore &amp; not resolve legit grievances #ukriots”</td>
<td>PO</td>
<td>violence undermines</td>
<td>legitimate</td>
<td>SOC</td>
<td>3</td>
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<td>UKR3</td>
<td>u’RT @deejayvrn: I hear an MP in essence asking for social media to be regulated. Danger, friends, danger. #ukriots #riots”</td>
<td>PO</td>
<td>MC</td>
<td>social media</td>
<td>regulation</td>
<td>OPINION</td>
<td>MC</td>
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<td>UKR3</td>
<td>u’Now whatever the reason is, I do not believe that person’s sanity is wholly eradicated when there is no male guardian or supervision. #UKriots”</td>
<td>PO</td>
<td>family single</td>
<td>parents</td>
<td>not cause opinion</td>
<td>SOC</td>
<td>2</td>
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<tr>
<td>UKR3</td>
<td>u’RT @copwatcher: So the state’s message is: blame everyone but the powerful. At last, we’re nearly all in this together. #UKriots”</td>
<td>PO, PC</td>
<td>state response</td>
<td>blame?</td>
<td>SOC, POL</td>
<td>3</td>
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"Let's nominate Tariq Jahan as Olympic Torch bearer - show him we won't forget him. #UKRiots"

"RT @Georgie0Maniatis: The revolving, two-faced racist who started the Facebook initiative Cameron praised: http://t.co/0Jzz0wY9 #UKRiots"

"RT @JonathanHaynes: oh wow, #bookclub #ukriots drinking game?! RT @HazePaton: This is a good starting point: http://t.co/YesLV31"