Gambling & Social Media

Carl Miller
Alex Krasodomski-Jones
Josh Smith

February 2016

DEMOS

CONTENTS

EXECUTIVE SUMMARY

Over the last decade, where and how we live our lives has profoundly changed. The rise of social media has changed what information we encounter, whom we know and talk to, and how we talk about our lives, experiences and problems.

Like so many other parts of our lives, over the last decade gambling has moved online. People use it both to gamble, but also to connect with others who do so; sharing their wins and losses, discussing new opportunities, and also their struggles and problems with gambling. However, little is known about how the rise of social media, and more broadly the digital world, has changed gambling and those that do it: how it is promoted, the norms and beliefs that people have about gambling, the kinds of conversations about gambling that take place, and the kinds of communities of gambling enthusiasts that form online. Especially, it is unclear whether social media is either promoting or confronting problematic and harmful gambling behaviours.

This paper presents the results of research by Demos to understand the relationship between gambling and social media within the UK. A short scoping study, the research aims to understand the scale and nature of conversations related to gambling that now happen across a number of different spaces within the digital world, the extent to which they can be researched, and overall to scope the potential for future research opportunities in this area.

The report combined in-depth qualitative research of social media with new, in-house, large-scale analytic techniques, both carried out between 21st of September to 16 October 2016, to produce:

1. **The Big Picture**

    A birds-eyed view case study of the gambling ecosystem on Twitter, the different communities that constitute it, and the behaviour of accounts both dedicated to promoting gambling and those providing help for problem gamblers.

2. **The Detailed Picture**

    Three qualitative case studies of social media-based gambling communities, in order to understand the significances, contexts and meanings that sit underneath the numbers and statistics.

3. **Review of Measuring Harmful Gambling-related Behaviour**

    An analysis of whether social media reflects and facilitates possible harmful gambling and gambling-related behaviour, and its role in forming, propagating or challenging these habits.

The main findings of this research are:

Gambling seems an important part of online life

A very large number of users are using social media and online forums to discuss or interact with gambling. Volumes of data across the three platforms we examined were extremely high:

• 877 Twitter accounts were identified as dedicated to producing content promoting gambling. They sent over 78,000 Tweets during the period of study; two per minute.

• People following the three most prolific pro-gambling accounts would have received 8,500 Tweets, or one every four minutes.

• Seven million people around the world follow at least one of these accounts. Within the UK, over 900,000 do so, or one in 20 of the UK's fifteen million regular Twitter users.

• A free-to-play gambling app on Facebook had more than 14,000,000 likes, and gambling tips pages on Facebook had tens of thousands.

• A problem gambling website hosted more than 300,000 posts.

Online gambling communities have formed with distinct interests and influences

Social media has allowed new communities to form related to gambling, sometimes around specific apps and software, some around particular affiliates, tipsters and content-producers, and others around problems and issues, including problematic gambling.

These communities are radically varied, and each adds a new social dimension to the behaviours at their heart. Each propagates different kinds of information, encourages different kinds of activities, and establishes different norms and values.

On Twitter, distinct communities were algorithmically determined. In many cases, each looked very different from one another. These include:

• The largest community, of 140,000 members, tended to follow tipsters and affiliates rather than the main bookmakers. They also use Twitter more intensively for gambling-related activity than any other community. On average they follow twice as many gambling accounts and send more Tweets mentioning gambling accounts than any other community.

• The second largest, of 127,000 members, tended to follow the major commercial bookmakers, but were less intensive in their use of Twitter to talk about gambling or follow those that do.

- A smaller number, roughly 4,600, of members who share responsible gambling advice and information.

On Facebook, coherent communities had formed around gambling apps, others around tipsters, affiliates and commentators.

Some online communities seem to entrench gambling as a natural part of sports appreciation

The vast majority of discussions relating to gambling that were analysed related to sports. Across Twitter and Facebook, explicit gambling offers, tips and odds are wrapped up in broader discussions about sport - the transfers, big matches and tactics. About a quarter of Tweets sent from bookmakers, and 15% of messages from Facebook tipsters, were not about gambling, but are jokes and updates from a range of different sports, and commentary on matches and events. This may contribute to the normalisation of gambling as a natural part of being a sports fan, and of appreciating sport.

Some users seemed to use the platforms studied in a way that could facilitate harmful gambling behaviour

The qualitative studies of Facebook pages and gambling forums painted an important image of the effects of serious gambling problems. In some cases, this was handled in a sensitive way by those facilitating the community. In others, however, those messages were ignored or deleted. Similarly, a small number of the 900,000 accounts used Twitter in ways that we felt evidenced 'intensive' gambling activity or interest. Over six weeks:

- 1,787 accounts (0.2%) were 'quite intensive': sending more than five Tweets, and following more than 10 gambling accounts

- 412 accounts (0.04%) were 'more intensive': sending more than 20 Tweets, and following more than 30 gambling accounts.

More research is required to link this online activity to offline gambling habits.

There were important patterns throughout the most intensive accounts. Most tended to follow tipsters and affiliates, rather than the major commercial bookmakers, and many were linked to each other - themselves forming a smaller community of users who use Twitter to more intensively discuss gambling.

Gambling care online focuses on providing a place for people to seek help when they needed it, rather than reaching those who were not actively seeking help

Usually, a Twitter user must follow a specific account, a Facebook user must like a certain page, or a user must register to a certain forum, to receive the information therein. The evidence showed that 'responsible gambling' accounts, dedicated to sharing information and advice about how to avoid or stop problematic gambling, are not followed by the same people who follow pro-gambling accounts. Due to this disconnect, it is unlikely that responsible gambling messages will reach the same people who use Twitter as part of an enthusiasm for or interest in gambling.

However, the gambling care forum was an important venue for those seeking out help and advice about their gambling problems and habits. It is an accessible space with an attentive and support community where people share (largely anonymously) lengthy, detailed and apparently deeply felt accounts of their situation, struggle and experiences.

Social media has allowed new forms of gambling and the promotion of it to emerge

Social media is changing what gambling is, and how it is done. This poses new challenges and risks to regulators, as they have to evolve current definitions and frameworks to reflect both a rapidly changing technological landscape and the habits of those who use it.

Especially important challenges are:

- **New digital currencies and apps:** A genre of online apps allow people to undertake activity similar to gambling. Users do not play for cash prizes, but they are encouraged to pay real money for new, app-specific digital currencies, whether 'coins' or 'credits', on which the platform operates.

- **New voices:** The digital world has allowed new voices, sometimes influential and highly followed, to promote gambling. Most important are the 'tipsters' (also known as affiliates) - organisations and individuals who share specific betting tips to their followers. We identified 572 tipsters and affiliates, and they included some of the most vocal producers of content that promoted gambling.

Both of these are significant parts of the gambling ecosystem online, yet neither clearly falls within the current regulatory framework. Apps operating with digital currency look and feel like traditional gambling products, but because the winnings do not produce prizes in conventional cash, they are not considered to be licensable gambling. Likewise, tipsters do not themselves handle money, and so are unregulated and have no formal safeguarding responsibilities.

It should be noted that linking gambling-related behaviour online and gambling related discussions online to actual gambling behaviour is not in the scope of this study.

BACKGROUND

Over the last decade, where and how we live our lives has profoundly changed. The rise of social media has changed what information we encounter, whom we know and talk to, and how we talk about our lives, experiences and problems. This is changing society and those who now live meaningful parts of their lives online.

Like so many other parts of our lives, over the last decade gambling has moved online. Online gambling is now a multi-billion pound industry, and bookmakers, gambling journalists and commentators have built substantial online presences and followings across a broad range of sites, forums and apps. The internet both allows you to gamble, but has also created a new social dimension of gambling: where gamblers discuss tips and odds, reach their favourite journalists and follow matches and events with other fans.

Online gambling is a mix of old and new voices, of conventional and novel actors. Offline commercial bookmakers are present online, but they now sit alongside a range of new offerings, embedded gambling platforms: Console-based Gambling, App Real Money Gambling, Virtual World Gambling or Freemium Gambling applications. Some voices on social media are well-established offline journalists, whilst others are new, digital-first or digital-only experts and authorities.

Little is known about how the rise of social media, and more broadly the digital world, has changed gambling and those that do it. The technology landscape is rapidly changing, as are the habits of those who use technology to pursue their passions and hobbies. This has societal and psychological consequences: the norms and beliefs that people have about gambling, the kinds of conversations about gambling that take place, and the kinds of communities of gambling enthusiasts that form online. Especially, it is unclear whether social media is either promoting or confronting problematic and harmful gambling behaviours.

This paper presents new research by Demos to understand the relationship between gambling and social media within the UK. It combines both in-depth qualitative work with new big data analytics technologies developed by the Centre for the Analysis of Social Media to provide new evidence of the relationship between gambling and social media in three ways:

1. The Big Picture

    A birds-eyed view case study of the gambling ecosystem on Twitter, the different communities that constitute it, and the behaviour of accounts both dedicated to promoting gambling and those providing help for problem gamblers.

2. The Detailed Picture

   Three qualitative case studies of social media-based gambling communities, in order to understand the significances, contexts and meanings that sit underneath the numbers and statistics.

3. Review of Measuring Harmful Gambling-related Behaviour

   An analysis of whether social media reflects and facilitates possible harmful gambling and gambling-related behaviour, and its role in forming, propagating or challenging these habits.

This report has four parts. The first charts the overall ecosystem of UK users of Twitter who engage with gambling - and the different communities that have emerged on that platform. The second looks at the behaviour of the producers of gambling-related content on Twitter - what they share, and who the major contributors are. The third is a more detailed qualitative look at different important gambling-related communities that exist on Facebook, whilst the fourth provides more detailed descriptions of the major methods, technologies and research approaches - many of them new - that make research of the digital world possible.

PART ONE: The Overall Ecosystem

The first section tries to map the entire ecosystem of gambling-related conversations on one of the UK's largest social media platforms: Twitter. Where methodological terms are used, these are fully referenced in Part Four of this paper.

Overall, 877 Twitter accounts were identified that were dedicated to producing content related to gambling. A list of the UK's 50 largest bookmakers by revenue was searched for their social media accounts. This was repeated for 'responsible gambling' accounts. This list was supplemented by selecting all active gambling-related accounts as defined by the description of the account with over 1,000 followers. Whilst this list is not exhaustive, it gives a reasonable coverage of accounts that actively produce gambling-related content. Within it there were three distinct different kinds of account:

> a. 280 bookmakers and promoters of gambling products (29%): including, where a social media account was present, the top 50 bookies in the UK that were the official Twitter account or accounts of companies that offered gambling as a commercial product.
>
> b. 572 'tipsters' or associates (59%) - not bookmakers who directly offer gambling as a product, but accounts whose primary presence is to share tips; betting recommendations, opportunities and advice across a range of different sports. These frequently are affiliates who receive payment for users who link from their sites and become active gamblers.
>
> c. 25 gambling journalists (3%), a small number of individuals who report on sports events from a betting angle.

7 million people follow these accounts around the world. Within the UK, over 900,000 do so, or one in 20 of the UK's fifteen million regular Twitter users. Most people - 40% of the total - follow bookmakers, but 36% follow tipsters and 22% journalists.

Mapping the landscape

The experience of any individual on Twitter - the information they see, the people they tend to talk to and that tend to talk to them - depends on who they follow, and who follows them. The content sent from a user is visible to their followers, likewise content of the people that they follow is visible to them.

Following behaviour creates networks: larger groups of people that follow the same accounts. Different follower networks produce different online environments related to gambling; different messages, different promotions and different sports.

To understand variations in this online terrain, we mapped the follower networks centred around the 877 gambling accounts we identified. The map contains each of the 900,000 Twitter accounts that follow one or more of the 877 gambling accounts we

identified (fig I). On this map, every dot is a separate account, every line a follower link between an individual account and one of the gambling account.

The location of every account is important. Accounts that follow the same gambling accounts will be very close together; those that follow some of the same gambling accounts will be quite close together, and those that follow none of the same gambling accounts will be far apart. Nearness on the map, therefore, implies similar follower networks and, overall, similar gambling-related experiences on Twitter.

The map shows a bright, dense central body of people who tend to follow more accounts, and a darker, looser constellation of users around the edge. The most casual users exist on the fringes of our dataset, following one or two of our seed accounts. In the centre, however, we find users for whom gambling may be more important: they follow many more gambling accounts.

Figure I
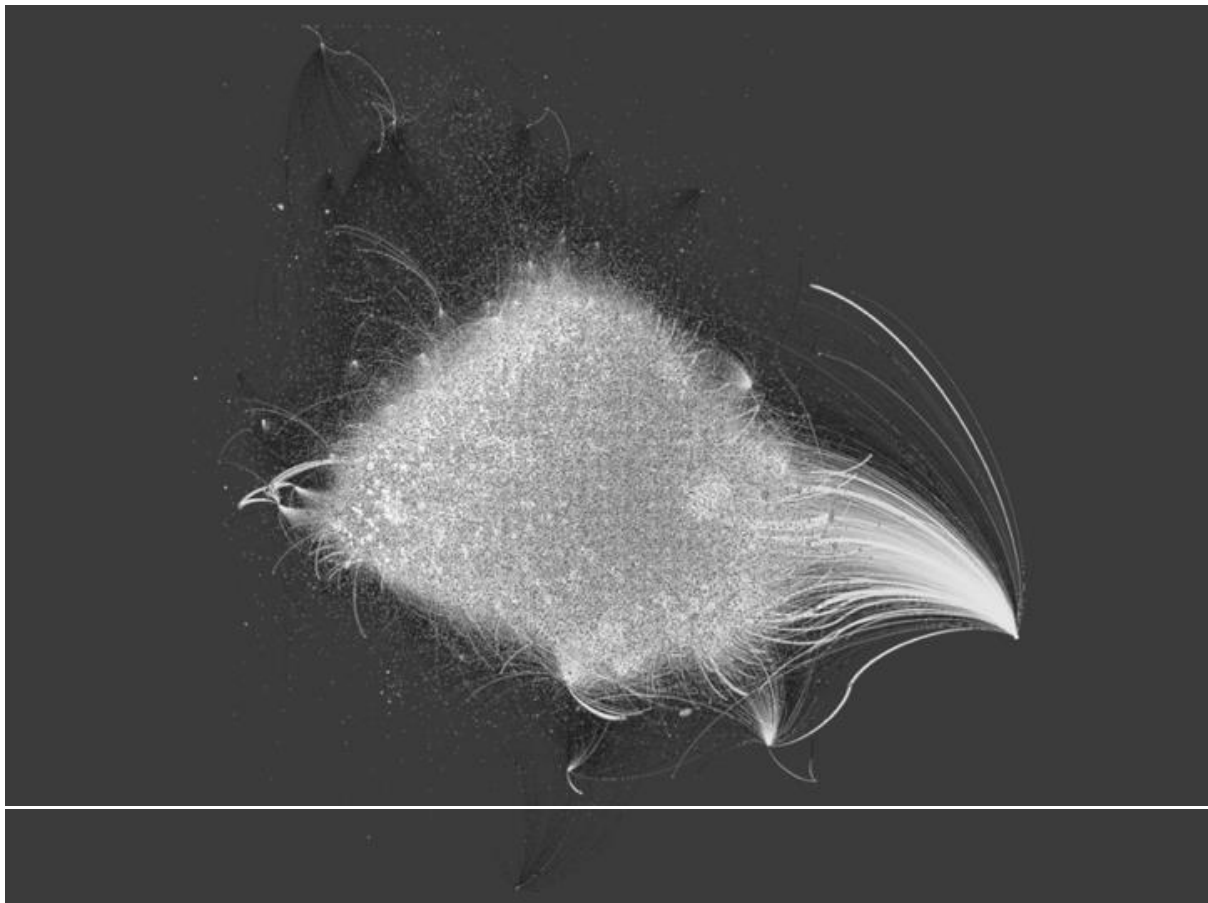
Within the overall network:

• **The vast majority are male:** 78% of the accounts were judged to be male (see the method annex for more information). Female accounts made up the remaining 13.0%

and institutions 8.9%. This was the same for tipsters (79%), bookmakers (79%) and gambling journalists (75%).[1]

• **Most people come from England:** 902,838 (13%) of the users gathered in the worldwide data collection could be placed in the United Kingdom. Of these, 776,499 (86%) were based in England. Scotland was the second highest (8%). Wales (4%) and Northern Ireland (2%) made up the small remainder.

Users who follow lots of gambling accounts are concentrated together

With this landscape mapped, it's possible to look for differences in the online terrain, and to look for areas where gambling-related activity seems to be a more important part of online life for those that carry it out. First, we looked at differences between those accounts that follow only a few gambling accounts, and those that followed many (fig II). We cannot say whether following lots of gambling-related accounts on Twitter impacts offline gambling behaviour. However, following lots of accounts on Twitter implies that gambling is likely to form a more important part of peoples' online life as they receive more gambling-related information and messages.

The majority of users in the UK follow less than three accounts (769,618, 85%), but a small number of accounts are connected to a large number of gambling sites. Four thousand users follow twenty or more accounts (highlighted in blue on the network), and 254 users follow at least fifty (highlighted in pink).

Figure II
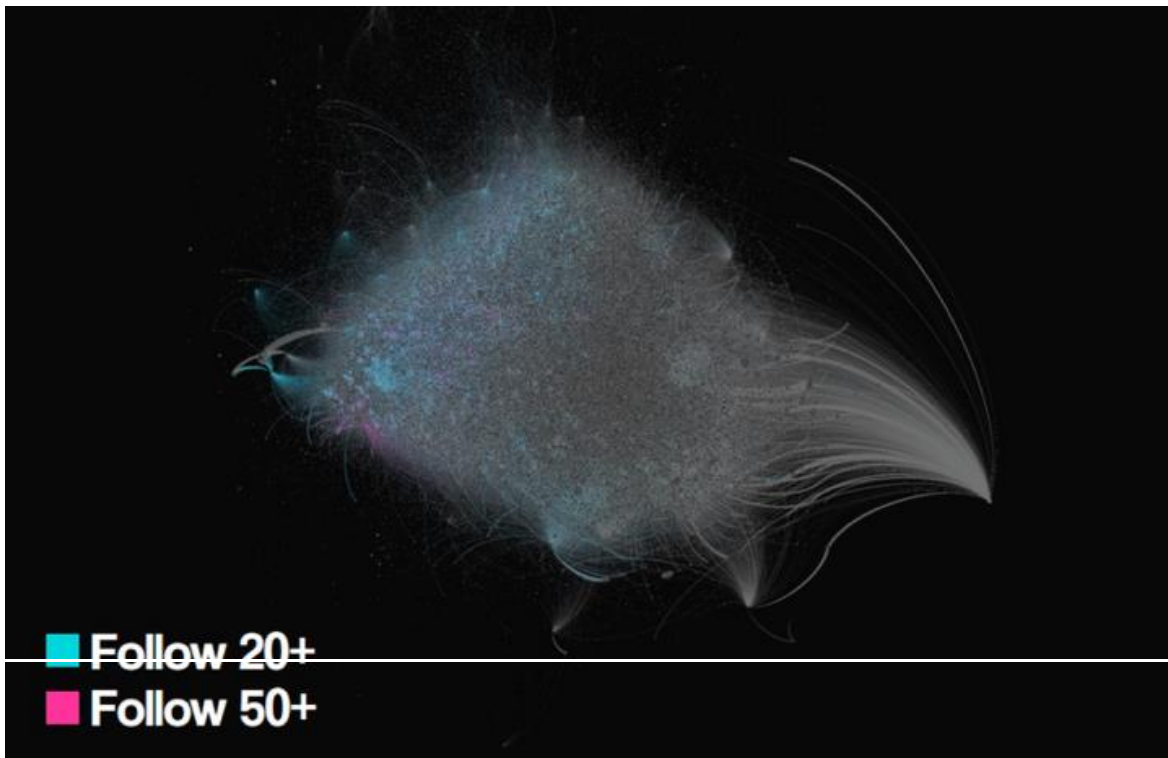
[1] Conducted using latent NLP algorithm for gender - see annex for more details

We see that the areas of the network where people follow many accounts tend to be fairly concentrated on the leftmost belt. This concentration implies that certain, more gambling-intense networks coherently exist on Twitter within the broader network of users.

Emotions flow through the network

Social media is a place where emotions and ideas spread, and where fans and followers of gambling accounts do not just passively consume content, but also answer back - sending questions and challenges to bookmakers and sharing jokes, and celebrating wins with other users. We next looked at the flow of Tweets through the network, and especially the flow of Tweets that were judged to be 'emotionally distressed' - those that were angry, horrified or unhappy. (See the methods annex for more information on how this was done, fig III).

The network was, we judge, a fairly emotionally charged one: the gambling-related activity taking place on it seemed to matter to people, eliciting in some cases emotionally charged responses from the people taking part. Over the six weeks of study, close to 70,000 users (2.7% of the UK network) were identified as having sent an angry or distressed tweet. Whether committed or casual (centre or periphery in the network) there is a wide distribution of emotional tweets. If something goes wrong, social media users are quick to turn to Twitter to vent their frustration.

Figure III
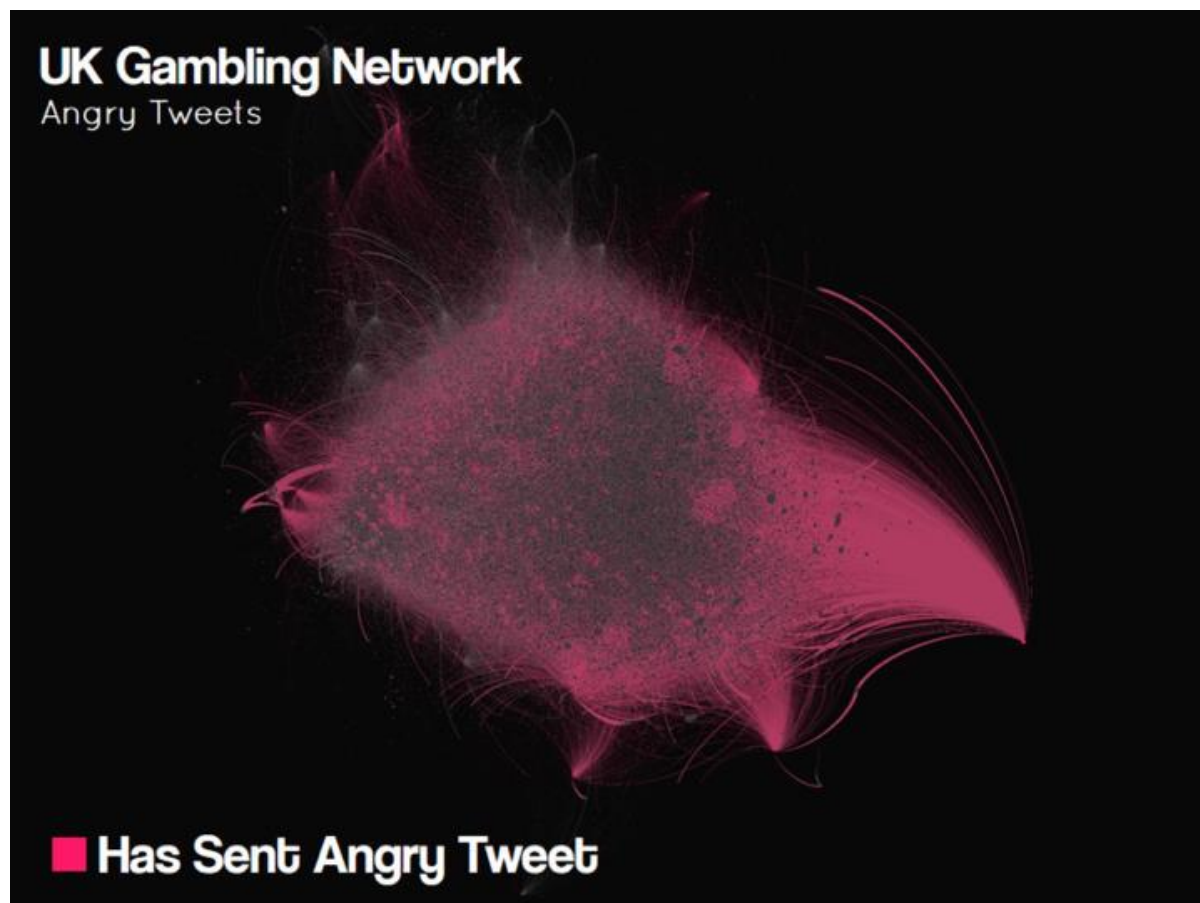
Finding Communities within the network

People use Twitter in radically different ways. Some use it much more frequently and intensively than others, some use it to primarily create and share content, whilst others primarily to consume it. Importantly, communities often form on social networks of relatively similar kinds of user; with similar kinds of beliefs and interests, values, habits and even backgrounds.

The overall network of people following gambling accounts on Twitter is also composed of a number of smaller communities of people who use Twitter in ways generally similar to other members of their community, and different from those who are not. An algorithm was used to find communities within the network (see the methodology section), based on people following similar accounts. In total, twenty communities were found of radically different sizes, ranging from hundreds of thousands of users to just six. Each community is shown by a different colour within the network (fig IV).

Figure IV
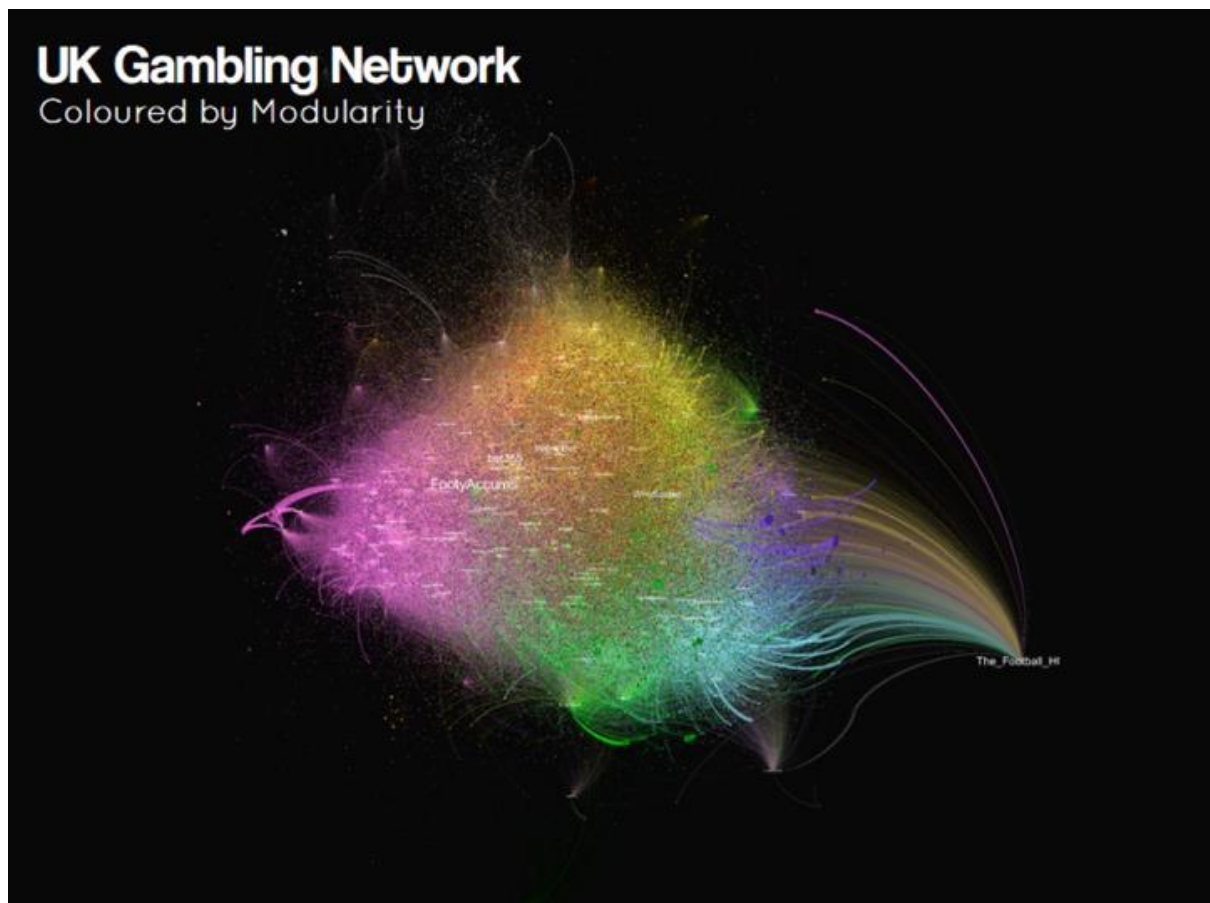
Six communities were particularly significant, and two, especially, dominate this online network (fig V).

The main bookmakers' community (cluster 1, below)

The first, central and major cluster were those people who mainly followed one of the major bookmakers. The most-followed accounts were Bet365, William Hill and BetFair. 75% of its members are male. It was the second largest of the clusters, with 127,000 users being identified as belonging to it.

Over the six weeks of study, the members of this community sent an average of seven Tweets either to, or mentioning a gambling account - the second most prolific (sending the most tweets) cluster in the network. Members of this cluster followed 1.2 gambling accounts - less than the average for the network. This cluster accounts for over 80% of all retweets of Tweets to, or mentioning a gambling account, however.

The 'tipsters' community (cluster 5, below)

This community was made up of people who mainly followed not only the main bookmakers, but a wider and more amorphous collection of 'tipsters' - accounts that offered advice and tips about bets and gambling that are frequently paid affiliates of gambling sites. This was the largest cluster, with over 140,000 members. The 'followership' across these tipsters was not characterised by any stand-out accounts. They were also the group that, overall, conducted the most intense and prolific online gambling-related behaviour. Members of this group follow, on average, about twice as many gambling accounts as any of the other communities. They also sent, on average, more Tweets per user that mentioned a gambling account than any community other than those who followed the 'gambling care' accounts (see below).

Alongside these two main clusters were three smaller clusters composed of people who seemed to use Twitter more casually related to gambling. These were:

Football Fans (cluster 2, below)

These were 93,000 users who predominantly followed a series of football-related gambling accounts. The most-followed accounts were FootyAccums, AccaTrackerTM and Footy_Tipsters. At 85%, this was the most male-dominated of any of the clusters, and also the one where the highest proportion of people had sent an emotional Tweet.

'Sports Gossip' (Cluster 3)

These were 86,000 users who tended to follow accounts that blended sport, gossip and news. The most-followed accounts were SwearingSport, UpTheStakes and BabesAndBets. Many of the accounts that formed the core of this cluster mixed together sports updates and soft pornography with gambling and betting news and offers. It was the second most male-dominated cluster in the network (84%).

'Casual Fans' (Cluster 4)

This cluster of almost 60,000 users was the most separate from the other clusters. On average, members of this cluster were the least intensively engaged with gambling-related behaviour on Twitter. They followed the smallest number of gambling accounts, and sent on average the smallest number of Tweets. They also contained, by a significant margin, the largest number of female accounts - 40% of the members were female.
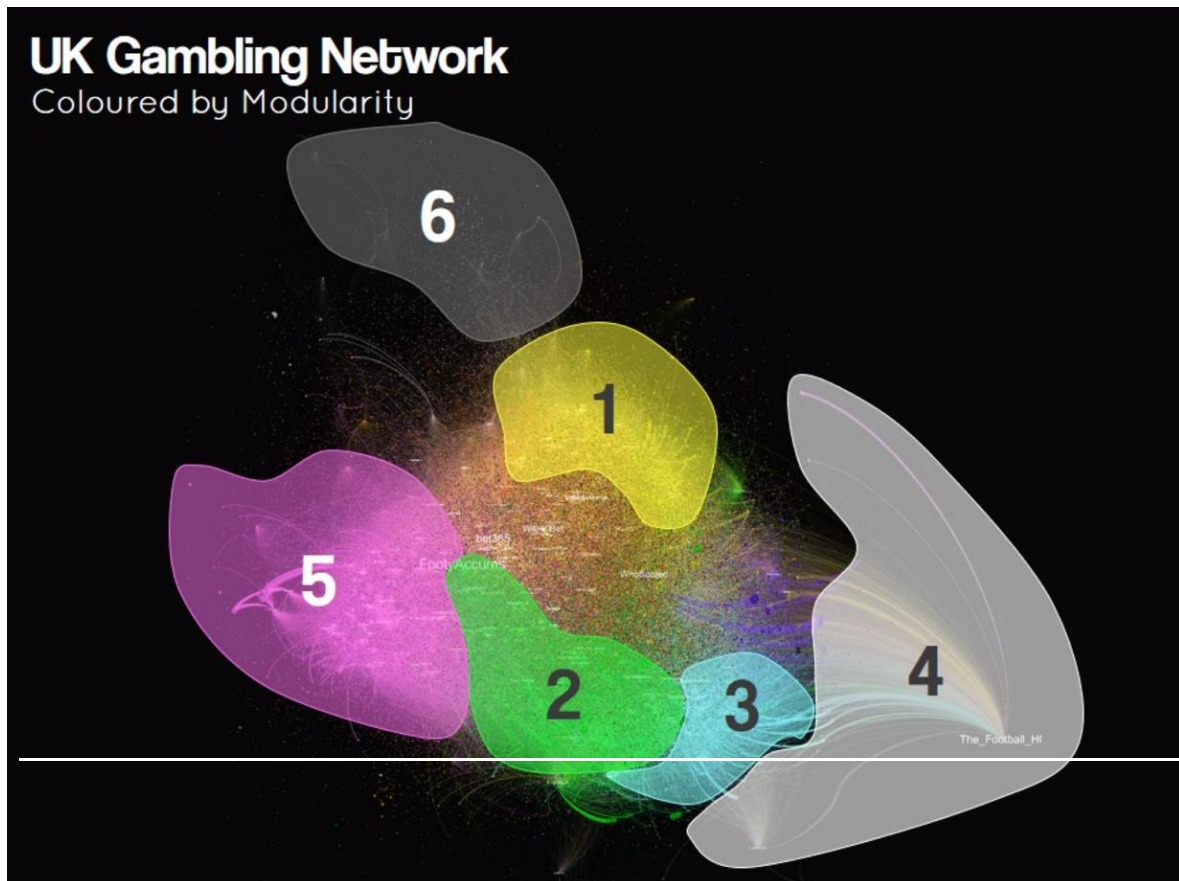
Figure V

Responsible Gambling Accounts

The final community (cluster 6, above) were the network of people following Twitter accounts dedicated to promoting responsible gambling and offering help with problematic gambling behaviour. Composed of just 4,659 users, this cluster sent 36 Tweets per user during the period of study - the most vocal of any cluster. However, 88% of the accounts that made up this cluster were 'institutions' rather than real people - far higher than other clusters. Its location on the edge of the map also shows

that the gambling help network is distinct from the rest of the network: people who follow gambling accounts tended to not follow responsible gambling accounts.

We ran a similar analysis on the seed accounts alone to understand how well integrated responsible gambling accounts were into the wider network. The network map below is functionally the same as those above. Nodes are sized by followership and edges link seed accounts on lines of followership. These are one-way – if one of the two nodes follow one another, an edge is drawn between them.

Likewise here, accounts that promote gambling online tend not to follow responsible gambling accounts. Here, too, the gambling care network is distinct, typically followed by other gambling care accounts, but not - typically - bookmakers, tipsters and affiliates or gambling journalists (fig VI).

Figure VI
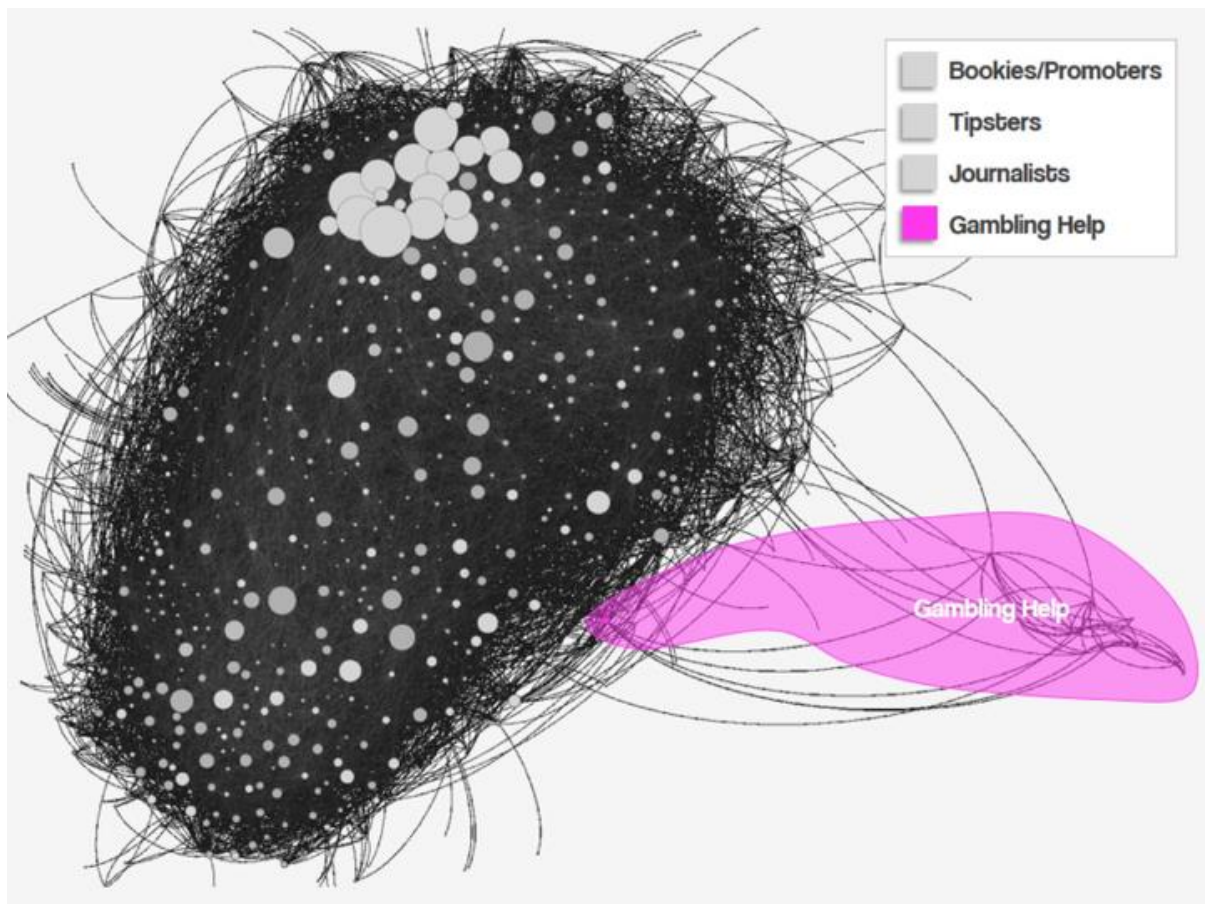
Problematic Gambling Behaviour

It is not possible, using online research alone, to identify problematic gambling behaviour. Without other research, it is not possible to identify how any profile of online activity translates into offline gambling behaviour. To do that, it is necessary to understand the online dimension of gambling within the broader context of people's

lives - to learn more about what people's actual gambling habits are, and their feelings about them.

However, it is possible to identify more intensive gambling-related behaviour on Twitter, to understand the number of users who - through the content they send and they accounts they follow - undertake very large amounts of online activity related to other accounts. In order to do this, a series of criteria were applied to identify only the accounts that undertook the most gambling-related activity on Twitter (fig VII). These were:

• Only accounts with male or female names, rather than institutional ones.

• Only accounts which had sent at least one emotional, angry or distressed Tweet to a gambling account over the period of study.

Then:

• How many gambling accounts the user follows.

• How many Tweets the user had sent to, or about, a gambling account over the period of study.

On this criteria:

1,787 accounts (0.2%) were 'quite intensive': sending more than five Tweets, at least one Tweet that was distressed, and following more than 10 gambling accounts

412 accounts (0.04%) were 'more intensive': sending more than 20 Tweets, at least one Tweet that was distressed, and following more than 30 gambling accounts.

The most intensive accounts were not scattered randomly around the gambling network. As before, the nodes are sized by followership. The colouring of each node is consistent with the cluster listed above. They were almost entirely present in only two of the communities, described above: the 'bookmakers' and 'tipsters' communities. They also formed, themselves, a coherent network, especially within the tipster and affiliates community (highlighted in pink, below). Many of the most intensive accounts therefore follow the same gambling accounts, and are involved in the same conversations, and receive the same content.

Figure VII

UK Gambling Network
Users: 20+ Tweets, 30+ Following, Emotional, Non-Institution
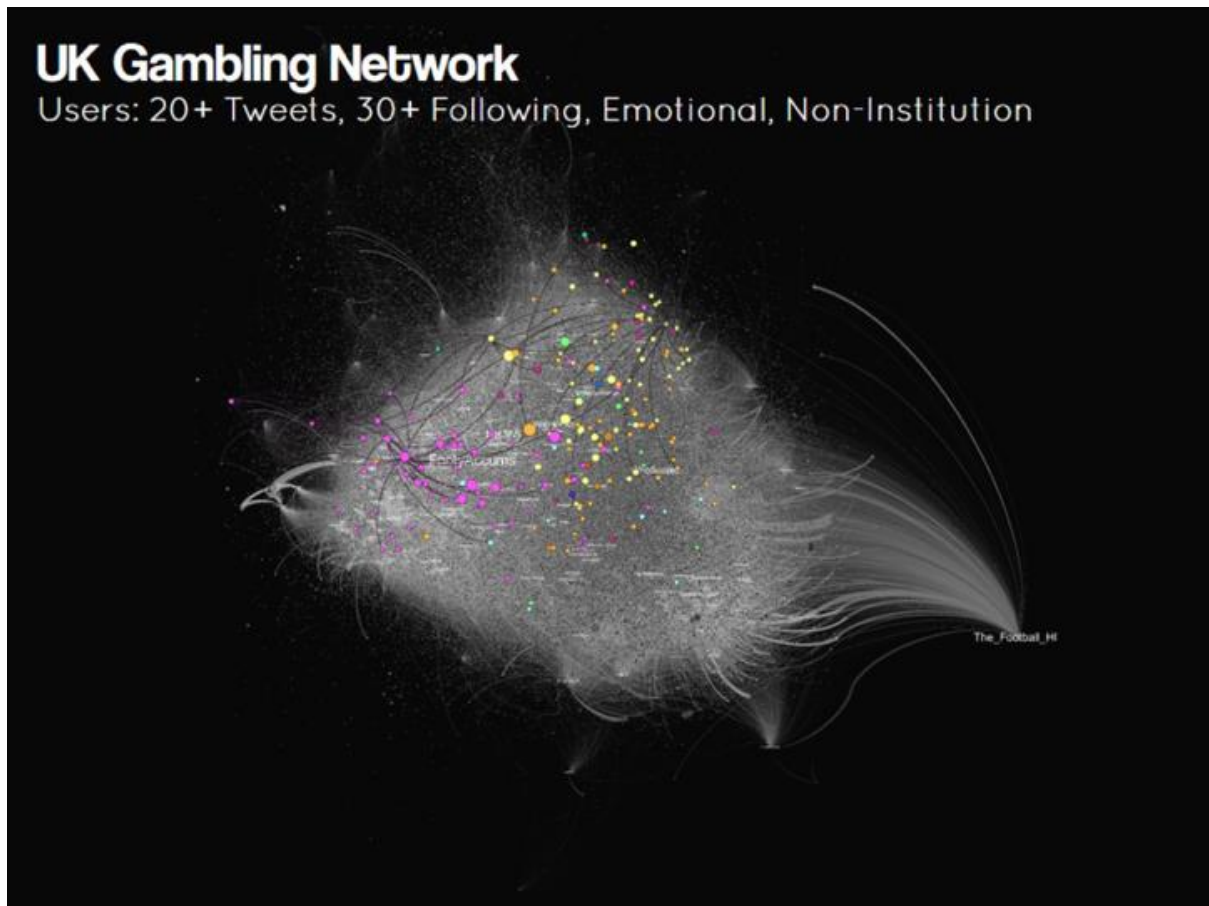
PART TWO: Bookmakers, tipsters and gambling journalists

Companies and individuals use Twitter as a way of sharing information related to gambling. This includes the explicit promotion of gambling, of odds, offers and opportunities. It also includes tips and news regarding gambling, the reporting on wins and losses, and a broader conversation about sport, of which gambling is a part.

137 gambling accounts, of the 877 studied, Tweeted during the period of study. 73 of those were commercial bookmakers, 61 tipsters, and three gambling journalists. They sent 78,709 tweets over the 23 days of study.
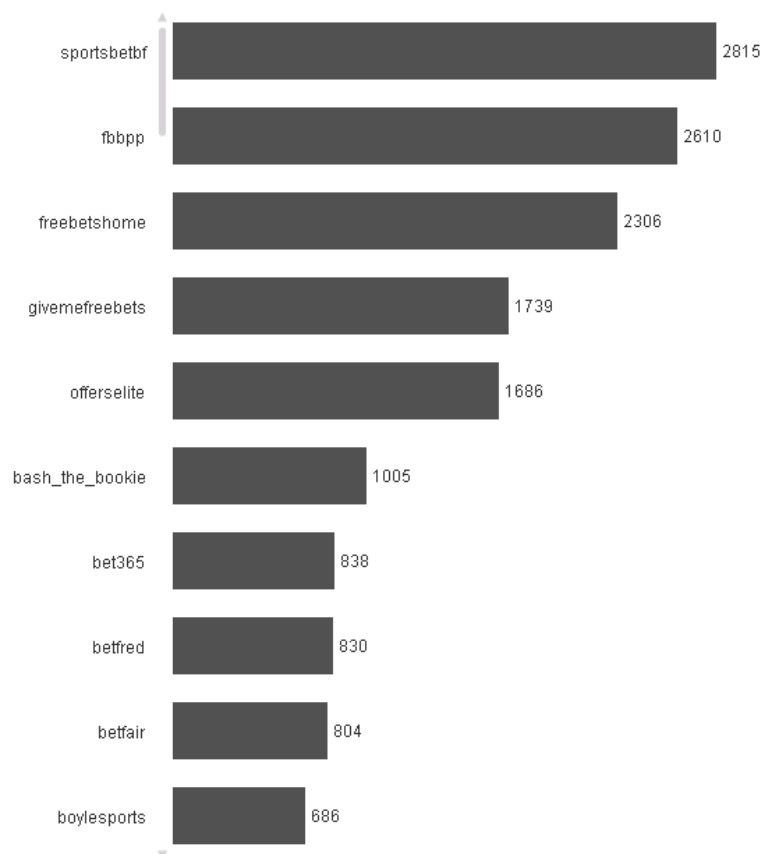
A user who followed just the three most prolific accounts would have received 8,500 messages, or on average one every four minutes. Although a number of the biggest bookmakers in the UK were active over the period, the most prolific users were the betting promoters without clear affiliations to a single bookmaker. The three most prolific accounts are gambling advertisers, rather than commercial bookmakers (fig VIII). *Sportsbetbf* advertises free bets and similar offers from most of the main bookies, mixed with general sporting news. *'Sports 4 all'* (@fbbpp) is similar, and also advertises free bets and similar sign-up offers from most of the main bookies. *Freebetshome* advertises free bets from most of the major bookmakers. Only three of the ten most prolific accounts are mainstream commercial bookmakers.

Figure VIII - Most Active Seed Accounts (# Tweets sent)

Most Active Users

Account	Tweets
sportsbetbf	2815
fbbpp	2610
freebetshome	2306
givemefreebets	1739
offerselite	1686
bash_the_bookie	1005
bet365	838
betfred	830
betfair	804
boylesports	686

*Commercial bookmakers dominate interactions with users*

Whilst tipsters are also prolific senders of Tweets, the commercial bookmakers receive the vast majority of interactions with Twitter users. We collected and analysed the messages sent that mentioned, replied or retweeted them from other Twitter users (fig IX). In total, this amounted to 263,000 tweets from 131,000 users over the three weeks of collection. Of these, 228,000 (87%) involved bookmakers.

Figure IX - Activity by Type of Seed Account (%)
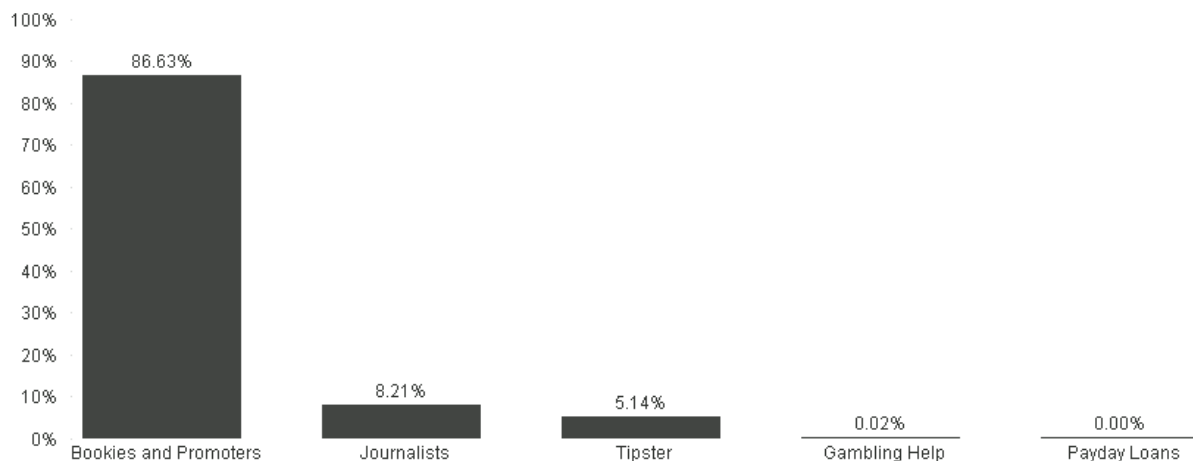
The conversation is a mixture of the explicit promotion of gambling and sports enthusiasm

The commercial bookmakers sent over 39,000 Tweets over the time of study. 75% of this (29,000) were explicit offers regarding gambling; often a free-bet promotion or a money-back guarantee that promoted the idea of a 'safe bet'. However, explicit promotions were sent alongside Tweets that were simply about sports, including jokes and updates from a range of different sports, and commentary on matches and events.

Football dominates the Twitter conversation related to gambling

Although the research fell over the duration of the 2015 Rugby World Cup, football was the dominant sport mentioned by gambling accounts (fig X). Three in every four tweets sent by a bookmaker or a tipster in this period was football-related:

• Football (28,554 tweets, 75.0% of the tweets sent)

• Rugby (4,447 tweets, 12.0%)

• Casino gambling (4,076 tweets, 10.5%)

• Racing (785 tweets, 2.0%)

• American Sports (121 tweets, 0.5%)

Tipsters and affiliates tweeted about rugby three times more often than bookmakers, while bookmakers continued to focus on their key market, football.

Figure X
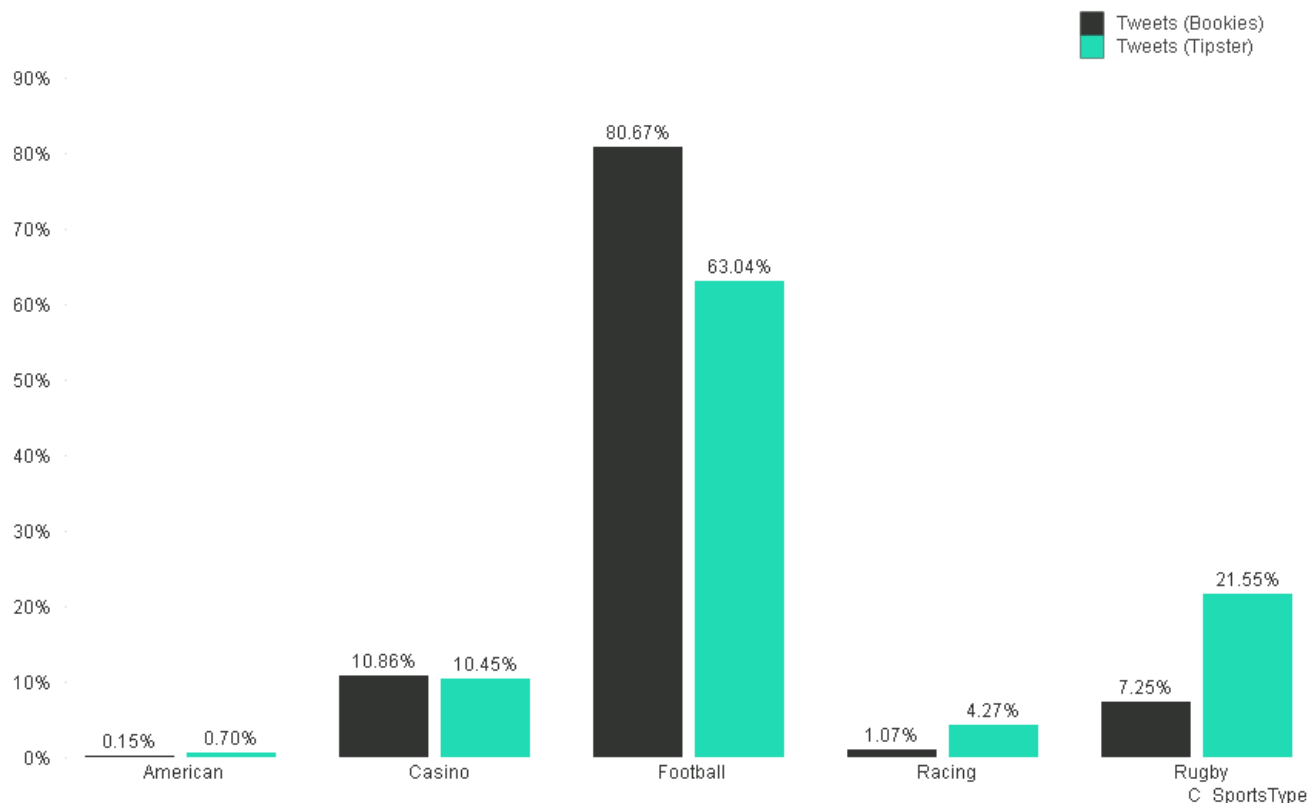
Hashtags like casino, poker and slots were used in 4,450 of tweets. Football-related hashtags were used just over six thousand times. Although the #RWC2015 hashtag was used just 1,315 times, it is worth noting that as the official hashtag of the Rugby World Cup, and that anybody 'second-screening' (using their phone during a game) or simply following rugby news on Twitter would have seen a large number of gambling-related content (fig XI). The same can be said for users searching for team news on the football-related hashtags. This shows how the structure of social media brings users into contact with gambling advertising without their express interest.

Figure XI - Top Hashtags (# Tweets)

Times Used

Hashtag	# Times Used
casino	1991
football	1826
mufc	1683
afc	1318
odds	1317
rwc2015	1315
poker	1261
mcfc	1205
slots	1198
freebets	1131
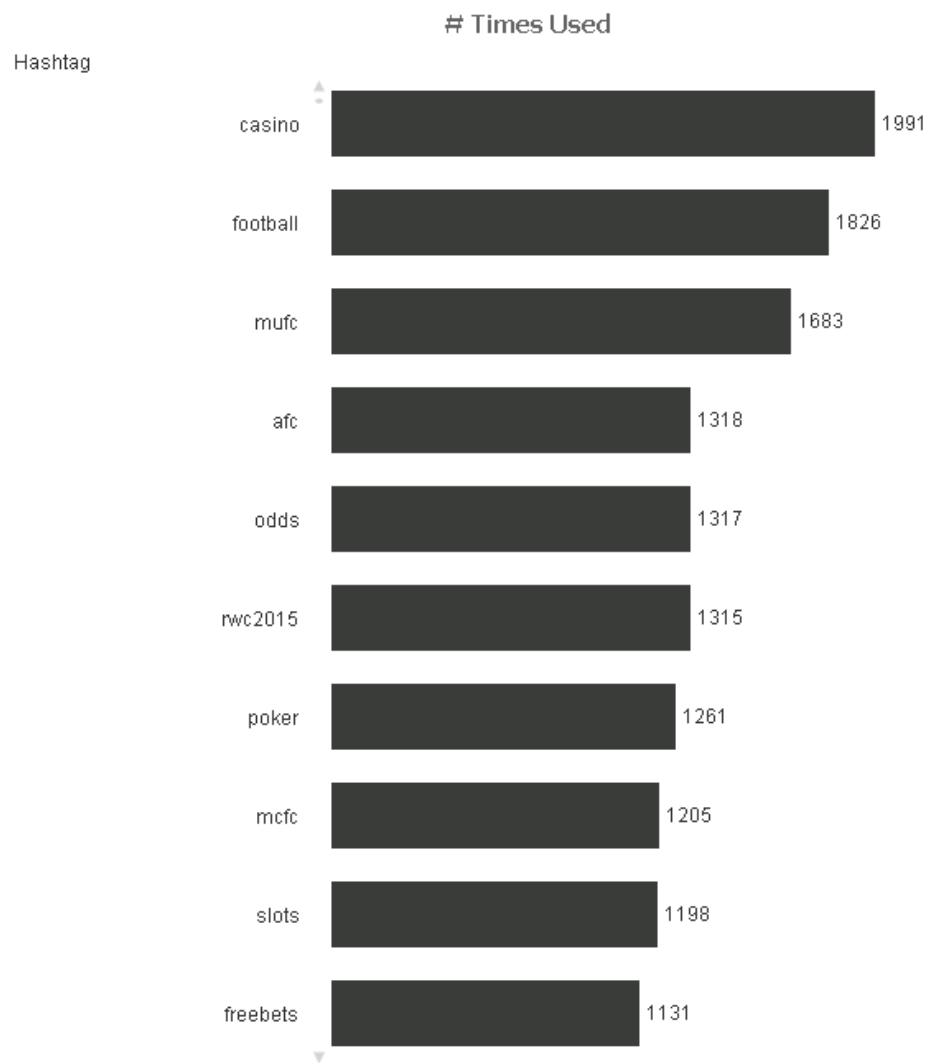
PART THREE: The Detailed Picture

The experience of engaging in gambling conversations on social media is not just something to be counted. It is also something that is individual and specific to each person, something that occurs within the context and detail of each person's unique life, experience and circumstance. Alongside the quantitative work, above, this section undertook deep-dive, qualitative case studies of social media-based gambling communities, in order to explore the character of these social media spaces; the nature of the social media communities that exist and the conversations that take place within them, their scale and size, the subject matter of the discussions in them, the dominant attitudes related to gambling expressed, and the emotional content of the discussions.

Three different cases of social media gambling community were studied, each with a different membership, purpose and relationship with gambling. These were:

• Three football tipster or affiliate Facebook pages
• A social media gaming app community Facebook page
• A problem gambling website forum

Case Study One: Three football betting tips Facebook pages

Parts One and Two in this report both identified 'tipsters' as an important part of the ecosystem on Twitter - a large group of often vocal accounts that are followed by a large number of accounts, including many of the most intensive. The first case study was a detailed look at the role of tipsters on Facebook in the promotion of betting opportunities and offers. These three pages had more than 79,500, 79,000 and 27,000 likes each, and publish around 5-20 posts per day, attracting 10-200 likes and 10-250 comments per post.

These three pages were similar in terms of content and purpose. All three were Facebook pages run by individual 'betting tipsters', promoting accumulator bets and other types of sports-related betting through a range of bookmaker websites. These football tipsters promote betting websites, often with 'free' bets and promotional offers, as well as circulating advice about which way to bet, previous successful efforts and overall success rates, regarding likely returns.

> *Page Administrator: SOOOOOO CLOSE YESTERDAY in our ACCAAAA. Every other bet has sailed in and we've SMASHING bets on here recently, anyway I HAVE FOUND AN ABSOLUTELY INSANE ACCUMULATOR FOR TODAY'S GAMES! LOOKS TOO BRILLIANT TO BE TRUE!*

> *Page Administrator: We've managed YET AGAIN to change £10 into £500 !! AMAZING !!! Are you still not involved in this challenge!?! If you've followed you will see how we've managed to complete £10-£1,000 and £10 to £500 in just*

*under 3 days !! That's 34 REPEATED CONSECUTIVE winning singles in a row !!!
How are you still not in on this?! You can join with only £5 !!*

These pages create communities of Facebook users who interact with these tipsters, betting on football matches through mainstream bookmakers, sometimes based on the advice of the tipsters who run the pages. The users who compose these communities are overwhelmingly male. Ninety-eight per cent of account names in our sample of comments were male, with only one per cent female; in one per cent of cases the gender of users was unclear. The vast majority of the comments posted by Facebook users were single word or two word responses to the promotional material posted by the page administrator, usually 'yes' or 'in'.

Gambling promotion is wrapped up within general sports appreciation

The subject matter of the conversations included several recurring themes. The main use of these forums was to establish an intention to bet with the tipster, and discuss whether or not a certain 'accumulator' or other bet was worth betting on. Users also discussed the matches they were betting on, and football in general, which added to a sense of shared interest and community on the page. In all three cases, the page administrators, as well as discussing their betting advice and circulating bookies web pages, shared links to football related videos and news stories in order to promote their content with a wider audience. Fifteen per cent of the posts on these Facebook pages related to pure discussions of sport rather than gambling. In the case of these tipster pages, the emphasis is predominantly on the community aspect.

> *Page Administrator: Mourinho has well and truly lost the plot ... Filmed pushing a schoolboy*
>
> *User: I like Wenger and I think he's a brill manager, however I think it's time that something changed. The inconsistency and lack of simple routine wins is starting to wear thin to be honest. His transfer business has been woeful in the past few seasons, and with only a couple of exceptions.*

Alongside general sports discussions were, first, specific discussions about gambling: whether to do it, and whether users had won or lost. When users discussed winning bets, as they did in 10 per cent of posts, other users commonly offered congratulations. When discussing losses, as they did in 19 per cent of posts, they were met with consolation and sympathy.

> *User: The late wigan and city goals just won me £1075!!!*
>
> *User: Thankyou won another one.. on to the next one grin emoticon*
>
> *User: Am gutted Leeds and arsenal let me down for 830 quid*
>
> *User: I have had a fucking shite week losing £70 quid. So hopefully this is the road to salvation*

Discussions were generally pro-gambling, but flares of disappointment and sadness regularly occurred

Most of the users of sites dedicated to gambling spoke positively of it, and in most cases, the discussion of gambling was positive (36%) or neutral (34%). However about a third of the posts had a distinctly negative tone. These posts often either related to the need to win money, or of frustration with a loss. Some of these posts could be regarded as potential indications of a users' problematic relationship with gambling.

> *User: I'm looking forward to a good Christmas this year, got a good price too, so here looking for the next bet.*

> *User: I've lost a fortune this week, it's not good*

> *User: I've lost money and hope, I'm out now*

In a number of cases, these expressions of frustration were ignored by the page administrator. In some cases, on one of the pages, these posts were met with the intervention of the page administrator, urging gamblers not to continue if they are becoming frustrated.

> *User: I hope so, Im losing money here… ☹*

> *Page Administrator: if you are losing money and not gambling for fun anymore – STOP, and take a break!*

The most significant reason behind the 13 per cent of posts which were angry in tone were arguments between users concerning the reliability of the tipster.

> *User: My [betting company] account went from £125 to £0 in only a couple of hours. I should not put so much trust in your tips and predictions*

> *User: Well that's an end to that shit fucking tip*

> *User: can anyone recommend an actually descent tipster?*

Case Study Two: The Facebook community page of a social gaming application

As well as facilitating the promotion of traditional forms of gambling, the internet provides space for entirely new forms of gambling possible only through social media. The second case study looked at one of these: the Facebook page of a 'freemium' gambling social media gaming app. On this app, users are granted a small number of coins to use in games, and can win coins through playing the games, but can also buy larger amounts of coins for real money. The games themselves are themed variations on simulated slot machines. The page had more than 14,250,000 likes, and is part of a network of pages related to this app, including Facebook pages for the mobile version of the app and an online store.

The purpose of the Facebook page is commercial, and the content posted by the moderator was promotional material, advertising discounts and special marketing periods in order to encourage users to play the games and share the promotions with other people in their social network. All of the promotional posts used on the page contained hyperlinks to the gambling app and detailed, colourful, cartoony promotional images. These posts generally had several thousand likes (5-10,000), several hundred shares (250-850) and several hundred comments (75-350). Generally, five or six such posts were made per day. The comments were uniformly left by users of the app, who were overwhelmingly English speaking. Sixty per cent of the sample of comments we collected were posted by women, 37 per cent were posted by men, and in three per cent of cases gender was unclear.

The majority of the comments from users were complaints

Whilst the page itself was focused on content promotion, users' replies overwhelmingly focused on seeking to gain free coins, complain or express frustration with the app. Of the sample of comments we examined, 46 per cent were complaints regarding the perceived lack of fairness in the games, and the poor quality of the app.

> User: *This game took all my money and now it just so happens it stops playing with a connection lost message. Smh get it together.*

> User: *HALLOWEEN TREATS ha don't make me laugh HALLOWEEN TRICKS more like, I had a go on all 4 of these games [500k a go] and LOST 120MILLION; I got the bonus up on all 4 games and they only payed out between 2 and 4 million!! WHAT A TRICK, THANKS!*

Twenty-four per cent of the complaints were users complaining about losing more generally; specifically about having lost many 'spins' in a row, not hitting any bonuses, or more generally losing coins.

> User: *Can't get on any of the games I had to download everything and I'm losing money*

> User: *WHAT have you done with the winning on iPhone versions!? I did the update and spent so much money this weekend coz I can't win ANYTHING, let alone a bonus! This is getting stupid*

Three per cent of posts were quite extreme or serious reactions to losses, indicating that potentially some users had an unhealthy relationship with the app.

> User: It's *not about the fun anymore; it's just about the Money..*

> User: *I have an idea for a halloween treat, put back all the bloody scatters + bonuses that everyone knows you have taken out of the game to squeeze more money from the weak and addicted that keep re-buying coins and making you richer.*

A substantial number of comments were angry or distressed

User's posts were overwhelmingly angry and negative. During the research, analysts found that 74 per cent of posts demonstrated a negative sentiment, with only 12 per cent positive and the remainder neutral or unclear. In terms of tone, 48 per cent of posts were angry, while 40 per cent were calm. The remainder were neutral or unclear in tone.

> User: *How do you think we can pass a level when you give us a big win and after we spin and spin hundreds of time without getting ANYTHING!??! What ton earth is this? GIVE me BACK the coins I'VE PAID FOR... to lay a little, while not to lose it all in just thirty minutes. SHAME ON YOU!!*

> User: *I ALSO HAVE BEEN PLAYING FOR YEARS AND I AM SO TIRED AND SICK OF THEM TAKING THE POINTS I WORK HARD TO GET EVERY SINGLE DAY... THEY TAKE AND LEAVE U WITH NOTHING!!*

The interaction between the moderator and the users was minimal, with little moderation or supportive outreach, even to distressed users. Most complaints or grievances are ignored, with moderators occasionally but not uniformly responding to technical complaints. When interacting with each other as opposed to the page administrator, users were generally supportive, backing up each other's complaints to the page administrator, or expressing sympathetic sentiments. Few users were confrontational with each other.

Case Study Three: A problem gambling forum website

Social media can also provide new opportunities to assist problem gamblers, and facilitate peer and professional support for those seeking help with a gambling addiction. The final case study focused on three areas of a prominent problem gambling website, the 'new users introduction' section, in which users introduce themselves and explain their problems; the website 'feedback' section, in which users provide feedback to the moderators; and the 'overcoming problem gambling' section, where users share tips and general thoughts regarding how best to deal with their addiction.

The scale of this site was significant. Across all of the forums on the site, there were more than 331,000 posts, in addition to which there was a user chatroom, a problem gambling helpline, and a text service allowing access to professional advisers between certain hours. In the three forum sections we examined, there were over 80,000 posts in total.

The forum is an important place for people to seek help

The site can be rapidly accessed by problem gamblers, is always available, and can be used anonymously. The forums were very large, and posts were almost always quickly replied to, most often from peers suffering similar problems or with similar experiences. The 'new users introduction' section contained a number of lengthy, detailed posts into the situations and concerns of problem gamblers.

> *User: Ok, so this is my first post on here. […] I've gambled for at least 21 years, I'd call myself a functioning gambler, get all my bills paid then spend all the rest. Online fruit machines are my real vice. So like most gamblers I'm skint, and in the gamblers' twisted logic I decided to spend my last bit of money to try to raise some money for Christmas, as mental as that sounds. We gamblers have a good way of rationalising to suit our addictions. So I prayed for a Christmas miracle for me and my kids. Stuck my last £100 on an online casino and gave it a go. I knew how much I needed to win, about £500. Amazingly, I won the 500 I needed, didn't cash it out, carried on playing, won another 1000 then another 500. I was up to £2800 and all I had to do is cash it out. You can probably see what's coming.*

> *User: Hi so just a bit about my story I starting playing online bingo years ago but just the odd £10 here and there which wasn't too bad over the past year I've gone onto online slots and casinos and it's got very bad I've had to have loans to pay my debts, my partner has payed a lot off, I owe money to quite a lot of people and I just can't stop. I know what I'm doing is very wrong but I just can't stop myself every night when my partner goes to bed I play its stupid. Can any1 give me some tips that's worked for them ?*

There was significant peer-group support and encouragement

The responses posted by forum users were overwhelmingly positive, offering sympathy, relating the new user's experiences to their own, and encouraging new users to take positive action. They frequently provided useful practical advice, for example sharing the phone number of gambling helplines, recommending counselling, or sharing information on types of gambling website blocker to help online gamblers. More than half of the messages of support posted to new users contained these kinds of practical advice in addition to warm wishes.

> *User: hi there, a few tips for you: first whatever you do, do not reverse the withdrawal (assuming you withdrew the £3300). Online bookies allow you to reverse it so that you will gamble it away & they don't have to pay out. Some keep the withdrawal 'pending' for 2 days! Plenty of lads have gone broke with them. Secondly to help you to do this, download ' txnogam ' (google it) it's a gambling-site blocker you can use on a 28 day trial basis for free. install it right*

away (use the 'never allowed to uninstall' option). […] Say goodbye to gambling while you're still young.

Overwhelmingly, it was existing members and not forum moderators offering support and advice on next steps. In the 'overcoming problem gambling section' users shared emotional support and practical advice with each other.

> *User: Hi and welcome to the forum. Fobts were also my poison, however it is possible to stop playing them. Temptation to play is the biggest problem so take it away. Never carry a card or cash when you leave the house. Hand over all your money for your partner to deal with. Ask for cash when it is needed and provide receipts for what you have spent. Contact Gamcare. Go to GA. Do whatever it takes to stop.*

This support wasn't just to stop gambling, but to continue to do so, and users often shared the number of days they'd been 'free' of gambling.

> *User: Hi. Put your money in the care of a close relative so that when temptation strikes you can't physically do anything about it. It's not easy and I have had pangs but the key is not being able to do anything about it. I'm on day 233 free now. I've seen a psychiatrist to discuss my previous behaviour patterns. Just talking with him has been a great help to me. […] Don't be afraid to seek professional help from your doctor if your mental health is fragile for any reason.*

> *User: Thanks for your messages. Well done on 233 days gamble free buddy! Lots of great info and tips there for me to take on board. Still feeling down about whats happened but at 21 years of age im sure ive got time to repair things. I'm just wanting to make these changes sooner not later. Really nice to speak to people that are going through the same thing!*

Some cases were very acute, prompting intervention from moderators

In some cases, the posts users left suggested that they were in a state of desperation, and these users received particular attention from forum users.

> *User: Hey everyone, as the title says, years of gambling addiction and failed attempts at quitting have driven me to desperation, to the point where I literally don't even know who I even am anymore. I feel lost and isolated, confused and depressed, down and out, and yes, as much as I feel ashamed to admit this, I recently seriously contemplated suicide due to losing complete control over my thoughts and actions. I feel so trapped and that I have no way to solve my*

problems. As much as this would be the easy way out however, I simply could not do this to my parents and my sister. I really do not know where to go from where I am

User: Hi man, This was a real post written from the heart of a compulsive gambler - There's not a lot that I can say tbh as you said it all. But what I will say is that the fact that you took the time to share this with us just goes to show how desperate you are to stop this gambling insanity. This is the only word that I can use to describe what life is like in this 'other world'…

In the most serious cases, moderators intervened to provide support. In one case, a user's ambiguous message of goodbye led a moderator to reach out with an offer of help.

User: Just to thank everyone who supported me over the years. Good luck to all of you fighting addiction my Heart and Soul is with you all the way. Thanks to the Forum Admins for the help and to each and every person who took time to read about me and offer me their advice&support. Goodbye and thanks again.

Page Administrator: Hey, if you're struggling, please do give us a call or chat to us on the chat function. Hope you're okay. Forum Admin

However, peer-support is not a replacement for professional, dedicated help

While a number of users posted to the feedback section of the forum with their thanks to the moderating staff and the community in general, there were a number of frustrations raised by users. Perhaps the most serious was a complaint from users about slow reactions to important issues, such as threats of suicide posted by users. As the moderators explained, the forum is not an emergency service, and the scale of the forum – as well as a general lack of resources – restricted the reactivity of moderators in such situations.

Page Administrator: Thanks for your feedback and for pointing out a worrying post. We notice you are frustrated that we did not respond sooner. Just to explain this a little : our forum is not monitored 24/7 by a member of the team, and we are clear in the forum rules that this is the case - it is not a crisis service. Unlike the helpline and chat function, posting on here is not going to generate a response from us straightaway. We would encourage any member feeling suicidal to contact us via the helpline or chat function for one to one crisis response.

This hands off approach also meant that some problematic posts, such as those which were abusive, or even which encouraged gambling – for example with one user sharing his winning gambling strategies – were not rapidly removed.

> *User: I really cant understand why very dangerous, nasty posts are allowed to remain unchecked for days on end. In this week alone i've read posts from people threatening to slash others throats, several posts from a guy trying to sell his foolproof gambling system & again tonight someone else encouraging another vulnerable person to put all his money on a bet & if it loses to then kill himself. You really need to question why your resources are being spent if you can't be bothered to have anybody checking the content from all posters for days and days.*

There are new challenges to gambling regulation

Social media is allowing gambling to be promoted in new ways, and new communities to form, both around gambling and the ceasing of it. Commercial services are often linked to, promoted and discussed, and new kinds of digital currencies have been created, often purchased with conventional currencies.

This problem is one with which regulators worldwide are struggling.[2] The 'grey' area that this kind of social media space represents is posing increasingly urgent questions regarding the limits of regulation and free association, the safeguarding of problem gamblers and the responsibilities of page administrators.

Tipsters have created new areas of betting promotion outside of formal regulation. Tipsters do not themselves handle money, and so are unregulated and have no formal safeguarding responsibilities. However, they create social spaces whose members are united by an interest in gambling, and where betting promotions and offers are routinely and frequently shared.

The use of new digital currencies challenge current definitions of gambling. Users of many online apps do not play for cash prizes, but they are encouraged to pay real money for coins. This raises a definitional question of whether this kind of activity is licensed gambling, or just a game.

Because of the lack of real cash prizes, this kind of gaming is not held to be licensable gambling. According to the Gambling Commission:

> *A number of game developers are providing gambling style games that look and feel like traditional gambling products. These games include online slot style*

---

[2] J Derensky, S Gainsbury, R Gupta, M Ellery, 'Play-for-Fun/Social-Casino Gambling: An Examination of Our Current Knowledge', Manitoba Gambling Research Programme, 2013 (accessed 20/11/2015:https://www.manitobagamblingresearch.com/system/files/private/Full%20Report%20Play%20For%20Fun%20Social%20Casino%20Gambling-%20An%20Examination%20of%20Our%20Current%20Knowledge.pdf)

games […] These games may be free or paid to enter, for example, by paying for extra spins/credits/tokens/chips, but do not offer a cash prize. To date, it has been accepted that winning additional spins/credits/tokens/chips (that can also be acquired by the payment of real money) does not amount to a prize of money or money's worth, which would make it licensable gambling. However, this is untested in the courts and the uncertainty, and associated commercial and regulatory risk, is a useful deterrent to those thinking of pushing the boundary.[3]

Beyond this, there is a wider question of the psychological influence of these apps in the formation and propagation of unhealthy relationships to gambling.

Research has suggested that simulated gambling games appeal to many of the same psychological mechanisms.[4] These apps are widely available, very easy to find, and convenient to use. According to Mark Griffiths, Director of the International Gaming Research Unit at Nottingham Trent University, "One of the biggest predictors of whether people become gamblers is the playing of gambling-type games on free-play sites."[5]

Research is currently being undertaken by the Central Queensland University's Experimental Gambling Research Laboratory into the effects of this type of 'free-to-play' gambling game, and whether they are a 'gateway' to more harmful gambling practices, or if they have a positive influence, providing a replacement for cash gambling.[6]

---

[3] http://www.gamblingcommission.gov.uk/pdf/Social-gaming---January-2015.pdf

[4] J Hilgard, C Engelhardt, B Bartholow, 'Individual differences in motives, preferences, and pathology in video games: the gaming attitudes, motives and experiences of scales', *Frontiers in Psychology*, vol.608 no.4, 2013.

[5] A Bloom, 'Behaviour – Online games can 'hook' children into gambling,' *Times Educational Supplement* (accessed 20/11/2015: https://www.tes.com/article.aspx?storycode=6389543)

[6] J Branco, 'Pokies apps could be a gateway drug or 'the methadone of gambling': researchers,' *Brisbane Times* (accessed: http://www.brisbanetimes.com.au/queensland/pokies-apps-could-be-a-gateway-drug-or-the-methadone-of-gambling-researchers-20150803-giqqbr.html)

PART FOUR: Research Method, Technology and Ethics

This paper combined a very wide array of quantitative and qualitative methods to create a window into gambling life online. The final section provides more detail on the series of research designs, methods and technologies that were applied to produce the findings for this report.

Data Sources

Three different online platforms were studied for this report.

- **Twitter** was the primary focus for the wide-angle study of social media networks and gambling. The platform allows researchers to collect and analyse data from them in a relatively easy and structured manner, particularly with an eye to the network. Large volumes of data was collected using Twitter's 'Application Programming Interface' ('API'). The API is a portal that acts as a technical gatekeeper of the data held by the social media platform. They allow an external computer system to communicate with and acquire information from the social media platform.

- **Facebook:** Facebook is the largest social media platform in the world, and especially important for the creation of communities and groups online. Technically, its data is less accessible in very large scales, and therefore a small number of sample pages were subject to qualitative study within this report.

- **Forums**: Web forums predate the rise of social media, and remain important spaces where digital communities form and function. For this reason, web forums were also subject to qualitative study for this report.

Data

Overall, over eight million separate data points were collected for this research. The data collection strategy progressed through a number of stages.

1. Identify Twitter 'seed accounts' of sources of gambling content. First, analysts identified 877 Twitter accounts that were dedicated to producing content related to gambling. These were split into four categories:

    a. 280 bookmakers and promoters' accounts (29%), including, where possible, the top fifty bookies in the UK that were the official Twitter account of companies that offered gambling as a commercial product.

    b. 572 'Tipsters' (59%), individuals or companies whose primary presence on Twitter was to share betting recommendations and advice across a range of different sports.

    c. 25 gambling journalists (3%), a small number of journalists reporting on sports events from a betting angle.

d. An additional series of supplementary accounts were then added, to study the relative scale of these networks within the wider the wider gambling community These were 60 'Gambling Help' accounts: accounts specifically dedicated to offering advice and help with gambling-related problem, including addiction and problematic gambling habits.

2. Collect the 1,450,000 Tweets sent by, retweeted by, or mentioning the seed accounts over the 21st of September to 16 October 2016, sent by 387,000 different accounts. Once the seed accounts had been identified, all Tweets they sent were then collected to study the content they produced on Twitter.

3. Collect the 7,100,000 Twitter followers of both the seed and supplementary accounts. A user on Twitter has the option to *follow* another account on Twitter, meaning they receive messages from that account. Following an account is indicative of an interest in what the account is saying, although we do not assume that following a gambling account implies the user is a gambler. Analysts used Twitter's API to collect the details of any user following one of our seed accounts. The number of followers each account has varied greatly; from a couple of hundred up to hundreds of thousands in the case of the biggest bookmakers. This resulted in one of the biggest data collections Demos has ever undertaken.

4. Lastly, for the qualitative analysis:

   a. The first 200 posts from users from three selected Facebook tipster pages.

   b. The first 50 posts from three different areas of a gambling care forum: the 'introductions', 'overcoming problem gambling' and 'site feedback' sections.

   c. The first 200 posts from the Facebook community page of a social media gambling application.

Quantitative Analysis

Understanding social data on scale with which it is routinely produced must involve automated and computational techniques. Two forms of automated analysis was conducted:

Finding networks and communities: For Part One of the report, researchers built a window of the landscape of gambling on Twitter: an overall view of how different communities had formed, how they overlapped, in what way they were distinctive, and the lines of interaction between one another and the bookies. In doing so, we can understand the different experiences of gambling online, and spot whether any concentrations of more intensive (and potentially harmful) gambling-related behaviour exists. This included the use of:

- **Network expansion algorithms**: These are algorithms that build networks of, in this case Twitter accounts, on the basis of how they are linked together. Accounts that follow each other, or that follow an overlapping series of other accounts, are closer to each other in the network. Accounts that do not follow each other, and have little or no accounts in common that they do follow, appear further apart. The specific algorithm used is called 'Force Atlas Expansion 2'.[7] Due to the fact that users see Tweets sent by accounts that they follow, this allowed researchers to create a network that showed how information travels throughout the network of people that follow gambling-related accounts.

- **Community detection algorithms:** These are algorithms that attempt to detect smaller communities of people within wider networks on the basis of a set of shared characteristics that these users have. In our case, the characteristic were the accounts that each user followed, and a set of 'modularity' algorithms were used to identify distinct communities that followed each other, and a set of common key accounts.[8]

Analysing content and conversations: Primarily for Part Two of the report, researchers also analysed the types of messages flowing through online gambling communities, both from commercial sources of gambling content, and their customers. Content analysis looked at what messages were being sent by users and by bookies, and in what tone those messages were worded. This involved:

1. **Bespoke Natural Language Processing Algorithms:** These are bespoke models built using software created by CASM, Method 52. They were trained on the gambling dataset, as the context and language of gambling was integral to judging the accuracy of the classifier. In order to find those users who had taken to Twitter to express anger at a bookmaker, for example, an algorithm was trained from scratch to identify these expressions, as the language of anger in a gambling context is distinctive. See below for more detail on natural language processing algorithms.

2. **Latent natural language processing algorithms:** For analysis that does not rely on a specific contextual understanding of the text of a Tweet, researchers were able to apply pre-built algorithms to the dataset. The gender of a user (Male, Female or 'Institution') and the geographic location of a user are not context-dependent.

3. Finally, analysis was performed on the metadata. This did not require algorithmic analysis, rather aggregation of raw Twitter data. This allowed researchers to

---

[7] For more information on this algorithm, see Jacomy M, Venturini T, Heymann S, Bastian M (2014) ForceAtlas2, a Continuous Graph Layout Algorithm for Handy Network Visualization Designed for the Gephi Software. PLoS ONE 9(6): e98679. doi:10.1371/journal.pone.0098679

[8] For more information on modularity algorithms, see 'How can Modularity help in Network Analysis', http://stackoverflow.com/questions/21814235/how-can-modularity-help-in-network-analysis

further characterise behaviour, such as the number of tweets users sent as a measure of how active they were during the collection period.

Technology

To conduct the quantitative analysis, three technology platforms were used:

- **Method52:** This is a web-hosted software platform, developed by the project team and especially technologists at the University of Sussex and CASM Consulting LLP. It is designed to allow non-technical analysts to collect, organise and understand very large datasets, especially those that contain text at scales that are too large to manually read. Method52 was used to create and use 'natural language processing classifiers'. A long-established sub-field of artificial intelligence research, natural language processing combines approaches developed in the fields of computer science, applied mathematics, and linguistics. Classifiers are algorithms that are trained to automatically place tweets in one of a number of pre-defined categories of meaning. Method52 uses NLP technology to allow the researcher to rapidly construct bespoke classifiers to sort defined bodies of tweets into categories (defined by the analyst).

- **Qlikview:** Qlikview is a data analytics and visualisation platform that allows the construction of bespoke visualisation dashboards as windows into complex, multivariate datasets. Tweets analysed and categorised by Method52 were then transferred into Qlik to allow patterns, trends and attributes of the data to be visually discovered. The data was presented through a series of interactive charts, that allowed non-technical analysts the ability to inspect, filter and understand the Twitter data across a range of different fields, including when the tweets were sent, by whom, where, and any additional analysis conducted by Method52.

- **Gephi:** is an open-source visualisation platform that allowed the creation and visualisation of network graphs. It was the primary technology used to understand the topography of the gambling ecosystem on Twitter once the analytics work, conducted via Method52 and Qlikview, had been completed.

These three platforms were combined to allow the quantitative datasets to be analysed. Method52 allowed the training of algorithms to split and categorise tweets, Qlik allowed the analytical outcomes of Method52 to be visualised alongside other pieces of information about the tweets, and Gephi allowed the location of every account within the wider network to be visualised and understood.

Natural Language processing algorithms

Building algorithms to categorise and separate tweets formed an important part of the research method for this paper. This responds to a general challenge of social media research: the data that is routinely produced and collected is too large to be manually read. Natural language processing classifiers provide an analytical window into these kinds of datasets. They are trained by analysts on a given dataset to recognise the linguistic difference between different kinds of (in this case) tweet.

Classifiers were trained to work together in 'architectures' - where a number of classifiers filter Tweets before passing a subset of these Tweets into another classifier on the basis of a decision the classifier makes regarding its meaning (fig XII).

Figure XII - Classifier Tree showing Resulting Tweet Numbers
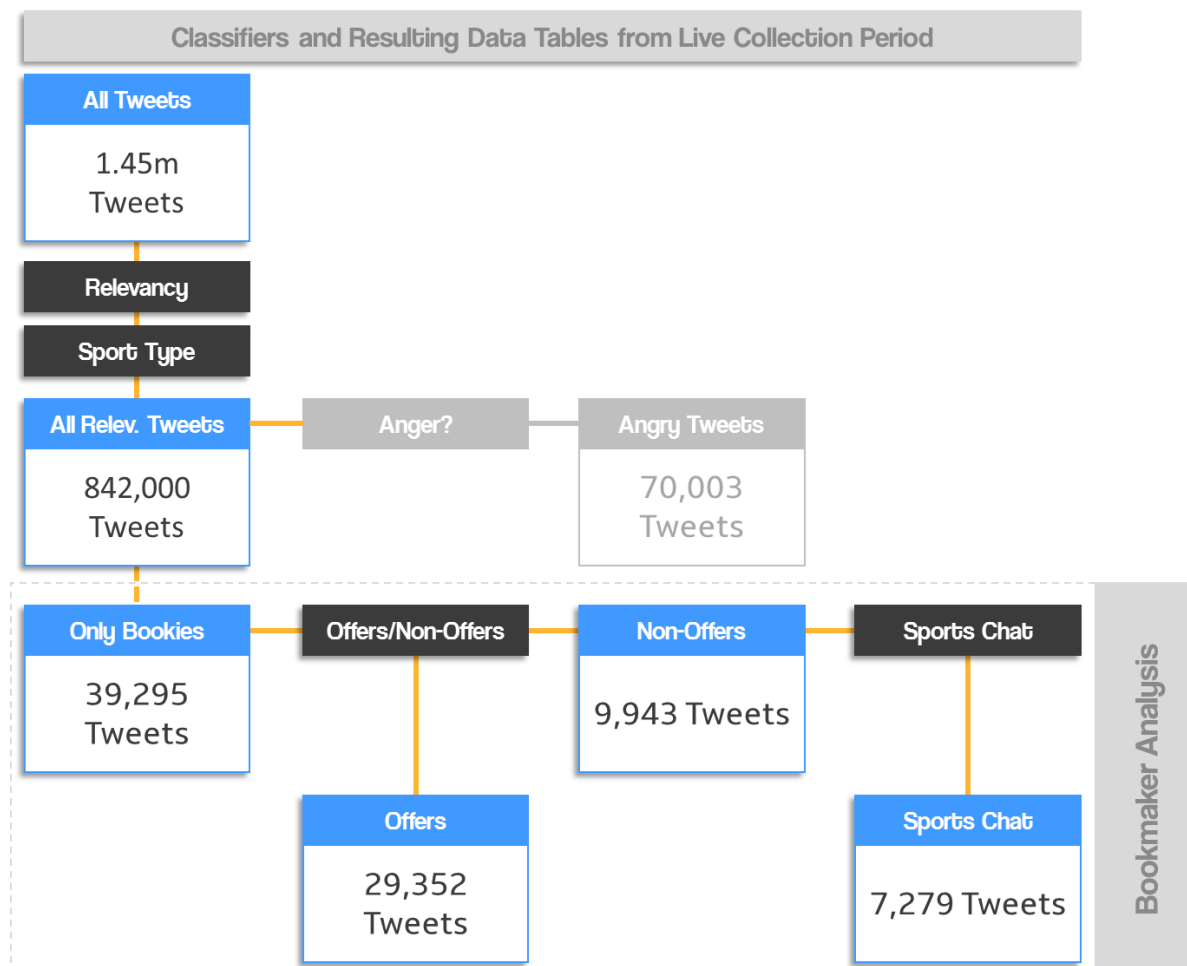
Relevancy: The first step was to filter the data for relevancy to sport and betting and remove tweets completely unrelated to the research. Coral, for instance, the name of a popular bookmaker in the UK, diluted our dataset with references to jewellery and reefs. An algorithm was trained to strip this data out. This reduced our dataset to 842,000 tweets from 277,000 unique users.

Sport Type: The second algorithm, applied to all relevant tweets in the collection, was designed to identify which sports were being discussed in a tweet.

'Only bookies': Identified only those Tweets sent from commercial bookmakers, rather than tipsters or gambling journalists.

Offers/non-offers: Is an algorithm that separated tweets from bookmakers that were an explicit gambling offers and to advertise odds, from those that were not.

'Sports chat': Is the algorithm that separated tweets from that spoke about sport - reporting news, results of big games and commentary on the world of sport - from those that did not.

Qualitative Analysis

A coding framework was applied to each piece of content identified for qualitative analysis. Each comment was coded for:

- **Sentiment**: either 'positive', 'negative' or 'neutral'
- **Tone**: either 'angry' (aggressive words, swearing or aggressive imagery) or 'calm'
- In relevant cases, **Support:** 'supportive' towards another user, 'confrontational' or 'neither'.

Comments and posts were also sorted into a range of thematic categories based on the subject matter they concerned. These categories were defined in an iterative process as the comments were analysed, in order to ensure the relevance of the categories defined. Typical thematic categories included Gambling Wins, Problem Gambling Evidence and so on. Finally, posts made by Facebook users were categorised by gender, based on their account names.

In both the analysis of the Facebook pages and the website forums, this structured form of content analysis was accompanied by more general, unstructured observations regarding the overall content of the websites.

Ethics

Conducting research on social media data presents new ethical challenges for researchers. It is a new field of research and there are no widely accepted protocols and approaches for ethical social media research.[9] The proactive development of ethical guidelines and the research of public attitudes towards social media research has been an important part of Demos' work. The latest paper specifically dedicated to this topic is #socialethics, published November 2015.[10]

The Economic and Social Research Council has 6 principles of ethical research.[11] After reviewing these principles, two were judged to be important to consider:

1) Was informed consent necessary?

Informed consent is widely understood to be required in any occasion of 'personal data' use when research subjects have an expectation of privacy. Determining the reasonable expectation of privacy someone might have is important in both offline and online research contexts. How to do this is not simple. The individual must (a) expect the action to be private and this expectation must (b) be societally accepted as objectively reasonable.
Within this frame, an important determinant of an individual's expectation of privacy on social media is by reference to whether the individual has made any explicit effort or decision in order to ensure that third parties cannot access this information.

Applying these two tests to the data sources used in this report, it is reasonable to conclude that there is a very low expectation of privacy. (This is not true of all social networks). All of the digital spaces researched were ones where anyone could join, moreover, no space was researched that required either a login or password (suggesting that the person might be a member of the community). Societal expectation of privacy on public social media is low given, for instance, recent court cases that have determined Tweets are closely analogous to acts of publishing, and can thus also be prosecuted under laws governing public communications, including libel.

---

[9] Some useful recent guidance has been issued by the *New Social Media New Social Science* academic working group, which recognises that a number of outstanding ethical questions for research of this kind remain. See Salmonds, J (2014) New Social Media New Social Science and New Ethical Issues.

[10] Harry Evans, Steve Ginnis, Jamie Bartlett, #socialethics, Demos and Ipsos MORI (November 2015). Available at https://www.ipsos-mori.com/Assets/Docs/Publications/im-demos-social-ethics-in-social-media-research-summary.pdf

[11] Economic and Social Research Council, Framework for Research Ethics, http://www.esrc.ac.uk/about-esrc/information/research-ethics.aspx

2) Are there any possible harms to individual participants entailed in this form of research?

The chief burden on researchers is to make sure they are not causing any likely harm to the people being researched, especially if those people have not given a clear, informed, express consent.

In order to mitigate the possibility of harm to participants, no individual was named in the research. For the research on Twitter, the possibility of individual harm was judged to be minimal, given that the methodology concentrated on the aggregated analysis of large bodies of data to find overall patterns and outcomes. A small number of large, institutional and commercial accounts were named - but even in cases where their large numbers of followers meant that their expectation of privacy is even lower than what would generally be understood to be the case on a public and open social media platform.

It was judged that individual harm to participants was possible through quoting individual messages on social media - whether Tweets, Facebook posts or forum messages. This was especially the case if the message contained information that was sensitive - such as the sender's struggle with gambling-related problems. For other users, simply having their details published might be distressing or upsetting, especially if used in a context they had not consented to. There is material value to the research in directly quoting material in social research. As a general principle, it is considered good practice where possible to quote research subjects directly and faithfully. This is because a) it is more accurate as a research method and b) it allows other researchers to more closely scrutinise and potentially replicate your research work. However, in this case, it was decided to 'cloak' direct quotes, and retain the essence of the meaning whilst changing small parts of the text so that no one can be easily identified.

Demos – Licence to Publish

The work (as defined below) is provided under the terms of this licence ('licence'). The work is protected by copyright and/or other applicable law. Any use of the work other than as authorized under this licence is prohibited. By exercising any rights to the work provided here, you accept and agree to be bound by the terms of this licence. Demos grants you the rights contained here in consideration of your acceptance of such terms and conditions.

1   Definitions

a   'Collective Work' means a work, such as a periodical issue, anthology or encyclopedia, in which the Work in its entirety in unmodified form, along with a number of other contributions, constituting separate and independent works in themselves, are assembled into a collective whole. A work that constitutes a Collective Work will not be considered a Derivative Work (as defined below) for the purposes of this Licence.
b   'Derivative Work' means a work based upon the Work or upon the Work and other pre-existing works, such as a musical arrangement, dramatization, fictionalization, motion picture version, sound recording, art reproduction, abridgment, condensation, or any other form in which the Work may be recast, transformed, or adapted, except that a work that constitutes a Collective Work or a translation from English into another language will not be considered a Derivative Work for the purpose of this Licence.
c   'Licensor' means the individual or entity that offers the Work under the terms of this Licence.
d   'Original Author' means the individual or entity who created the Work.
e   'Work' means the copyrightable work of authorship offered under the terms of this Licence.
f   'You' means an individual or entity exercising rights under this Licence who has not previously violated the terms of this Licence with respect to the Work,or who has received express permission from Demos to exercise rights under this Licence despite a previous violation.

2   Fair Use Rights

Nothing in this licence is intended to reduce, limit, or restrict any rights arising from fair use, first sale or other limitations on the exclusive rights of the copyright owner under copyright law or other applicable laws.

3   Licence Grant

Subject to the terms and conditions of this Licence, Licensor hereby grants You a worldwide, royalty-free, non-exclusive,perpetual (for the duration of the applicable copyright) licence to exercise the rights in the Work as stated below:
a   to reproduce the Work, to incorporate the Work into one or more Collective Works, and to reproduce the Work as incorporated in the Collective Works;
b   to distribute copies or phonorecords of, display publicly,perform publicly, and perform publicly by means of a digital audio transmission the Work including as incorporated in Collective Works; The above rights may be exercised in all media and formats whether now known or hereafter devised.The above rights include the right to make such modifications as are technically necessary to exercise the rights in other media and formats. All rights not expressly granted by Licensor are hereby reserved.

4   Restrictions

The licence granted in Section 3 above is expressly made subject to and limited   by the following restrictions:
a   You may distribute,publicly display, publicly perform, or publicly digitally perform the Work only under the terms of this Licence, and You must include a copy of, or the Uniform Resource Identifier for, this Licence with every copy or phonorecord of the Work You distribute, publicly display,publicly perform, or publicly digitally perform.You may not offer or impose any terms on the Work that alter or restrict the terms of this Licence or the recipients' exercise of the rights granted hereunder.You may not sublicence the Work.You must keep intact all notices that refer to this Licence and to the disclaimer of warranties.You may not distribute, publicly display, publicly perform, or publicly digitally perform the Work with any technological measures that control access or use of the Work in a manner inconsistent with the terms of this Licence Agreement.The above applies to the Work as incorporated in a Collective Work, but this does not require the Collective Work apart from the Work itself to be made subject to the terms of this Licence. If You create a Collective Work, upon notice from any Licencor You must, to the extent practicable, remove from the Collective Work any reference to such Licensor or the Original Author, as requested.
b   You may not exercise any of the rights granted to You in Section 3 above in any manner that is primarily intended for or directed toward commercial advantage or private monetary compensation.The exchange of the Work for other copyrighted works by means of digital filesharing or otherwise shall not be considered to be intended for or directed toward commercial advantage or private monetary compensation, provided there is no payment of any monetary compensation in connection with the exchange of copyrighted works.

C   If you distribute, publicly display, publicly perform, or publicly digitally perform the Work or any Collective Works,You must keep intact all copyright notices for the Work and give the Original Author credit reasonable to the medium or means You are utilizing by conveying the name (or pseudonym if applicable) of the Original Author if supplied; the title of the Work if supplied. Such credit may be implemented in any reasonable manner; provided, however, that in the case of a Collective Work, at a minimum such credit will appear where any other comparable authorship credit appears and in a manner at least as prominent as such other comparable authorship credit.

5   Representations, Warranties and Disclaimer

A   By offering the Work for public release under this Licence, Licensor represents and warrants that, to the best of Licensor's knowledge after reasonable inquiry:

i   Licensor has secured all rights in the Work necessary to grant the licence rights hereunder and to permit the lawful exercise of the rights granted hereunder without You having any obligation to pay any royalties, compulsory licence fees, residuals or any other payments;

ii   The Work does not infringe the copyright, trademark, publicity rights, common law rights or any other right of any third party or constitute defamation, invasion of privacy or other tortious injury to any third party.

B   except as expressly stated in this licence or otherwise agreed in writing or required by applicable law,the work is licenced on an 'as is'basis,without warranties of any kind, either express or implied including,without limitation,any warranties regarding the contents or accuracy of the work.

6   Limitation on Liability

Except to the extent required by applicable law, and except for damages arising from liability to a third party resulting from breach of the warranties in section 5, in no event will licensor be liable to you on any legal theory for any special, incidental,consequential, punitive or exemplary damages arising out of this licence or the use of the work, even if licensor has been advised of the possibility of such damages.

7   Termination

A   This Licence and the rights granted hereunder will terminate automatically upon any breach by You of the terms of this Licence. Individuals or entities who have received Collective Works from You under this Licence,however, will not have their licences terminated provided such individuals or entities remain in full compliance with those licences. Sections 1, 2, 5, 6, 7, and 8 will survive any termination of this Licence.

B   Subject to the above terms and conditions, the licence granted here is perpetual (for the duration of the applicable copyright in the Work). Notwithstanding the above, Licensor reserves the right to release the Work under different licence terms or to stop distributing the Work at any time; provided, however that any such election will not serve to withdraw this Licence (or any other licence that has been, or is required to be, granted under the terms of this Licence), and this Licence will continue in full force and effect unless terminated as stated above.

8   Miscellaneous

A   Each time You distribute or publicly digitally perform the Work or a Collective Work, Demos offers to the recipient a licence to the Work on the same terms and conditions as the licence granted to You under this Licence.

B   If any provision of this Licence is invalid or unenforceable under applicable law, it shall not affect the validity or enforceability of the remainder of the terms of this Licence, and without further action by the parties to this agreement, such provision shall be reformed to the minimum extent necessary to make such provision valid and enforceable.

C   No term or provision of this Licence shall be deemed waived and no breach consented to unless such waiver or consent shall be in writing and signed by the party to be charged with such waiver or consent.

D   This Licence constitutes the entire agreement between the parties with respect to the Work licensed here.There are no understandings, agreements or representations with respect to the Work not specified here. Licensor shall not be bound by any additional provisions that may appear in any communication from You.This Licence may not be modified without the mutual written agreement of Demos and You.