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Twitter: Expressions of the Whole Self

An investigation into user appropriation of a web-based communications platform

Edward Mischaud
MSc in Politics and Communication

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ABSTRACT

Twitter.com is a web-based communications platform combining Instant Messaging and SMS that enables subscribers to its service to send short 'status updates' to other people. Beyond its hybrid platform, Twitter's unique feature is its overarching question "What are you doing?", which acts as a 'guidance note' on how users should phrase their postings. Although it is a 'soft restriction', meaning that other formats and styles are possible, this study investigates the extent to which users of Twitter are responding to the question. In the case that people are going beyond "What are you doing?", are there commonalities in the 'other' uses thereof? To develop this premise, a content analysis of 60 users' postings was conducted to seek for deviations and to categorise them accordingly. To acquire a better understanding of why people use Twitter to disseminate messages, several users participated in a questionnaire to provide insight into the platform. Based on the content analysis' results, it is possible to conclude that the majority of Twitter users observed are appropriating the platform beyond "What are you doing?". The findings are discussed within a theoretical framework exploring the role of society in shaping technology and the influence a technology's design may have on how it is used.

1. Introduction

Mobile phones and computer-mediated communication platforms are increasing their presence and significance in the lives of hundreds of millions of people globally. From sharing tedious and unremarkable details of everyday life to alerting people to (our) breaking news, the uses of these communication technologies are as diverse as the people who rely on them to be 'connected'.

While there are numerous platforms and devices to analyse empirically and theoretically, those technologies that evade time and space, one application has surfaced in the past year that calls for academic exploration. Combining Instant Messaging (IM) and mobile phone text messaging, the phenomenon is Twitter – a web-based platform that enables subscribers to its free service to disseminate short messages by way of the web, IM applications (MSN Messenger, Yahoo!), or a mobile handset. In just over a year's time it has generated a mass following and has captured the attention of journalists, communications specialists, investors, and others seeking to understand why people use it to keep others informed of their daily affairs.

Twitter's attraction appears to be its simple user interface and its message length restriction that require messages to be 140-characters or less, allowing users to fire off brief messages in an instant. Although these characteristics are novel, Twitter's defining feature is its priming question "What are you doing?". Situated prominently at the top of the Twitter web site, this mundane, if not whimsical query serves as the platform's *raison d'être*; a starting point designed by Twitter's creators to initiate and direct communication within the platform and beyond.

This paper's overarching objective is to critically assess this communications phenomenon, as Twitter affords a unique opportunity to analyse the manner in which people use and adapt a new communications technology. From a research perspective, interest lies in exploring the extent to which users of this platform respond to the question "What are you doing?". If they are not responding, are they rejecting the application's intended purpose to achieve other

means? Seen in this light, a valid query is to try and understand what Twitter is being used for and if users are appropriating it to facilitate other activities.

The research to be presented has been framed to investigate the appropriation of technology and to gauge an understanding of the ways in which we integrate and manipulate technology into our lives. Of interest theoretically is the role of society in shaping and constructing the technologies that surround us. Two theories, the Social Shaping of Technology (SST) and Social Construction of Technology (SCOT), will be explored within the framework of this study. The latter is of particular interest as it has led to the development of 'interpretative flexibility', that a technology, depending on who is using it, has many readings, uses, and implications that largely determine its function (MacKenzie & Wajcman, 1999: 21, 113). Both of these theories also relate to the work of Langdon Winner and his efforts to dispel the notion that technologies are themselves neutral, arguing instead that some technologies can be inherently political and capable of influencing and shaping society (Ibid: 4-5).

Empirically, this paper aims to determine the level of malleability of a technology that has several built-in guidelines – an overarching question in Twitter's case. A content analysis of users' postings has been employed to determine if appropriation is occurring and to uncover commonalities, if any, in the postings that deviate from the question. Viewpoints from Twitter users have also been gathered by way of a questionnaire that offer insight into why and how people use the platform. These two methods represent the empirical basis of this study and serve as a mechanism to test against its query of user appropriation.

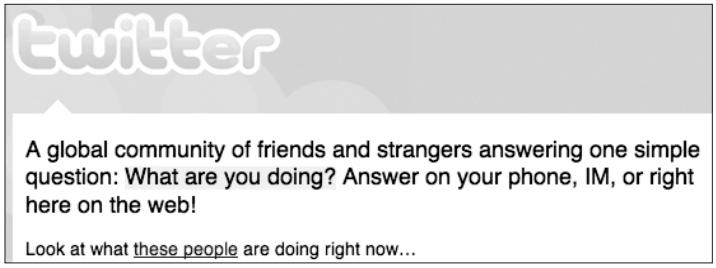
Defining Twitter

What is "Twitter"? The *New Oxford Dictionary* presents two definitions: "twitter (verb): (of a bird) give a call consisting of repeated light tremulous sounds; talk in a light, high-pitched voice: *old ladies in the congregation twittered*; talk rapidly and at length in an idle or trivial way: *he twittered on about buying a new workshop*" (Pearsall, 1998: 2001). Put simply, and

to best describe the platform that is this study's focus, to twitter is to engage in short intervals of communication.

Fig. 1 – **Twitter's header**

SOURCE: Twitter.com, July 2007



Twitter's founders captured this abstraction in early 2006 and by mid-year established Twitter.com as a free service to enable users to send out 'status updates' to their contacts (Glaser, 2007). Fusing Instant Messaging (IM) and mobile phone text messaging, or Short Message Service (SMS), Twitter's user interface is accessible across several platforms and third-party applications. From Twitter.com and IM applications (AOL, MSN Messenger, Yahoo!), to SMS and plug-ins embedded in popular social networking sites (SNSs) such as Facebook and MySpace, subscribers to Twitter can select the channel(s) of dissemination that best match their needs (Ibid.; Wikipedia, 2007a). Users can send status updates to "Friends" and "Followers", Twitter-speak for people in a person's network that are 'known' and 'unknown' (Pontin, 2007) or to Twitter's 'public timeline', an electronic pinup board showcasing a constant stream of users' postings (Codel, 2006).

Beyond Twitter's technical setup, its defining features are its two 'constraints': an overarching question "What are you doing?" (Fig. 1) and a 140-character or less response limit; similar to the 160 limit for a standard SMS (Glaser, 2007). For Twitter's creators, the question and the character limit are central to its concept of sending messages to people without having to direct them to the site of the message's origin (Jones, 2007); in fact, Twitter's web page header states it is a "simple question" that "a global community" is answering.

Twitter's success has resulted in the adoption of a new term, "micro-blogging", to describe the communication-style that thrives there and on other sites (Codel, 2006; Glaser, 2007). Since its debut in mid-2006, several similar services have emerged, from a French site called Frazr.fr to Wamadu.de in Germany (Diaz, 2007), and a mash-up API (application programming interface) called Twittervision.com (Fig. 2) that deploys Google Maps to add a person's location to the "What are you doing?" mix (Naughton, 2007).

Fig. 2 – **Twittervision.com**

SOURCE: Twittervision,com, July 2007

Who is 'Twittering'?

Although Twitter, Inc. refuses to publish its number of users, it has stated in one article that its user base doubles every three to four weeks (Glaser, 2007), while a second report estimates the total at several hundred thousand (Stone & Richtel, 2007). The viral spread of Twitter has no doubt been fuelled by two prominent accolades. Its being voted in March 2007 "Best of the Web" at the South by Southwest multimedia and music festival in Texas (Johnson, 2007), an Oscars-like event for the American technorati, and being included in TIME Magazine's "50 Best Websites 2007" (Time.com, 2007).

Twitter has also received extensive media coverage thanks to its adoption by American presidential candidates John Edwards and Barack Obama who have integrated Twitter in their campaigns for the Democratic party presidential primaries in 2008. Both use the platform to keep their 'Followers' abreast of their whereabouts and upcoming appearances (Diaz, 2007). In addition to presidential hopefuls, the platform is employed by news organizations, e.g. the BBC and CNN, to share breaking stories and by corporations, e.g.

Banco Santander and JetBlue Airways, to promote their services. The recent LiveEarth concert also tapped Twitter as a resource to keep people informed[1].

More challenging to gauge are the individuals who use the platform. Some estimates on demographics have surfaced in media articles that portray a picture of 'early adopters', or young, savvy technophiles (Kang & Vranica, 2007) and influential bloggers (Twittown.com, 2007); those who typically embrace new technology first. (In the results section, data complied on the users sampled for this study's empirical element will provide a rough, albeit informative analysis.)

With popularity comes critique however. One technology commentator said Twitter is the poster child of a new 'micro trend' that has reduced the social networking tool "to single sentences, pictures and the most everyday emotions and events" (Nuttall, 2007). Others have raised concerns over privacy (Leader, 2007) and its attack on "our powers of concentration" (Pontin, 2007). Regardless of what is claimed, the enthusiasm surrounding Twitter, and the micro-blogging trend it helped start, appears not to be disappearing anytime soon. The relative ease of staying in contact through the use of a one-to-many application makes Twitter one of the most popular and fastest growing communication platforms online (Pontin, 2007).

[1] URLs (in order presented): http://twitter.com/johnedwards, /barackobama, /bbcnews, /cnn, /bancosantander, /jetblue, /liveearth070707.

2. Framing Twitter: theoretical overview

The aim of my research is to approach Twitter from a user appropriation perspective to understand how people use and adapt technology. Arriving at this theoretical juncture was challenging as Twitter and similar platforms have yet to attract much academic interest and therefore lack an extended field of research to provide guidance. However, as I am interested in the extent to which users of Twitter respond to the question "What are you doing?", applying a theory that elaborates upon the role of people in appropriating technology is apt for exploration. In realizing the dyadic nature this debate presents, that technology is far from neutral, I am also intrigued by a technology's design and its possible influence on usability. For these reasons, the Social Shaping of Technology (SST) and the Social Construction of Technology (SCOT) theories, variants of social constructivism, are placed at the centre of this study. A second, correlated conjecture is viewing technology as a 'political artifact', using Langdon Winner's pioneering work as my primary reference. Taken together, this theoretical proposition represents the conceptual framework of my study and the basis for my empirical work.

Determining the site of influence

In the early 1990s, Germany's largest retail bank Deutsche Bank introduced an electronic payment system at its ATM terminals enabling customers to conveniently pay bills and transfer money to other accounts by themselves. As part of this enhancement, customers were provided with a blank field to type in a reference number, date, or any other instruction to facilitate processing on the receiving end. After several months of successful implementation, bank officials realised that some customers had modified the instructions option for means the bank had not anticipated. Customers were using it, together with their payment or transfer, to send messages to family members, friends, and business partners. The blank field, it seems, presented customers with a "private and discrete" channel to reminisce about a memorable experience, to share a joke, or to simply say "Hello" (Smitall, 2007).

A second example of user appropriation is text messaging, or, what is commonly known in its abbreviated form, SMS. In contrast to its ubiquitous use today SMS was not initially slotted for commercial purposes. Instead, its European developers viewed text messaging as part of the wider GSM mobile telephony network, an "add-on" among many possible services. The developers behind GSM classified SMS as "a machine-to-person service" that would alert a mobile network in the event of an emergency (Trosby, 2004). Fast-forward nearly two decades and text messaging has become an integral part of personal communication for hundreds of millions of people worldwide, in developed and developing countries alike (Wikipedia, 2007b).

These anecdotes exemplify the manner in which a technology's intended design can collide with a user's interpretation of what the technology is for, or once put within reach of people, as in the case of text messaging, unleash a new functionality that is adopted in a cult-like fashion. Most importantly, the examples provide a basis to critically assess some of the long-standing theories that reflect upon technology and society.

Technology and society: an amorphous relationship?

While there appears to be a common dismissal among most scholars of the once dominant theory of technological determinism, that technology shapes society and is not "reciprocally influenced" (Mackay & Gillespie, 1992: 686), this was not always the case. For decades many scholars viewed the study of technology and society as separate spheres and most profoundly considered technological change independent of other forces at play. An attitude prevailed that situated society as a passive element in technological advancement and blatantly ignored its shaping force (Ibid.). As highlighted by MacKenzie and Wajcman in their seminal works on this subject, technological determinism focuses energy on how society should *adapt* to technological change and not how it can *shape* it (1999: 5). Consequently, they claim, such a stance removes discussion about technology, a "vital aspect of how we live", from public discourse (Ibid.). In arguing against technological determinism as a theory of technology, MacKenzie and Wajcman propose a quasi-macro stance that gives credence to the innate role of society in shaping technology.

The Social Shaping of Technology (SST)

The SST approach posits that in technological development, and society to a greater extent, there exists no single controlling and shaping force (Mackay & Gillespie, 1992: 686). SST theory dispels an absolute site of power, especially from dominant producers, arguing instead that influence and control is omni-directional (MacKenzie & Wajcman, 1999: 16); one can link to Giddens (1979: 6, 149) who accepted power as a two-way relationship and claimed that even subordinate actors in a social relationship hold influence by mere presence. Also central to SST is social constructivism, an overarching theory that breaks technology down to its etymological foundation. It accepts that technological goods are produced by way of 'knowledge' which is embedded in society. Thus, adherents of this approach operate within a framework in which technology is socially constructed (Mackay & Gillespie, 1992: 686).

An influential component of social constructivism is *agency* – the instrumentality of social actors in defining a technology's mode of appropriation. In SST, agents – people – can operate under a form of resistance and reposition a 'closed' technological device for broader use or domestication. An explicit example is the personal computer. Paul Ceruzzi's essay on the invention of personal computing underlines the role of agency in shaping technology (MacKenzie & Wajcman, 1999: 16-17). Ceruzzi contends that the domestication of the personal computer was not due solely to advances in semiconductors but efforts "by a group of actors to effect a social transformation of computing" (Ibid.: 64). The development of software to "bring the novice on board" (Ibid.: 81), the introduction of peripherals (keyboards, visual displays, etc.), and the possibility to purchase a user-friendly system for the home, all at the beginning of the 1980s, were conscious actions by a group of developers to shift computers from its previous territory of military and corporate use to that of the individual (Ibid.: 17, 81). It is crucial to state, however, that private and corporate interests also fuelled the development of the personal computer, namely many Silicon Valley pioneers such as Microsoft's Bill Gates and Apple's Steve Jobs (Ibid.: 17, 81). As illustrated by MacKenzie and Wajcman (1999: 17), "[p]ersonal computing was indeed socially shaped, but

no one actor determined the shape it was to take, and the outcome was no simple reflection of an existing distribution of power".

Paradoxically, a shortcoming of SST theory is the impossibility of arriving at a clear delineation between agency and technology; it strives on its amorphous state. Like technological determinism, SST does not permit elaboration upon the effect neither of agency in reshaping or remixing a technology after its initial creation or widespread appropriation (Mackay & Gillespie, 1992: 694) nor of how a technology's inherent design may be fundamentally political.

The Social Construction of Technology (SCOT)

A slightly contrasting theory to SST is SCOT. Developed in the 1980s by Wiebe Bijker and Trevor Pinch, SCOT differentiates from social shaping by placing emphasis on users as the source of development and meaning for a particular technology (Kline & Pinch, 1999: 113). Whereas SST theory avoids direct causality in either direction, SCOT sets social groups at the site of influence and claims that these groupings, be it engineers, consumers, and so on, determine how a technology functions or "works" (MacKenzie & Wajcman, 1999: 22). As part of the SCOT theory, Bijker and Pinch put forward the idea of "interpretative flexibility", which suggests that varying social groups can have different understandings and readings of technology (Ibid.: 21).

This notion has similarities to discourses in media studies surrounding theories of dominant ideology and in particular analyses of cultural goods in the mass entertainment industry. John Fiske in *Television culture* (1987) argues that popular television programmes are 'read' by viewers as open texts and full of meanings, pleasures, and social identities. In contrast to the dominant ideology thesis, he contends, 'subordinate' consumers are not drones at the whim of multinational conglomerates. Instead they determine, to a large degree, what the capitalist entertainment industries produce, as corporate revenue is linked to advertising, and commercials to viewership (309-326). Nevertheless, the comparison stops here between the interpretative flexibility found in SCOT and attempts to extend it to mass entertainment.

Bijker and Pinch indicate that interpretative flexibility has an end point at which closure and stabilization occur, resulting in mass appropriation or standardisation (Kline & Pinch, 1999: 113-114). Arguably, in the context promulgated by Fiske, popular television programming by definition typically reaches the site of mass consumption in a relatively short period unlike a technology's longer timeframe to achieve a similar point.

At the same time that interpretative flexibility is SCOT's trademark, it also represents where this theory partially fails. As with the theory of social shaping, SCOT does not account for a technology to be reopened by different social groups, e.g. minority groups, once it has been 'closed' (Ibid.: 114). The authors of the theory admit that this oversight is a profound weakness (Ibid.). A second misgiving is the absence of any reference to the role played by structure and power in the process of technological development (Ibid.; MacKenzie & Wajcman, 1999: 22). By focusing entirely on the user, Bijker and Pinch ignore "the only valid aspect of technology determinism: the influence of technology on social relations" (MacKenzie & Wajcman, 1999: 23). Inconsistently as it reads, the point is just: technology can be 'inherently political'.

Understanding 'inherently political technologies'

In *Do artifacts have politics?* Winner encourages his readers to delve below a technology's surface to reveal its political character; in contrast to the neutrality thesis, some technologies are designed with political motives, either consciously or unconsciously (MacKenzie & Wajcman, 1999: 4; Winner, 1985: 26). Unmistakably controversial at the time it was published in 1980, Winner's essay continues to be applicable because it encourages users and creators of technology to question how design can affect appropriation.

Winner framed his thesis around two core arguments. First, as stated above, technologies can 'open' or 'close' social options, or, as phrased by the author, "contain possibilities for many different ways of ordering human activity" (1985: 30). In this point, Winner posits that 'we' (society) choose technologies to influence how we carry out our lives in an organised, preferably 'chaos-free' manner. For Winner, being cognisant of this aspect of technological

design is akin to knowing how 'legislative acts' construct social order and should therefore be treated with the same consequential regard, especially in building public goods, e.g. transportation, parks, etc.

To better grasp his theory, Winner provides the infamous example of American public works architect Robert Moses who for a period of fifty years was the "master builder" of New York State's highways, bridges, and green spaces. Moses was notorious for designing public infrastructure that were 'technical arrangements of social order' (Ibid.: 28). An extreme case is his grid of some 200 overpasses on Long Island, NY, engineered so low that only automobiles could pass. Winner argues that Moses designed the overpasses to "achieve a particular social effect", which, he contends, was to maintain his "social-class bias and racial prejudice" against African Americans. His highway system all but guaranteed that poor, urban dwellers, and users of public transport, would be unable to visit its popular beaches and parks, facilities frequented by "automobile-owning whites of 'upper' and 'comfortable middle classes'" (Ibid.). In sum, Moses' efforts solidified a desired social order through the deployment of a seemingly neutral 'artifact' – a bridge. Winner provides other examples, too lengthy for inclusion here, that help to further internalise his concept that a technology may be designed with a set of installed meanings *a priori* its physical installation or user appropriation.

His second argument introduces his 'inherently political technologies' thesis, which rests on institutions of power and social order, a marked shift from the latter's onus on individuals or society-at-large (Ibid.: 31). In his essay, Winner refers to energy production as a technological process inevitably associated to a fixed institutionalised pattern of power and authority due to fact that society has accepted the rigid system and set of social conditions the technology operates within (Ibid.: 31-36). He gives the example of the atom bomb, which, because of its lethal properties, irrefutability requires a management approach that is authoritarian and centralised. Yet, he challenges us to question why nuclear energy, or other public utilities, is organised in the same authoritarian fashion. Rightfully, Winner asks if a different approach could be applied and, at the same time, argues for widening the debate to include the decentralisation of renewable energy. He opines that such a move is

intrinsically linked to democratic, egalitarian, and communitarian concepts of social order (Ibid.: 37); a value system that, at least in its entirety, is not present in many countries today.

Finally, in readdressing his untraditional approach to technology, Winner encourages not only a thorough understanding of technology but political theory, as this mix is necessary to help us grasp the impact technology has on all aspects of life, from matters social to political. The basis of his justification is our willingness to accommodate technology and to make "drastic changes" in the way we live accordingly, rarely questioning its inherent design (Ibid.: 37). If any element of Winner's thesis is to be extracted, it is this last conjecture. This aspect has profound currency in today's technologically infused environment especially when seeking an approach to understand the appropriation of online technologies, as this study is concerned with.

3. Conceptualising Twitter

Researching Twitter was motivated by my interest to critically analyse a web-based phenomenon. Although there exist many recent studies and exploratory articles that have examined web-based communications platforms from a plethora of positions, from social networking (Bigge, 2006; Kavanaugh et al., 2005) to identity and relationship formation (Bargh et al., 2002), and privacy (Barnes, 2006) to social class (boyd, 2007), few have addressed the web from a user appropriation perspective.

In this regard, the theoretical analysis presented has focused on SST and SCOT theories to serve as a basis of this study's empirical investigation. This direction debunks technological determinism as a theory of technology and encourages a focus on how users can shape technology and how technology can shape users (MacKenzie & Wajcman, 1999: 4). For the latter, I decided upon Winner's 'softer' theory of technology instead of his 'inherently political technology' thesis. Such an approach would serve no value in this study due to its emphasis on technology seen through the lens of structure and power in an authoritarian context; concepts that do not readily apply to Twitter. These theories allow for the possibility to examine the flexibility a technology offers and the possibilities a user has in shaping it to his or her benefit. By choosing this approach, a framework has been constructed that analyses Twitter from the vantage point of the user and the platform's design.

Academically, my intent is to support efforts to increase an understanding of the web as a malleable social technology and to encourage a deconstructionist approach that goes beyond the seemingly impermeable surface of technology. Since the debut of the public web in 1995 (Castells, 2001: 5), research efforts have largely concentrated on web use and design in an organisational context, mainly under the guise of 'information technology' (Carroll et al., 2001). Furthermore, I am sceptical of the position of some media scholars who assert that the online world is a mirror of the offline. Just as Manuel Castells claims a new pedagogy is needed to develop our capacity to think of and learn from the web (2001: 278), academic work must also attempt to uncover web dynamics, be it social, political, or communicational.

That said I am realistic of what is achievable in such a compact study and even more cognisant of the plausible short 'shelf life' of this research due to the ephemeral nature of many web platforms that are adopted in a flock-like fashion and then abandoned. Nonetheless, this research's objective from the onset was to explore the way in which users of Twitter adhere to the format established by the site's creators. Specifically,

RQ 1: "To what extent are users answering 'What are you doing?'"

In the instance that users are not responding to the question, I want to detect similarities in the forms of appropriation taking shape, leading to my second enquiry:

RQ 2: "If appropriation is occurring, what, if any, commonalities are there in the uses thereof?"

4. Researching Twitter, designing the methodology

Research strategy: questionnaire and content analysis

Initially, I was attracted to Twitter from a networking standpoint as people through the platform have the opportunity to send 'status updates' to their contacts. Of interest was what effect this "always-on, hyper-connected" form of communication (Rheingold, 2002; 190-91) might have on social relations, which led me to explore several prominent theories on social networking (Degenne & Forsé, 1999; Giddens, 1979) and techniques to study online networks (Garton et al., 1999). However, after delving further into the subject and realizing that, technically, Twitter offered no realistic method to track who in a user's network were receiving the postings, I decided to follow through on a second discovery, one that surfaced in early scans of users' pages, that not all people were responding to "What are you doing?". As I had interest also in gathering a sense of why people use the platform to communicate, I developed questions for a series of interviews to be conducted with Twitter users. Knowing this would require more time to undertake, this method was initiated first.

Users were randomly selected off the platform's public timeline[2] leading to their personal Twitter page which provided additional information such as their name, number of 'Friends' and 'Followers', date of joining, a short 'bio', location, and links to their blogs or personal web sites. This last aspect was crucial as it was the only avenue to gather a user's email address since Twitter does not provide this. Through this process, email addresses of 34 users were collected and messages sent in early June requesting their participation in an interview about their use of Twitter. Seven responded positively, two expressed interest but stated that they were unavailable, and the remainder did not reply, despite individual follow-up messages. As seven seemed a reasonable number for interviewing, times and several formats – telephone, IM, and email as a last option – were proposed. In the end, all respondents preferred answering the questions in an email, and the interview questions thus formed the basis of the questionnaire (App. A). The questions enquired about: their reason

for joining Twitter; their other online activities; how they use the platform: do they answer the question, if not, what do they post; how they decide what to post and if there were details they would not disseminate; if they knew the people who were their 'Friends' and 'Followers'; if they read other users' postings; and finally, their views on privacy. Five of the seven users returned the questionnaire.

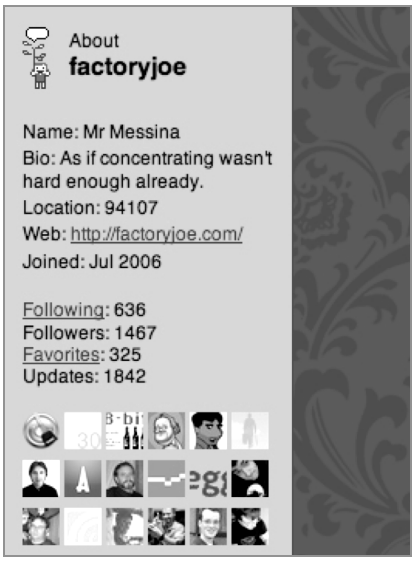
Beyond the questionnaire, this research's key methodological approach, and the origin of its main findings, is content analysis. Arriving at the decision to deploy a content analysis was based on this method's ability to provide a detailed account of what a text contains, to locate themes, and to offer a reliable mode of replication (Gunter, 2000: 60). For these reasons, content analysis remains a valid technique to seek for nuances and for identifying patterns (Ibid.: 61). While discourse analysis was considered, for its onus on detecting multiple meanings and for probing latent ideological positions in a given text (Ibid.: 82, 88), the intent of the research was to extract tangibles to be codified and grouped, not to interpret a posting's underlying message. Also given the brevity of the postings – less than 140-characters, approximately 25 words – the units lend themselves to content analysis (Ibid.: 65). Furthermore, an analysis of such small units would enable for a more secure method of interpretation and reduce mislabelling. When faced with large bodies of text, e.g. a newspaper article, a limitation of content analysis is personal bias during interpretation, as units are rarely fixed 'social' attributes (Ibid.: 82). Finally, with an answer to the first research question being the frequency of users responding to the question in a fixed format, starting with a verb, e.g. 'reading a book', 'going to the mall', 'thinking about dinner', or variations that have the same meaning or understanding, content analysis was considered the soundest methodological application to test this research's queries.

[2] http://twitter.com/public_timeline

Quantitative research sample and coding design

Following the same process to gather users for the questionnaire, 60 users[3] were randomly selected off Twitter's public timeline on July 5, 2007[4]. As this study did not have a target population in mind, and without knowing the total number of users since Twitter, Inc., refuses to publish such figures (Codel, 2007; Glaser, 2007), arriving at the population of 60 was meant to encompass as broad a user base as possible, to produce sufficient material for analysis, and to make the experiment feasible. To record the postings, individual screenshots of a user's page, comprising of some 20 postings per page, were saved and printed (App. B). Included was each user's 'biography box' (Fig. 3) to provide a user analysis of the information present, e.g. join date, total postings ('updates'), location, and Web links.

Fig. 3 – '**biography box**'



SOURCE: Twitter.com/factoryjoe, Aug. 2007

Unsure of the extent to which users were answering Twitter's question, and to acquire an understanding of how to proceed, a pilot was conducted on three users. Rather early in this task it was clear that many postings did not relate to "What are you doing?". Instead, postings were random personal statements, e.g. "life was easier when I was 4", about activities users participated in, but not in an active sense, e.g. "how beautiful was the lake today?", miscellaneous banter, e.g. "kids lots of them. everywhere.", and what can be

[3] Two users from the questionnaire were used in the analysis.

[4] When no English postings were on the timeline, I waited until it refreshed, which occurs every three to four seconds, presenting a new batch of Twitter users.

classified as non-standard orthography (Thurlow, 2003) such as emoticons, "☺", initialisms, "LOL", and deliberate misspellings, "SOOO". Once the pilot was completed, two coding variables were created, one for a positive response to "What are you doing?" and one for all variations labelled temporarily as "Other". Coding was carried out across the entire sample recording the instances when users answered the question and when they did not.

With the results of the primary coding exercise complied, I saw value in conducting a second coding analysis to capture the postings that were not in response to "What are you doing?," as the "Other" variable did not offer any insight into what the non-response postings were about. A typology (coding frame) (App. C) formed on my observations of reoccurring themes that emerged during the pilot and first coding exercise was developed consisting of the following themes: 'Personal' (thoughts and details about a user's life); 'Family/Friends' (messages directed at a specific person; feelings or viewpoints about another person); 'Information' (information and news); 'Work' (references to the workplace, colleagues, or daily tasks); 'Small talk' (comprising of three sub-themes 'Food', 'Popular culture', and 'Weather'); 'Technology'; and 'Activity' (events to take place and tasks completed). 'Miscellaneous' was also formed for unclassifiable postings.

A second coder was introduced to the coding procedure, presented with the coding frame, and instructed on how to conduct the analysis. Since I carried out coding in two rounds, first for the question and the second for the themes, it was decided the second coder would code all the variables at once to streamline the process and test for perception differences of what constituted a correct response to the question.

Intercoder reliability (ICR) tests were conducted on a randomly selected sub-sample of 10 users' total postings – representing 17% from the sample (App. D). With .70 considered an acceptable coefficient of reliability for exploratory studies (Lombard et al., 2005), the overall ICR – the average of all reliability values – was .74. Most importantly, "What are you doing?" recorded an agreement of .70 and the "Other" themes an average of .74. Individually, the themes ranged from .30 ('Personal') to two instances of perfect agreement for 'Food' and 'Weather'. 'Work' and 'Pop culture' recorded .90, 'Technology' and 'Activity' .80, and 'Family'

and 'Miscellaneous' .60. 'Information' recorded an ICR of .50. With four themes below the .70 threshold, the coding decisions were reviewed to verify the instances of disagreement. This led to the discovery that more than half of the disagreements (17 out of 29) were off by one unit each. For instance, all of the four disagreements under 'Family', four of the five under 'Information', and two of the four for 'Miscellaneous'. 'Personal', with the lowest ICR, had three disagreements off by one unit. Realising that the difference of one unit was in most cases distorting the agreement ratio, an alternative method for calculating ICR was sought; one that would allow for minute levels of disagreement within units, especially when the units of analysis are small. However, such an approach was not found. Given the two main themes of "What are you doing?" and "Other" (average) recorded acceptable ICR coefficients of .70 and .74, respectively, it was deemed appropriate to maintain the ICR method used and to report the values accordingly.

5. Results

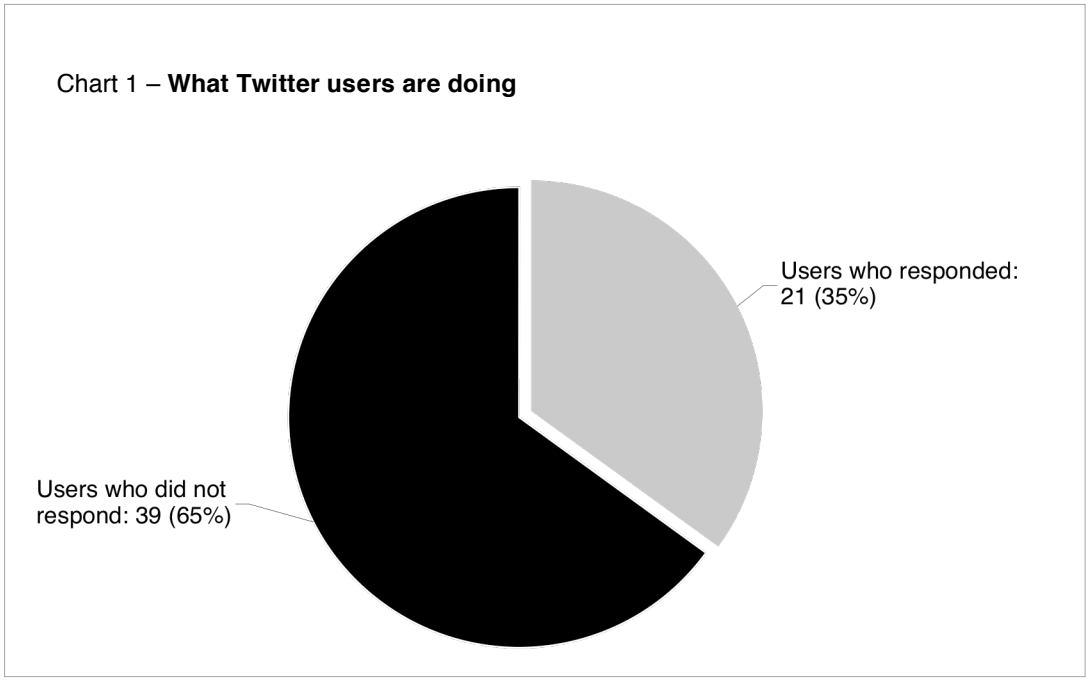
The research questions were tested against a coding exercise of 60 Twitter users and their combined total of 5,767 postings (App. E). The first coding variable was the platform's question "What are you doing?". A posting was coded as a positive response if the user described an activity, a thought, or another active undertaking using a verb with an '-ing' ending, or a variation that gave the same meaning. In the instance a posting did not meet this criteria, it was coded against the typology of seven themes, plus a 'Miscellaneous' category, that best represented the posting's main subject or purpose. This typology was devised to facilitate an understanding of the platform's other uses and to contribute to this research's broader interest in appropriation.

Content analysis

From the user perspective, 21 (35%) had a majority (≥ 50.1%) of their postings in response to the question and 39 (65%) did not (Chart 1). As highlighted in the table below, the distribution of the 5,767 postings is: 2,396 (41.5%) for the question and 3,371 (58.5%) for "Other".

Table 1 – **Distribution of values**

	"What are you doing?"		**"Other"**	
	#	%	#	%
Users	21	35.0	39	65.0
Postings	2,396	41.5	3,371	58.5



Responses to "What are you doing?" were similar in format: a verb with or without an '-ing' ending and other variations, including the use of third person, e.g. "is" or "s/he". Examples include:

P1: "heading home for some high school friends chillin"

P2: "watching Hollywoodland"

P3: "designing an ad for a corporate mag – fun"

P4: "is excited for Heroes tonight"

P5: "trying to wake up… a sleepy V"

P1 to P3 represent what was coded as a 'correct' or standard form of answering the question, whereas P4 and P5 demonstrate how users employed the third-person or shortened their name, e.g. "V" is for Veerle. Despite a slight deviation from the standard posting, the intended meaning remains the same and was coded as a positive response. Examples of postings not coded as a response to the question are:

P6: "Pennsylvania's liquor laws SUCK!"

P7: "big title = big head"

P8: "vote for Micheal Nutter"

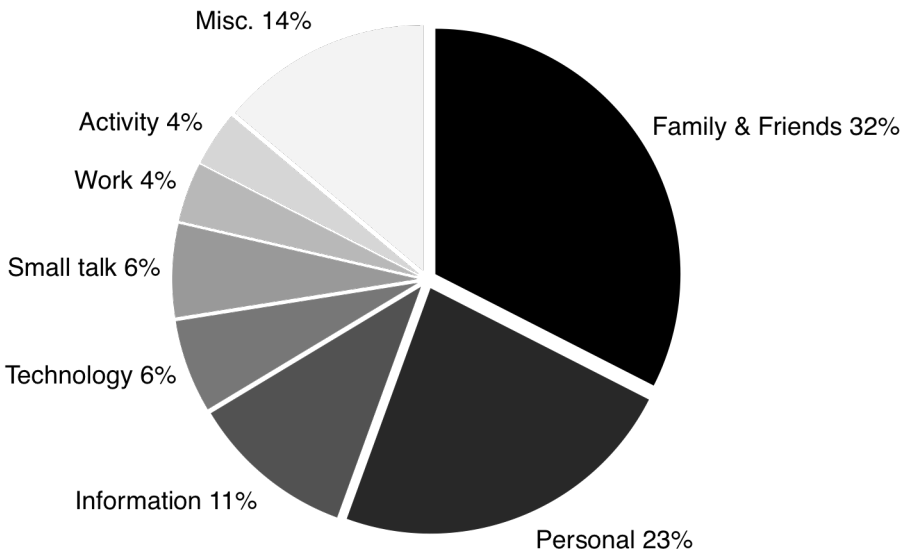
P9: "mmm 1700 calories"

P10: "37signals.com/svn"

In answering the first research question, only a minority of Twitter users observed in this study adhered to the question. The majority appropriated the platform to disseminate postings not in response to "What are you doing?".

To satisfy the second research question, 3,371 postings were classified against the typology framework (cf. App. C). An overview of the total number of postings and overall percentage for each typology is provided in Chart 2 and explained in the subsequent headings.

Chart 2 – **Beyond "What are you doing?"**



Family/Friends – 1,098 (32%)

This classification illustrates postings intended for a user's contacts.

P11: "Congratulations meggan! How long between proposal and twitter?"

P12: "Got pownce invites if anyone wants one."

P13: "@mager that showed huge restraint not buying the phone"[5]

Personal – 763 (23%)

Postings in this category concentrated on a user's views about him/herself or their immediate surroundings.

P14: "heads all messed up today, need to get myself straight sometime soon...."

P15: "I'm totally in awe. what a (huge) difference some (design) furniture makes"

P16: "so glad that call came in to tell me that this afternoon's meeting is cancelled."

Information – 367 (11%)

In this category, users shared information about a newsworthy event or person, raised awareness of something the user considered important, offered viewpoints on a particular issue, or kept people updated on his or her status.

P17: "i like this news! http://tinyurl.com/yva9v0 Google buys GrandCentral"

P18: "flight update @clippodcast flight delayed to 1:07 am…doh!"

P19: "MS [Microsoft] taking a $1 billion charge on earnings to fix all failed 360s…"

Technology – 209 (6%)

Postings under this typology were focused on technology and comments on software and hardware development, tech events, queries regarding tech support, as well as references to Twitter.

[5] Postings with an "@" symbol in front of a username indicate a message directed at or received from another user.

P20: "What is this tip thing for WHOIS command in my twitter SMS message?"

P21: "Can't use Jaiku on my SK3… no java apps either…"

P22: "Why does java not have unsigned data types?"

Small talk – 195 (6%)

Three smaller themes, 'Food' (102), 'Popular culture' (40), and 'Weather' (53), were merged to form 'Small talk', or informal conversations about trivial or mundane subjects.

P23 (food): "quiznos italian sub. Is there no such thing as hot pepper spread in CA?"

P24 (popular culture): "general hospital is hilarious at this hour. i wish someone was watching with me!"

P25 (weather): "It's surprisingly humid outside considering it hasn't rained in three weeks…"

Work – 143 (4%)

Under this heading, users shared information about work, e.g. colleagues, events, and daily tasks. Several users also wrote postings that expressed their views of colleagues, as highlighted in P27 and P28, or of work in general.

P26: "another meeting, another snog, and I'm still…confused"

P27: "nothing like working with a bunch of narrow minded overly religious types…"

P28: "Our intern started today. Can't wait to delegate all the crap I haven't done since she was here last!"

Activity – 119 (4%)

Postings in this category described an activity or event that a user participated in or is going to do. In contrast to "What are you doing?", postings were not phrased in an active sense but in the past or present tense, thus making a distinction necessary from "What are you doing?".

P29: "Congregation tomorrow! It is awesome almost being done with business school."

P30: "Will I play more ActRaiser tonight? I might!"

P31: "Bowled a 189 last night -- on the Wii…"

Miscellaneous – 477 (14%)

This classification contains postings not coded elsewhere. The majority were web links with no accompanying text (P32), foreign languages (P33), and non-standard orthography (symbols, emoticons, abbreviations). Some postings were also unclassifiable against the typology framework (P34).

P32: http://www.youtube.com/watc...

P33: 找到了我妈妈的手机!哈,她不必骂我了

P34: "yoga'd, udon'd"

User analysis

Data on the 60 users were compiled to provide an overview of gender composition, other web pursuits, location, joining date, and the average number of postings per day. All data except the last item, which was calculated manually, were generated from each user's 'biography box' (cf. Fig 3).

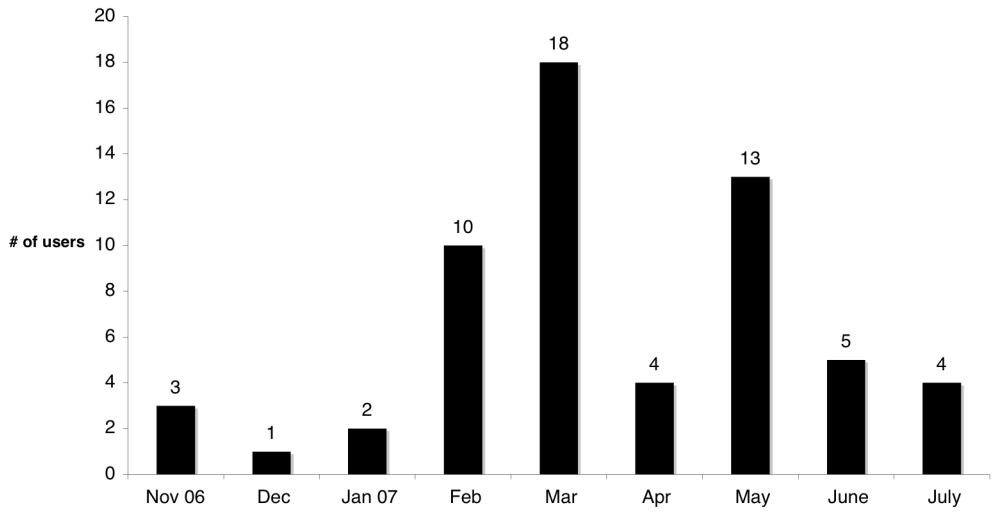
Gender – Although Twitter does not provide users with fields to enter vast personal data, such as 'gender', many present their identity by including a small photo and their name. Through these means, it is possible for visitors to gather if the person is male or female. Of the 60 users observed, 30 are male (50%), 28 are female (47%), and 2 (3%) were ambiguous.

Web pursuits – Subscribers to Twitter appear to be experienced web users. By following the links placed within their 'biography box' it was possible to determine that 31 users maintain a blog, 5 have MySpace profiles, and 3 have personal web sites.

Location – Thirty-nine users (65%) are based in the United States, 9 in Europe (15%), and 7 in Asia (12%). Five (8%) did not give their location. Of the 39 users in the U.S., 23 (59%) live in either state capitals or large urban centres, e.g. Houston, Orlando, San Francisco. Seven of the Europeans (78%) live in a capital city, e.g. Dublin, London, Paris. Of those in Asia, six (86%) live in a capital city, e.g. Jakarta, New Delhi, Tokyo.

Joining date – The majority of users – 35 (58%) – joined Twitter in the three-month period between March and May 2007 (see Chart 3). March saw the highest number with 18 users subscribing to the service. This figure appears to coincide with several media reports that indicated Twitter's user base increased substantially following the South by Southwest Interactive Festival in early March 2007, an event attended by influential bloggers (Johnson, 2007; Jones, 2007).

Chart 3 – **Joining date**



Frequency of postings per day – The average number of postings per day was calculated[6] for each user, ranging from a low of 0.22 to a high of 19.33. As stand-alone figures, little insight is provided into how often Twitter users in this study post messages. In

[6] The number of days since a user joined divided by their total number of postings up to and including July 5, 2007. The site http://www.timeanddate.com was used to provide a precise calculation of the number of days between two dates.

the absence of a market standard to classify frequency of use for SMS and IM, it was decided to create three categories for users by adopting and modifying an approach used to categorize SMS users in Canada (CWTA, 2006): low (< 1 posting/day), average (1 to 3 postings/day), and heavy (4 to ∞). Using this classification, 18 users were low (*m* = 0.7), not posting daily, 38 were average users (*m* = 1.6/per day), and 4 were heavy users (*m* = 9.3/per day).

Questionnaire

Five Twitter users completed a questionnaire regarding their use of the platform (cf. App. A). The summaries of the findings provide insight as to: what attracted them to Twitter and why they use it; their online activities; if they answer the question; how they decide what to post; and if they know their 'Friends' and 'Followers'.

Motivation – All of the respondents stated that they were attracted to Twitter because it offers an easy way to keep people informed of their activities. T. Knüwer from Germany dubbed it as "a fun tool", while J. Chong from England compared it to a "mini-blog" that enabled him to 'update his status' from his mobile phone, giving the platform a "pseudo real-time feeling". A second respondent, R. Lee from Malaysia, also labelled Twitter as a mini-blog and stated that it allows her to "display minute status updates". D. Davies from England said Twitter "is a simple way to converse with friends and family without the need to use an instant messenger client, and to see what people are doing around the world".

Web activities – All respondents indicated they are active web users who have blogs – D. Davies is a member of MySpace and Digg. For the group, Twitter is not the first platform they have used to publicise or post their activities. All have experience with blogging and indicated, with the exception of T. Knüwer, that they view their engagement with Twitter as separate from blogging. J. Chong said he has grown out of many blogging sites and prefers Twitter because it is convenient and enables him to send updates via SMS. Similarly, R. Lee views Twitter as a "diary of short snippets" that enables her to write "exclusively" about

herself. She said her blog is "a longer record of whatever [her] thoughts are on a given subject". Finally, W. Baan from the Netherlands said Twitter is about "open conversation" and allows him to "write and talk" with anyone.

Answering the 'Question' – Twitter's "What are you doing?" is not a deciding factor when it comes to postings. Two users, R. Lee and J. Chong, started out answering it but now post messages independently. D. Davies switches between the question and whatever else is on his mind, as he felt answering it would get "repetitive" and "boring" for the people who receive his updates. The respondent from the Netherlands indicated that Twitter has turned into a social network there, named "Twitter Borrel" (http://twitterborrel.ning.com), in which users meet physically. T. Knüwer uses Twitter to post questions regarding web-related issues and within minutes he usually gets a reply.

Selecting what to post – In determining what to post, many of the respondents said they make a differentiation between public and private. Aware of the fact that anyone is able to read what is posted, four said they do not delve too personal and one, W. Baan, indicated that his only rule is not to talk about other people. D. Davies views Twitter as a "public service" and that certain information should remain private. He decides this by questioning if he would shout the statement in a "crowded room". R. Lee avoids posting too much personal information for fear of revealing her identity. For J. Chong, Twitter gives him an outlet to post his thoughts when he wants "to make [him]self feel better".

Friends and Followers – All respondents said they 'know' the people (fellow Twitter users) on their 'Friends' list either in-person or virtually. In the latter case, many are bloggers they follow, contacts off other SNSs, or 'friends of friends'. As for 'Followers', they do not know the people on their 'Follower' list. D. Davies said he likes this feature because he can meet new people. R. Lee said she is conscious of the fact that she has an unknown "audience" and hopes what she posts is of sufficient interest to her 'Followers'.

6. Discussion

My empirical research has attempted to quantify the extent to which users have appropriated Twitter. Using "What are you doing?" as the baseline for enquiry – a positive response demonstrating non-appropriation, a deviation representing appropriation – the findings of the content analysis indicate that most people use the platform for other purposes. Of the 60 users observed, 39 (65%) rejected the site's question and 21 (35%) adhered to it. In analysing the 5,767 individual postings, 2,396 (41.5%) were in response to the question whereas 3,371 (58.5%) were not. From these figures, it is my argument that the majority of Twitter users observed in this study posted messages reflecting whatever kind of communication they wanted to disseminate.

The second phase of the content analysis endeavoured to classify the appropriation occurring. Seven themes were developed and then applied across the remaining 3,371 postings to extract commonalities. The most prominent classifications were 'Family/Friends' (32%), postings directed at or about a person or people within the user's network, 'Personal' (23%), musings about the user's life and immediate surroundings, and 'Information' (11%), a mix of news and other tidbits of information the user wanted others to know. These three typologies account for two-thirds of the postings categorised as a non-response to the question. Combined with the remaining classifications – 'Small talk' (6%), 'Technology' (6%), 'Work' (4%), 'Activity' (4%), and 'Miscellaneous' (14%) – the results of the typology analysis demonstrate that communication on Twitter is as varied as the users it originates from.

Consider the postings within 'Family/Friends' for example. An interesting aspect is that many postings often read like fragments of a virtual conversation. When an "@" was placed in a posting, it was clear that a fellow Twitter user was being interacted with. In the absence of the symbol, the only indicator of an actual recipient were instances when a user addressed a particular person, integrating his or her first name into the posting as one would do when speaking face-to-face, e.g. "Hutch i told my sister in law that i knew lynn…". A confounding aspect of this posting and others like it was the level of intimacy applied, as if the person receiving the message was the only one in the message chain. The sender of the above

posting, "sistamiff", for instance, has 28 'Friends'. It is arguable that not all of her contacts knew "Hutch" or were interested in the message being relayed. Within this category, however, there were times when Twitter was used as a deliberate one-to-many broadcasting system. "Marc1919" sent nearly 30 postings within a 36-hour period to his 551 'Friends' to keep them aware of the birth of his child. In contrast to "sistamiff's" posting, it can be assumed that "Marc1919's" contacts were relatively interested in the news of his wife giving birth since the message had a universal objective. It is clear in this last example that the user had extended Twitter beyond the question.

Somewhat similar to the last category, 'Personal' also captured elements of a user's daily life. But unlike 'Family/Friends' the main difference in this classification is that there were no signs of a receiver or an audience and the postings did not carry a conversational tone. In some instances, postings took on a diary-like character. For instance user "Yams" posted several messages that had this quality, e.g. "one thing I seriously learned this year: patience really pays off". With seven 'Friends' receiving her postings, a small number when compared to the previous examples, it is plausible that she is not overly concerned with using Twitter as a broadcasting device but to merely record her own thoughts and actions. A second user, "candice", had at the time of this study 76 postings but only one 'Friend' receiving her updates. As highlighted by one user (R. Lee) in the questionnaire, what initially attracted her to Twitter was the fact that she could post "exclusively" about herself, in contrast to her blog which she said is meant to keep a thorough record of her thoughts on a specific subject. Viewed from this aspect, Twitter serves as a platform to electronically record the minutiae of daily life, similar to 'lifelogging'[7].

The third largest classification to emerge from the coding analysis is 'Information'. These postings represented efforts by users to disseminate information they felt was important enough to share, from headlines to viewpoints on newsworthy items. In numerous instances, the postings were news, sometimes paired with a link, e.g. "UK report says airplanes responsible for 13% of 2005 greenhouse gas emissions; could double by 2050 –

[7] Lifelogging refers to the continuous recording of one's life; a phenomen Microsoft is capturing with its MyLifeBits project: http://research.microsoft.com/barc/mediapresence/MyLifeBits.aspx

http://tinyurl.com/2h9qqq", awareness items, e.g. "Burma is on the BBC's front page, regarding human rights violations", or mere observations, e.g. "Fireworks are setting off car alarms down the street". Although these examples vary in importance, they represent a common thread among users to appropriate Twitter as an information-sharing mechanism, a platform that is not solely centred on them.

The remaining categories of 'Small talk', 'Technology', 'Work', and 'Activity' illustrate the flexibility of the platform to be employed for a variety of purposes, some serious and some trivial. Within 'Technology', many users posted questions seeking technical advice, e.g. "Anyone know how to set-up print sharing from my Mac to a Windows laptop?". As stated by one user (T. Knüwer) in the questionnaire, after his posting of a question for technical help he typically received a "decent reply". What this example exemplifies, and others before it, is a user's ability to carve out their own meaning and make the platform work for them, regardless if it reflects what the designers had intended.

Platform observations

In addition to the main findings, there are three observations that emerged from within the overall study of the platform that are valid for discussion. First is user awareness of the existence of a virtual audience. A change in posting style and format was observed in several users from when they joined to the start of this analysis; in some instances that period ranged from a few weeks to several months. One user, "ahockley", started posting in a simple manner, writing short and trivial messages, e.g. "Buying a new pda", but eventually gave his posts a more comical tone that focused on office politics, e.g. "Sign your organization is too dependent on paper: a business process is referred to as "the blue form"". Others generated posts in a way different than most, e.g. "Ossified dead bird / Oh God no, no, no, don't touch / See? Bones, ske-le-ton", to possibly create attention or their own style; the author of that post, "momku", was displayed on Twitter's main page as a 'featured user'. In the questionnaire, two of the five respondents (D. Davies and R. Lee) alluded to the presence of an audience stating that they were conscious of what they posted and tried to make their postings interesting for others.

Second is the blurring between public and private matters, in which intimate aspects of daily life are transmitted to others, e.g. "70 hours since my last shower" or "getting ready for bed". This observation supports what many commentators have stated is Twitter's biggest weakness: the 'pushing out' of mundane and personal details into a person's network (Thompson, 2007); trifle points that, debatably, would not be typically shared in face-to-face interactions. While the broader implications of this public-private mixing are of a hypothetical nature, it has been argued that "when distinct social situations are combined" (Meyrowitz, 1985: 4), and what was once viewed as inappropriate behaviour becomes acceptable, such a change may 'alter the texture of social relations' (Ibid.).

The final observation is the users' location, which emerged from the analysis of user data complied off each user's 'biography box'. Of the 55 users who indicated their location 65% reported living in either a capital city or a large urban area. Although this figure is questionable, it is interesting to note that a majority of users in the sample—claim to—reside in cities. Without hypothesising too much, given the unreliable origin of the findings and it not being this study's focus, there is no doubt an impetus present to raise questions surrounding location ('city life') and a person's motivation for using Twitter to maintain social ties, frequency and format of physical interactions, and participation in group-related activities. A theorist like Robert Putnam would see immediate links to electronic media's role in eroding civic engagement and social capital, as he critiqued about television in *Bowling Alone* (2000: 224).

Theoretical relevancy of findings

Based on my interpretation of the findings, and in line with core aspects of the theoretical proposition presented at the beginning of this research, it is reasoned that the majority of users observed in this study have appropriated Twitter. By drawing upon SST and SCOT theories, the argument is put forward that users have redefined and customised the platform to serve their own interests (Mackay & Gillespie, 1992: 698). This position relates strongly to the SCOT concept of interpretative flexibility, as established by Bikjer and Pinch, that a technology can have different meanings and readings for various groups – and individuals –

in society (MacKenzie & Wajcman, 1999: 21), and contributes to debasing claims that a technology is impermeable to human influence (Ibid.: 5).

Furthermore, it raises awareness of the influence social norms have on shaping a technology and the manner in which users interact with it. The classification framework employed in the empirical component of this study demonstrates this point by revealing how people use Twitter to maintain contact – or to 'converse' – with family members and friends and to present one's self to the world; two norms that are fundamental to how people define themselves within society. It is also not startling that the exchanges occurring on Twitter are trivial, as face-to-face or other mediated forms of communication are often 'mundane and vary in degrees of importance' (Nofsinger, 1991: 4-5). Seen in this regard, it is no surprise that Twitter upholds the intrinsic social function of communication. For if the platform did not act as an extension of such norms, it would be plausible to view the society-technology nexus as disconnected from each other and from reality in general; separate spheres immune to influence. This conjecture would play well with those who embrace technological determinism, contending that technology is independent from society and an impenetrable 'artifact'.

Nevertheless, it would be too credulous to close the theoretical reflection without considering the influence of Twitter's design—referencing Winner's inherently political technology thesis—on users' postings. The findings do raise a question over the function of the question and if the variants of appropriation detected are simply a part of Twitter's overall purpose. Linking back to Winner's thesis, it is plausible that Twitters' creators developed "What are you doing?" to impose a soft restriction, to "prime" the conversation (Rheingold, 2007), and to assume a light hand in trying to *shape* and *influence* who in the web community uses Twitter. It may well be an attempt by its creators to keep the platform from being 'hijacked' by undesirable users, e.g. pornography rings, marketers, and so on, those whose mere presence might detract its targeted user base. Clearly then, web sites, like Moses' bridges, can also take on political identities to secure pre-emptive goals. While it is not claimed that Twitter is vying for a similar demarcation, it is valid to be cognisant of a technology's inherent politics *a priori* its adoption by users.

Future theoretical applications

Representative of a possible emerging trend in hybrid online-offline communication, Twitter is ripe for further academic exploration. Beyond what has been reported in this study, several theoretical applications surfaced when researching that may extend a critical analysis of the platform and of similar web phenomenon to other areas.

First is the platform's 'open' design and the relative ease of 'third party' surveillance, echoing Bentham's seminal work on *panopticon* – centralised observation – (Rheingold, 2002: 189) and Foucault's discourse on the association between surveillance and behaviour (Foucault, 1980: 146-165). A second, associated concept is the role of audience awareness, what Goffman referred to as "performance" (1959: 32), in shaping the discourse – or image – users disseminate publicly. As alluded to previously, and reinforced by respondents to the questionnaire, an observation has been made of the presence of 'performance' and the effects of a virtual audience. A third approach would be to conceptualise Twitter as a mechanism to maintain social ties. Here, elements of Granovetter's 'weak ties' hypothesis could be applied to cultivate the notion that a person's interactions with an extended, weaker network provide benefits that are not always found in intimate, face-to-face networks (1973: 1370-1371). The ability to nurture social ties and to foster new ones with relative ease is of definite interest from a social relations perspective. A final proposal is to build on previous studies (Nastri et al., 2006; Thurlow, 2003) that have examined IM applications and text messaging from speech act theory and sociolinguistics, respectively. Of particular interest would be to question the effects of faster Internet bandwidth and new multi-functional personal communication devices, e.g. 'smartphones', on discourse and face-to-face interaction. With communications technology becoming increasingly ubiquitous, investing academic energy into better understanding the effects of our being in "perpetual contact" with others will be of great importance (Katz & Aakhus, 2002: 3-4).

However, as experienced during this study, conducting theoretical and empirical research of online phenomenon is rife with complications. One challenge encountered when conducting this dissertation was locating users for interviews. Much time and energy was used to

contact users, which eventually resulted in a questionnaire that only five answered. If further resources had been available, a greater emphasis would have been placed on increasing the number of questionnaire respondents or ideally to conduct interviews as was initiated. Lastly, finding applicable empirical frameworks to test for user appropriation was difficult. After a review of similar studies regarding online communication platforms, I formulated a framework based on the observations I made during the pilot exercise, which led to the appropriation typology for postings that did not respond to the question. This action was not objective and the classification of the postings far from neutral, despite attempts to remain so; in fact, few instances of 'defining genres' are free from bias (Chandler, 2000). Also, in the process of coding the second coder and I noted instances when a posting contained two or more subjects. As this was not accounted for in the initial design of the coding framework, the most prominent theme present was coded. In hindsight, the ability to parse postings could have been considered to provide a more accurate picture of a posting's orientation.[8]

[8] Nastri et al., 2006, applied this approach (parsing) in their speech act analysis of IM 'away messages'.

7. Conclusion

This study investigated the extent to which a sample of Twitter users were answering the platform's "What are you doing?" question. A response was considered as an action that adheres to the platform's design and purpose, set forth by its creators, with a non-response to the question judged as an example of user appropriation. Research was conducted to quantify the number of users who answered the question and those who did not. This entailed a content analysis that provided a framework to test for and measure appropriation. Several users also completed a questionnaire to give insight into how and why Twitter is used as a means to communicate.

Based on the research's findings, it is possible to conclude that the majority of users observed have appropriated Twitter beyond the question. Thirty-nine out of the 60 users wrote postings that did not respond to the question whereas 21 did. Of the 5,767 individual postings this study encompassed, 41.5% responded and 58.5% did not. The latter were classified against a typology of seven groupings – plus 'Miscellaneous' – aimed at representing each posting's central subject or message. The results demonstrate that the main functions of Twitter are: to send messages to other people known by the user; to publish one's personal viewpoints and thoughts; and to share news-like information with others.

These findings correlate with the theoretical foundation presented which is based on the understanding that technologies are not neutral objects that operate apart from society's influence. Technologies are flexible devices. People often extract different meanings and uses out of a technology – applications that are not always factored into its design. In some instances, however, inventors, or shapers, of technology can themselves determine how a technology is to be used and therefore limit and restrict its 'interpretative flexibility'.

With Twitter, subscribers have broadened its use and customised the platform to ends arguably beyond what its creators intended. Although "What are you doing?" rests prominently at the top of the Twitter web site, it is a 'soft' restriction that does not in itself

determine how users engage. Furthermore, there are no control mechanisms to curb misappropriation, other than a limit on message length. Taken together, it could be argued that Twitter's creators established it as a 'neutral' platform, entirely malleable by its users and therefore affording them the opportunity to determine its core uses. The question then serves only as a guide to get communication going. As highlighted by some respondents to the questionnaire, it is present but not deterministic.

Finally, this research has attempted to look beneath a technology's surface to see how it is used. As the postings revealed, Twitter appears to be very much a part of the people who use it to send out random thoughts and details about their daily lives. Beyond that, there is not much else to extract. There are broader, and valid, implications to be examined, such as privacy, surveillance, and probable effects on face-to-face interactions, but in its pure function, Twitter addresses an innate human desire to converse and to be heard. Seen in this light, it is no surprise that people have appropriated it to reflect whatever use or style of communication they want.

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Annexes

Annex A – Example of completed questionnaire

Response from D. Davies, United Kingdom
http://twitter.com/dandavies
Received 10 July 2007

Q1: How did you come to join Twitter and what attracted you?

I joined Twitter after hearing about it through various technology websites; it was quite a big thing once it had launched, and many people were joining up and talking about what a good idea it was. Once I had heard enough people talk about Twitter I decided to take a look at the site and then eventually joined. I guess what attracted me was that it is a simple way to converse with friends and family without the need to use an instant messenger client, and to see what people are doing around the world.

Q2: Is Twitter the first online platform you have joined to post your thoughts and/or activities? If no, what other site(s) and/or tools are you participating in and how do they compare to Twitter?

I would say Twitter was one of the first services I joined that was a sort of 'mini-blog' per say. I am a member of sites such as MySpace and digg, however Twitter was a more refreshing idea as it allowed me to write small simple bits about what I am currently doing, or get answers to simple questions that I felt wouldn't merit discussion on the web forums I am a member of (namely SomethingAwful.com and Genmay, as well as sites such as Apple Discussions and MacRumours).

Q3: How do you use Twitter - do you reply to the set question, " What are you doing?" or submit entries along your own line of thinking?

Sometimes I reply to the set question, giving people an idea at what I am doing if something is interesting enough, however I don't always answer that question; because I do a number of things throughout the day, and 'Twitting' everything I do during a normal day would get very repetitive, let alone boring for the people who have to put up with receiving my 'Tweet's'; so when I am doing something interesting, not for example 'making a drink' or 'going out to the supermarket to buy some bread', then I would follow the set question. However, I also ask questions, and respond to other peoples 'Tweet's' and questions that are posted, meaning that often my 'Tweet's' are not an answer to the set question provided.

Q4: How do you decide what to post on your Twitter page: are there details about you (your thoughts/viewpoints and your activities) that you would not post? Please explain how you make the distinction.

As with everywhere on the internet, I wish to maintain a sense of animosity, so I wouldn't post things such as 'calling <telephone number>' or 'visiting a friend at <address>' because even though I have friends and people I trust on Twitter, it still is a public service meaning that certain information should be kept to myself. I decide this by asking myself whether I would want said information to be shouted out in a crowded room, because essentially that is what the internet it; millions of people have the chance to read almost everything that is on the 'tubes' - so if I wouldn't want the 'Tweet' to be read by lots of people, then I wouldn't submit it.

Q5: According to your Twitter page, you have 21 friends and 23 followers:

- a) Do you know your friends and followers?
Many of them, I know through various other internet sites, such as forums and flickr - however some are just 'friends of a friend' who have added me through Twitter, however this is something I like as it allows me to meet new people.

- b) Are they people you interact with in the 'offline', in face-to-face situations?
A very small minority of the people that are added on my Twitter are people I know in offline situations, many live hundreds of miles away which means that face-to-face situations would not be suitable, Twitter allows me to still keep in contact with these people even though they may live half way across the world.

- c) What do they think about receiving your 'tweets'?
If they have added me as a friend, then they mustn't mind receiving my 'Tweets'

Q6: Do you read and/or follow other people's Twitter page(s)? If so, what attracts you to do so?

I use an application called 'Twitterific' which provides me with a constantly updated feed of all the recent 'Tweets' my friends on the service submit, meaning I don't have to follow one page to keep up-to-date, everything is there on my desktop all the time.

Q7: Do you know - personally or virtually - the people you follow on Twitter?

Yes, all the people that I follow on Twitter are people I know personally or virtually, they maybe however people who I have met through the Twitter service, but I have spoken to them all off of the Twitter site.

Q8: Complete strangers can follow your Twitter entries and thus gather a sense of who you are. What do you think about this?

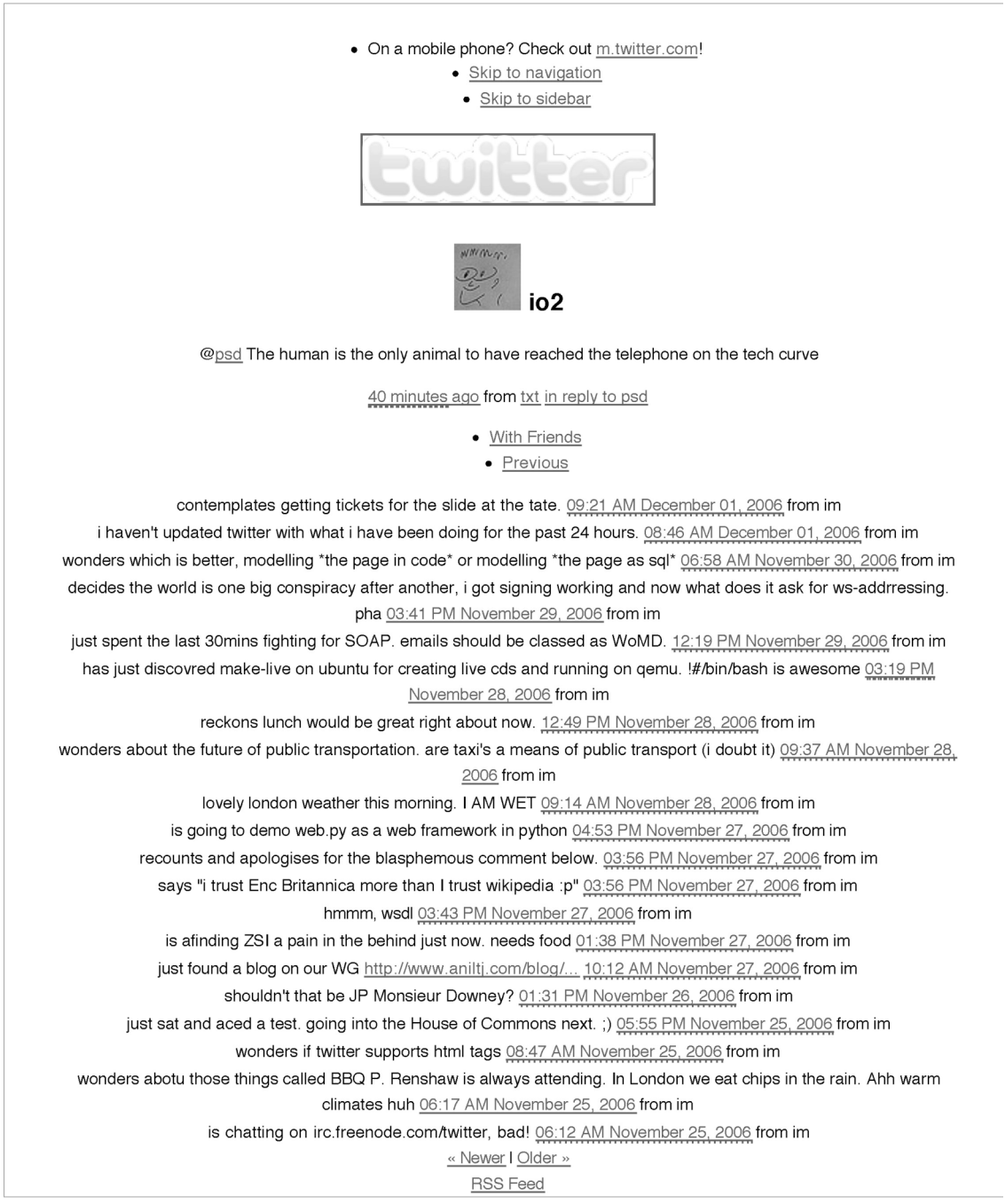
I believe that is fine, as long as I maintain a small amount of censorship over what I post and don't go Twitting about very personal stuff, or stuff that I wouldn't want to be read about by millions of people, then it is their choice.

Q9: Finally, are there other comments or thoughts you would like to share with me about Twitter?

Not that I can think of at the moment.

Annex B - Example of (coded) user's page

This is 1 of 4 pages from user "io2" (ID # 46). It contains 20 postings in which 17 were labelled in response to "What are you doing?", 2 as 'Miscellaneous', the 5th and 8th posting from the bottom-up, and 1 as 'Weather', the 12th posting from the bottom-up.



- On a mobile phone? Check out m.twitter.com!
- Skip to navigation
- Skip to sidebar

twitter

io2

@psd The human is the only animal to have reached the telephone on the tech curve

40 minutes ago from txt in reply to psd

- With Friends
- Previous

contemplates getting tickets for the slide at the tate. 09:21 AM December 01, 2006 from im

i haven't updated twitter with what i have been doing for the past 24 hours. 08:46 AM December 01, 2006 from im

wonders which is better, modelling *the page in code* or modelling *the page as sql* 06:58 AM November 30, 2006 from im

decides the world is one big conspiracy after another, i got signing working and now what does it ask for ws-addrressing. pha 03:41 PM November 29, 2006 from im

just spent the last 30mins fighting for SOAP. emails should be classed as WoMD. 12:19 PM November 29, 2006 from im

has just discovred make-live on ubuntu for creating live cds and running on qemu. !#/bin/bash is awesome 03:19 PM November 28, 2006 from im

reckons lunch would be great right about now. 12:49 PM November 28, 2006 from im

wonders about the future of public transportation. are taxi's a means of public transport (i doubt it) 09:37 AM November 28, 2006 from im

lovely london weather this morning. I AM WET 09:14 AM November 28, 2006 from im

is going to demo web.py as a web framework in python 04:53 PM November 27, 2006 from im

recounts and apologises for the blasphemous comment below. 03:56 PM November 27, 2006 from im

says "i trust Enc Britannica more than I trust wikipedia :p" 03:56 PM November 27, 2006 from im

hmmm, wsdl 03:43 PM November 27, 2006 from im

is afinding ZSI a pain in the behind just now. needs food 01:38 PM November 27, 2006 from im

just found a blog on our WG http://www.anltj.com/blog/... 10:12 AM November 27, 2006 from im

shouldn't that be JP Monsieur Downey? 01:31 PM November 26, 2006 from im

just sat and aced a test. going into the House of Commons next. ;) 05:55 PM November 25, 2006 from im

wonders if twitter supports html tags 08:47 AM November 25, 2006 from im

wonders abotu those things called BBQ P. Renshaw is always attending. In London we eat chips in the rain. Ahh warm climates huh 06:17 AM November 25, 2006 from im

is chatting on irc.freenode.com/twitter, bad! 06:12 AM November 25, 2006 from im

« Newer | Older »

RSS Feed

Annex C – Coding frame

WAYD: "What are you doing?"
Code posting if it: 1) starts off with a verb and 'ing' ending; 2) describes an activity that the person did, is doing, or will do. Examples: "formatting a bunch of 1.44 floppys", " sleeping", "About to go out and run some errands – desperate for chocolate and the latest PEOPLE magazine!!!!".

Pers: Personal
1) Describes the user's mindset – what he or she is thinking, largely about something happening to them, in their immediate environment; 2) provides insight into the user's mental or physical state (how he or she is feeling). Examples: "note to self: photos for facebook", "heads all messed up today, need to get myself straight sometime soon".

Fam/Fri: Family & Friends
1) Makes reference to a particular family member, friend; 2) includes an "@" in front of a username, which indicates that it is directed at a person the user knows on Twitter. Examples: "@johnkid What's up for tonight?", "Kids were up late last night – help me! I need sleep...".

Work
1) Mentions the user's workplace and/or people, events at the workplace; 2) describes a work- or job-related task; 3) includes jargon or terminology related to the workplace; 4) references other kinds of activities that can be classified as "work", e.g. housekeeping, shopping. (NB: It is important here to ensure that the entry does not start with a verb, as it would then be coded as "What Are You Doing?") Examples: "Ok, I'm ready to clean my house now...", "New intern here – will get her to do my work!LOL".

Pop: Pop Culture
1) References movies, actors, musicians, etc., in a context that mirrors what would be considered as gossip; 2) highlights the user's views towards a famous person. Examples: "I wish I was getting paid to stand in-line and buy an iPhone", "Go see "Last King of Scotland – awesome movie!".

Info: News and information
1) References an event, person or thing that is making news; 2) shares information that can be considered newsworthy or linked to awareness-raising; Examples: "Hillary for Prez!", "Boston has the highest crime rate in the U.S.".

Food
1) Shares the user's interest or desire/craving for a specific food; 2) highlights the user's preferred food; 3) encourages a response to a food or meal-related enquiry. Examples: "I'm a little lad who loves berries and cream", "I would kill for a triple cheeseburger", "Anyone up for Denny's? It's lunchtime!".

Tech: Technology
1) Describes technological terminology; 2) references Twitter or similar websites; 3) asks a question or seeks advice related to technology. Examples: "Why the hell is Twitter not updating my facebook?", "Anyone having problems with Vista? I can't seen [sic] to get it to work!".

Weat: Weather
1) Describes the weather; 2) shares the user's viewpoint(s) about the weather. Examples: "Raining here. Sucks!", "I'm going to die because of the friggin' heat – it's February and already the flowers are out!".

Act: Activity
1) References an upcoming event or task that the user will participate in or be required to complete, or has participated in/completed. Examples: "Almost completed my last exam! Hooray!", "Congregation tomorrow! It is awesome almost being done with business school"

Misc.
1) Cannot be classified into any of the above categories; 2) includes text in a language that is not understandable; 3) includes a web link; 4) is made up of non-standard orthography (symbols, abbreviations. Examples: "WTF?!", "akk akk akk akk akk – LOL!", "http://www.8708601087.com/".

Annex D – Intercoder reliability (ICR) test

ID	Coder	WAYD[1]	Pers.	Fam.	Work	Pop C	Info.	Food	Tech.	Weat.	Act.	Misc.
4	m[2]	17	17	4	3	9	7	9	6	2	2	3
	e	17	18	4	3	12	7	9	6	2	1	0
6	m	16	2	0	0	0	0	0	1	0	3	3
	e	16	0	0	1	0	0	0	1	0	3	4
11	m	5	0	1	5	0	0	0	0	0	1	2
	e	5	0	1	5	0	0	0	0	0	1	2
18	m	61	0	6	0	0	5	0	3	0	0	0
	e	63	0	5	0	0	3	0	4	0	0	0
20	m	11	9	2	0	2	1	1	0	0	1	7
	e	11	9	2	0	2	1	1	0	0	1	7
21	m	29	22	18	0	0	1	2	1	0	1	3
	e	29	18	19	0	0	1	2	1	0	4	3
26	m	26	2	29	0	0	3	0	4	0	1	1
	e	26	1	30	0	0	2	0	5	0	1	1
29	m	59	6	0	0	0	1	0	0	0	0	0
	e	62	4	0	0	0	0	0	0	0	0	0
45	m	48	19	3	0	0	2	1	2	0	0	3
	e	57	12	3	0	0	3	1	2	0	0	0
46	m	49	7	2	0	0	12	0	1	1	1	5
	e	49	8	3	0	0	11	0	1	1	1	4
ICR		**.70**	**.30**	**.60**	**.90**	**.90**	**.50**	**1.0**	**.80**	**1.0**	**.80**	**.60**

[1] Abbr. for "What are you doing"?

[2] 'm' is the second coder, 'e' the first.

Annex E – Code book

ID	WAYD [1]	OTHER									
		Pers	Fam	Work	Pop C	Info	Food	Tech	Weat	Act	Misc
1	[2] **23**	0	0	0	0	0	0	8	0	0	8
2	20	3	4	0	0	0	0	19	0	2	8
3	13	15	0	15	0	0	3	12	0	1	22
4	17	18	4	3	12	7	9	6	2	1	0
5	32	1	25	3	0	1	3	1	0	2	9
6	**16**	0	0	1	0	0	0	1	0	3	4
7	3	1	31	3	0	2	0	22	0	4	13
8	11	17	18	1	6	5	0	7	1	2	9
9	68	26	39	0	0	5	0	1	1	3	6
10	**49**	7	0	4	0	1	0	0	0	0	6
11	5	0	1	5	0	0	0	0	0	1	2
12	**10**	0	0	0	0	0	0	0	0	0	2
13	5	1	8	0	0	0	0	0	1	2	41
14	50	16	47	3	1	2	6	1	1	5	9
15	3	0	0	53	0	0	0	0	0	0	0
16	70	13	27	2	0	16	1	15	2	1	10
17	28	14	33	0	2	14	1	12	2	5	15
18	**63**	0	5	0	0	3	0	4	0	0	0
19	19	8	4	1	4	0	4	0	0	2	4
20	11	9	2	0	2	1	1	0	0	1	7
21	29	18	19	0	0	1	2	1	0	4	3
22	46	7	35	0	0	39	1	3	0	4	3
23	13	32	36	10	2	21	1	1	9	9	8
24	**100**	7	0	5	1	17	1	3	2	6	6
25	23	13	52	0	0	24	0	13	0	5	24
26	26	1	30	0	0	2	0	5	0	1	1
27	68	8	29	0	0	17	5	1	4	1	6
28	47	32	34	0	0	17	9	1	0	2	14
29	**62**	4	0	0	0	0	0	0	0	0	0
30	7	2	0	0	0	1	2	0	0	6	55
31	61	17	20	0	2	14	18	10	4	0	2
32	17	13	0	0	0	0	2	2	1	4	37
33	5	19	30	3	0	0	0	1	1	2	9
34	**95**	0	0	0	0	30	2	0	1	0	2
35	72	20	14	4	0	16	5	14	3	6	6
36	72	38	5	7	1	13	5	0	0	2	2
37	7	17	95	0	0	9	0	1	0	7	24
38	**148**	1	6	0	0	0	0	1	0	0	2
39	**83**	9	50	0	0	1	3	0	2	0	7
40	3	8	143	0	0	0	0	0	0	2	4
41	1	1	6	0	0	0	0	0	0	2	5

42	**95**		30	21	0	0	2	0	0	0	0	2
43	32		25	2	0	0	45	0	10	0	0	0
44	**90**		23	34	0	0	2	2	2	0	0	0
45	**57**		12	3	0	0	3	1	2	0	0	0
46	**49**		8	3	0	0	11	0	1	1	1	4
47	10		18	37	0	2	2	0	2	0	3	3
48	75		37	29	0	0	1	2	4	0	0	2
49	35		18	0	2	1	1	0	6	1	7	3
50	**54**		1	17	1	0	1	0	1	1	0	2
51	**59**		2	5	1	0	0	1	0	0	0	4
52	**75**		26	21	0	0	16	2	6	2	0	0
53	2		117	32	4	0	1	3	0	0	1	0
54	**12**		0	0	0	0	0	0	0	0	0	0
55	**85**		0	0	0	0	0	0	0	1	4	2
56	32		7	9	0	0	1	0	3	8	0	21
57	**66**		6	2	1	0	0	0	0	1	0	7
58	**29**		2	0	0	0	0	1	1	0	0	1
59	23		1	29	0	2	2	1	4	0	0	16
60	15		14	2	11	2	0	5	1	1	5	15
Sub-TOTALS	2396		763	1098	143	40	367	102	209	53	119	477
% of OTHER	n/a		[3] **23**	**32.5**	**4**	**1**	**11**	**3**	**6**	**1.5**	**4**	**14**
			Pers	**Fam**	**Work**	**Pop C**	**Info**	**Food**	**Tech**	**Weat**	**Act**	**Misc**
TOTALS	2396		3371									
%	**41.5**		**58.5**									
	WAYD		**OTHER**									

[1] Abbr. "What are you doing?".

[2] Bolded figures are users who answered the question more than 50.1% of the time (21 in total versus 39 for those who did not).

[3] Differences in percentages are due to rounding to equal 100%.

"Goods are neutral, their uses are social; they can be used as fences or bridges."

Mary Douglas & Baron Isherwood

Preface (p. xv), in *The World of Goods: towards an anthropology of consumption* (1996). London: Routledge.

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