Addicting via hashtags: How is Twitter making addiction?

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Abstract

Persons, substances, bodies, consumption: an ever widening process of 'addicting' is

underway in Western societies. In this article, we turn our attention to the production of

addiction on the microblogging social media platform, Twitter, as an important emerging site

in which the addicting of contemporary societies is also occurring. Our analysis explores two

questions. First, we investigate the ways in which addiction is enacted via Twitter. How is

addiction being made on Twitter? Second, we ask how the technology of Twitter itself is

shaping meaning: how do the technological 'affordances' of Twitter help constitute the kinds

of addiction being materialized? While we find a multiplicity of meanings in the 140-

character messages, we also find a pattern: a tendency towards extremes – addiction riven

between pain and pleasure. In addition we find significant areas of commonality between

approaches and notable silences around alternatives to common understandings of addiction.

We argue that the constraints on communication imposed by Twitter technology afford a

'shorthand' of addiction that is both revealing and productive. Illuminated is the importance

of addiction as a piece of cultural shorthand that draws on and simultaneously reproduces

simplistic, reductive addiction objects. In concluding, we consider what these realities of

addiction being enacted through Twitter can tell us about contemporary conditions of

possibility for drug use in society, and for individual subjectivities and experiences.

Key words: Addiction, Twitter, Hashtag, Affordance, Science and technology studies

Introduction

Persons, substances, bodies, consumption: an ever widening process of 'addicting' (Fraser, Moore & Keane, 2014) is underway in Western societies. In a compelling illustration of this process, Coonfield (2008, pp. 80-1) provides a list of addiction objects, activities and experiences that spans the entire alphabet, each item supported by a corresponding citation to scholarly literature or popular media: 'Advertising', 'bowling', 'catalog shopping', 'happiness', 'killing', 'negativity', 'the X-files', 'yoga'. Notably, as Coonfield observes, the list can be completed even without the conventional objects of addiction: alcohol, drugs, gambling, sex and eating. In our use of the term 'addicting' we do not mean to suggest that we are witnessing an alarming expansion in the numbers of unwell people in society. Rather, following Fraser, Moore and Keane's (2014) use of Steve Woolgar's notion of gerunding – adding 'ing' to a seemingly commonsense concept to emphasize its constitutive action – we argue that society is increasingly being subjected to (and by) the logic of addiction. Precisely how is this addicting going on? In the book, Habits: Remaking Addiction, Fraser, Moore and Keane trace the multiple and contingent enactments of addictions occurring within expert scientific discourses and knowledge-making practices. They also explore addictions as enacted within the accounts of people targeted by related health education efforts: for methamphetamine use, alcohol consumption and healthy eating. Other scholars have also examined key sites in which addiction is being made: the media and popular culture, as well as the quotidian practices of everyday life (Hargrayes, 2015; Rantala, 2013; Tiger, 2015; Zappavigna, 2014a). In this article, we turn our attention to the production of addiction on social media, examining the microblogging social media platform, Twitter, as an important emerging site in which the addicting of contemporary societies is also underway. Our analysis explores two questions. First, we investigate the ways in which addiction is enacted

via Twitter. How is addiction being made on Twitter (Law, 2011)? Second, we ask how the technology of Twitter itself is shaping meaning: how do the technological 'affordances' (Latour, 2002) of Twitter help constitute the kinds of addiction being materialized? While we find a multiplicity of meanings in the 140-character messages (as well as in the material to which these messages point), we also find a pattern: a tendency towards extremes – addiction riven between pain and pleasure. In addition we find significant areas of commonality between approaches and notable silences around alternatives to common understandings of addiction. We argue that the constraints on communication imposed by Twitter technology foster or 'afford' a 'shorthand' of addiction that is both revealing and productive. Illuminated is the importance of addiction as a piece of cultural shorthand that draws on and simultaneously reproduces simplistic, reductive addiction objects. In concluding, we consider what these realities of addiction being enacted through Twitter can tell us about contemporary conditions of possibility for drug use in society, and for individual subjectivities and experiences.

Background

Twitter was launched in March 2006. In March 2015, Twitter Inc. reported nearly 646 million registered users, with 290 million of these actively using the platform. In the USA in 2015, Twitter was used by an estimated 23 per cent of adult internet users (Duggan, 2015). This is more than double the proportion of people who used Twitter in 2010 (Smith & Raine, 2010). In Australia in 2015, Twitter was used by an estimated 17 per cent of adult internet users and in the United Kingdom, around 19 per cent of online adults used the social media platform (Kemp, 2016; Sensis, 2015). An estimated average of 58 million messages, referred to as 'tweets', are posted each day (Statistic Brain Research Institute, 2015). Twitter is referred to as a 'micro' blogging site because messages are limited to 140 characters. Links to

websites (weblinks), as well as pictures and video, can also be posted, along with 'emojis' – small digital images or icons, such as the 'smiley-face' or a stylized cup of coffee. Twitter account holders 'follow' (in other words, subscribe to) other accounts, and messages from these accounts appear in a list called the account holder's Twitter 'feed'. No permission is required to follow a Twitter account holder (unless an account holder makes their account private). Follower-followee networks constitute the basic social ties guiding the flow of information on Twitter. In contrast to other social media, such as Facebook, Twitter does not require these social relationships to be reciprocal: celebrities, for example, often have millions of followers but follow relatively few other account holders (Schmidt, 2014). Twitter account holders post their own tweets and can share the tweets of those they follow by 'retweeting' to their own network or by 'liking' a tweet (this 'like' function replaced the previous 'favorite' [sic] function in November 2015). When posting a tweet, a Twitter account holder can also 'mention' another account holder by including that account holder's unique Twitter name, known as a Twitter 'handle'. Marwick and boyd (2011) have described the audience – the real and potential viewers of tweets – as a 'networked audience'. This audience contains both one's own social connections but also unknown followers which makes it both personal and public. On Twitter, the audience can also communicate with the speaker, providing opportunities for the audience to influence the information presented by the speaker. Because producers of tweets cannot know who actually reads their messages, Marwick and boyd argue that they imagine the audience. Since 2007, Twitter users have increasingly begun to include hashtags in their messages – the hash (#) symbol followed by a word (e.g., #addiction) or expression (e.g., #canthelpit). Hashtags aggregate all tweets on a particular topic into a list that can be readily found via the Twitter search function, and viewed and responded to in a 'distributed discussion' (Bruns & Burgess, 2011, p.1) of a topic (Weller et al., 2014; Zappavigna, 2011). Hashtagged tweets afford the tracking of tweets

independently of established follower-followee networks. This renders a tweet more visible and substantially expands the potential audience (Weller et al., 2014).

Twitter was initially conceived as a 'friend-following and messaging utility' (Rogers, 2013, p.356) through which friends could keep each other up to date on their activities. As a consequence, the service and the tweets themselves have often been dismissed as inconsequential or banal: 'pointless babble' (Weller et al., 2014, p.xxx). Over time, however, the forms and content of Twitter messaging practices have evolved. The service is now also seen as an important tool for circulating 'real-time' news and events (the practice of hashtagging plays a central role here). It has also been embraced as an avenue for advertising and self-promotion by celebrities, commercial and professional organizations and individuals (Rogers, 2013; Sharma, 2013; Weller et al., 2014). These transformations in purposes have been mirrored by changes in estimates of the broad demographic composition of people who use Twitter. Historically, the social media platform has been seen as dominated by younger, educated people from urban environments. In 2010, figures from a widely cited, ongoing US survey suggested 14 per cent of online adults aged 18 to 29 years used Twitter compared with seven per cent of people aged 30 to 49 years (Smith & Raine, 2010). However, by 2015, this survey found similar proportions of people in these age groups used Twitter (32% of 18 to 29 year olds, 29% of 30 to 49 year olds; Duggan, 2015). People older than 50 years remain less likely to use Twitter although these proportions have also increased over time (Smith & Raine, 2010; Duggan, 2015). Use of Twitter also appears to be increasing among people with lower levels of education and among people who live outside urban areas (Duggan, 2015). Estimates of the demographic composition of Twitter users are based on a handful of small population surveys, often conducted by marketing companies (Duggan, 2015; Kemp, 2016; Sensis, 2015). Moreover, use of Twitter is being taken up by increasing numbers of

government agencies, media organisations, individual journalists, academics, health and welfare organisations, social movements and a range of commercial organisations (Weller et al., 2014). This further increases the potential diversity of people who use the platform and renders it difficult to know just who is using Twitter.

Recently, Twitter has also come to be seen as a valuable dataset. Voluminous collections of tweets have been gathered by researchers, and the entire Twitter stream is now archived by the United States Library of Congress (Rogers, 2013). Twitter lends itself to research given its various conventions. As Rogers (2013, p.7) notes, these include: 'RTs [retweets] for significant tweets, #hashtags for subject matter categorization, @replies [replying to a tweet by a specific Twitter account holder or mentioning that account holder in one's own tweet] as well as following/followers for network analysis and shortened URLs for reference analysis'. The 140-character limit per message similarly renders Twitter attractive for some kinds of textual analysis (Sharma, 2013; Szto & Gray, 2015; Thornton, 2013).

The technological features of Twitter – its networking and information dissemination structures – afford new forms of social relations and sociality and new forms of interpersonal and public expression and communication. For example, boyd, Golder and Lotan (2010, p.1), note that the convention of retweeting is both a form of information diffusion (copying and rebroadcasting) and also generative of an 'emotional sense of a shared conversational context' comprising the 'public interplay of voices'. Bruns and Burgess (2011) highlight the generative capacities of hashtagging for the 'rapid formation of ad hoc issue publics' – groups of participants who form around a unified, common topic, where the senders of these messages directly engage with one another to discuss breaking news and other significant events. Examples include political issues such as #iranelection or #occupywallstreet and

event-related hashtags such as #hurricanekatrina or #earthquake. Extending the notion of the generative capacities of hashtags, Sharma (2013) argues that 'Blacktags' – racialized hashtags associated with 'Black Twitter' (mainly African-American) users – are constitutive of the 'Black Twitter' identities they articulate and interact with. The phenomenon of Blacktags, Sharma contends, emerges via the technocultural assemblages of Twitter – its network structures, trending algorithms, hashtags as replicative memes and the meanings and affects of tweets.

In these respects and others, Twitter erodes traditional separations between producers and consumers of information, increases the visibility of the 'ordinary' person, allows new possibilities for public discussion and debate and, it has been suggested, has the capacity to democratize public discussion and shift authority away from the established knowledge-making elites of science and traditional media (Murthy, 2012; Sharma, 2013; Thornton, 2013). Ready access to the multiple discursive realities rapidly circulating within Twitter affords possibilities for 'poetic world-making' – of producing new perspectives and constituting new understandings of society (Fraser, 2006a).

Literature review

Twitter research spans a range of disciplines and covers many different issues. Analyses have been conducted within the disciplines of sociology, media and communications studies, education, political science, information and computer sciences, epidemiology and public health. Research topics have included: social networks; information diffusion; identity performance; sentiment and opinion; and real-time event detection such as earthquakes, political uprising or influenza outbreaks. Methods have included linguistic, social semiotic and discourse analyses of Twitter message content; and even whether 'social impact' on

Twitter might predict scientific citations (Crooks, Croitoru, Stefanidis, & Radzikowski, 2013; Eysenbach, 2011; Paul & Dredze, 2011; Rentschler, 2015; Rogers, 2013; Small, 2011; Zappavigna, 2015).

Twitter is also emerging as a resource for examining substance use. For instance, several researchers have conducted analyses of Twitter 'chatter' relating to cannabis ['marijuana'], alcohol consumption ['drinking'], 'hash-oil' or tobacco (Cavazos-Rehg, Krauss, Fisher, et al., 2015; Cavazos-Rehg, Krauss, Sowles, & Bierut, 2015; Daniulaityte et al., 2015; Myslín, Zhu, Chapman, & Conway, 2013). These studies examine expressed 'sentiment' (simply positive or negative) and broad thematic content of tweets (expressions of desire for substances, descriptions of substance use). For example, Krauss and colleagues (2015, p.1) explored the 'normalization' or discouragement of 'hookah' [a form of tobacco pipe] smoking on Twitter. They collected tweets that mentioned hookah and coded the messages for 'normalization' (that is, tweets that 'made hookah smoking seem common and normal' or that portrayed 'positive experiences with smoking hookah') as well as tweets discouraging hookah smoking. In general, the research on Twitter talk about substance use is concerned with quantifying the proportions of tweets that are 'pro-' or 'anti-drug'. In cases where tweets themselves are examined, basic descriptive content analysis is undertaken. For example, Krauss and colleagues (2015, p.3) identify seven 'themes' in hookah tweets. These included: 'the tweeter recently used hookah'; 'the tweeter wants/plans to smoke hookah'; 'the tweet mentions a song or music'; and 'the tweet mentions sex or romance'. The substance use-related Twitter research does not explore discursive meanings and constructions of substance use, nor does it examine addiction.

More closely aligned with our own work, sociolinguist Michele Zappavigna has also explored substance use on Twitter. In contrast to the public health-oriented studies outlined above, Zappavigna's interests lie with forms of sociality and 'community building' engendered through Twitter, and with enactments of identity in tweets. In one study, Zappavigna (2014a) highlights how tweets that include the hashtag #coffee propose shared values and 'bonding' around the quotidian practices of drinking coffee. Zappavigna argues that two key identities are enacted in #coffee tweets: what she calls the 'coffee connoisseur' and the 'coffee addict'. She proposes that such hashtagged tweets simultaneously enact affiliation (aligning people into a community of value around coffee) and identity (where people express particular evaluative dispositions). In another study, Zappavigna (2014b) looks at the tweets of new mothers in order to explore enactments of parenting identities. Here she also applies a substance-addict categorization, this time in relation to tweets that reference 'need' for wine as a panacea to the demands and stresses of parenting. Zappavigna's work explores the social meanings and effects of Twitter talk related to substance use. Her analyses also highlight that Twitter talk glosses ideas of addiction (as need for wine, for instance). However, Zappavigna does not set out to directly analyze concepts of addiction expressed on Twitter (and nor do any of the tweets she provides as examples include the word addiction). Our study, in contrast, specifically analyses addiction-related Twitter talk in order to explore the ways in which addiction is being materialized and framed through this emergent communication technology.

In focusing directly on addiction our research is situated within a small but growing body of literature that explores enactments of addiction in contemporary society. As scientific accounts of addiction dominate policy-making, service provision, resource distribution and so forth, much of this work has attended to the enactment of addiction in scientific knowledge-

making processes. Scholars have also explored the tensions and gaps between expert discourses and addiction as enacted by people positioned as the subjects of addiction — substance consumers, 'overeaters', gamblers and so on (Campbell, 2007; Fraser et al., 2014; Weinberg, 2013). In this respect scholars have also explored the meanings and concepts of addiction held by affected people (Fraser et al., 2014; Weinberg, 2013). In addition, the ways in which addiction is enacted in popular culture have also received attention. Here, most often, analyses have explored fiction, film and television (Brodie & Redfield, 2002; Daniels, 2012; Hargraves, 2015).

Conceptions and enactments of addiction circulating among lay publics have received relatively little attention from researchers. Some exceptions include Furnham and Thomson (1996) and recent research by Muerk and colleagues (2014a; 2014b). However, in these studies, researchers explicitly ask participants for their understandings of addiction, and the addiction object is often already framed for participants by the particular research questions (for instance, asking if participants agree that addiction is a brain disease). How addiction figures, and is mobilized, in undirected, 'real-time' lay public discourse – casual speech, conversations between friends and so forth – remains understudied. This is in part because, aside from ethnographic research, such casual social interactions are relatively inaccessible to researchers. With the advent of social media, however, new possibilities have emerged for exploring lay public discussions and interactions as they unfold in 'real-time', including those relating to addiction. Indeed, some work has already been done in this area. Recognizing the value of social media for making visible the interactive construction of addiction, Tiger (2015) explores constructions of addiction emerging through the comments posted by visitors to 'celebrity gossip blogs' – websites hosted by individuals who post their opinions about the activities of celebrities. Tiger analyses the conversational threads posted in response to a

well-known blogger's comments on the actor, Lindsay Lohan. She finds that interactive discussion of celebrity tends to reproduce dominant accounts of habitual drug use as both moral failing and sickness, best managed via incarceration or coerced treatment.

To our knowledge, our study is the first to bring together social studies of addiction concepts and social studies of Twitter content. Its aim is to explore enactments of addiction on Twitter, the ways in which addiction is being made on Twitter and the kinds of addiction being that are materialized through this social media platform. We consider this important for two reasons. First, dominant contemporary enactments of addiction as disordered compulsion have very real and serious implications for and effects on the lived experiences of people positioned as subjects of addiction – pathologization, criminalization and ongoing experiences of stigma and discrimination (Fraser, Moore and Keane, 2014). Exploring the ways in which addiction is made raises the question of how it might be made otherwise. Second, Twitter is emerging as a significant new site of public discourse, accessed by large numbers of people who are simultaneously consumers and producers of the discourses circulating in the millions of messages posted every day. It is important to examine how Twitter may be helping frame addiction for so many people and whether Twitter is remaking addiction through its particular social and textual relations and technological affordances.

Approach

The ubiquity of the addiction concept belies its contested and uncertain character.

Throughout the approximate 100-year history of the concept, definitions and meanings of addiction have undergone significant shifts. In dominant biomedical and psychological accounts, addiction is articulated as a 'chronic relapsing disease' of disordered consumption (Fraser et al., 2014; Reinarman, 2005). Such accounts identify physiological (tolerance,

withdrawal), psychological (craving, loss of control over substance use) and social (neglect of obligations) experiences and feelings as defining 'symptoms'. In recent times, neuroscientific accounts have increased in prominence. These refine the disease concept, specifically, to a disease of the brain. Here, the disease of addiction is held to arise from alterations to the circuitry of the brain that are caused by drugs (or, indeed, any pleasurable human activities – sex, eating and so forth) 'hijacking' the 'normal' brain reward system (Campbell, 2007; Fraser et al., 2014; Vrecko, 2010). These health-related approaches to addiction are widely held to offer an effective alternative to moralizing accounts of addiction that, advocates say, once dominated the field (Fraser et al., 2014).

Social science analyses of addiction offer more varied and complex accounts. Some draw attention to the different articulations of addiction according to social and cultural context, and issues such as race, gender, class, and across time and place (Fraser et al., 2014; Reinarman, 2005; Room, Hellman, & Stenius, 2015; Weinberg, 2011). These accounts challenge the idea of addiction as a stable, unified, pre-existing disease entity. They highlight instead the constructedness of addiction, its contingency on social and historical forces, and therefore its multiplicity. Indeed, some scholars have argued that the emergence of the very concept of addiction is inextricably tied to Enlightenment ideas of rationality and self-control (Derrida, 1993; Fraser et al., 2014; Sedgwick, 1993).

This article is located within this tradition of critical social science work on the construction of addiction. Influenced by poststructuralist and science studies theory, we treat the processes of addiction construction as ongoing. On this view all entities, including addiction, are continually being made and remade via networks, or assemblages, of contingently and temporarily gathered knowledges, objects, technologies, bodies, selves and practices (Fraser

et al., 2014. As STS scholars John Law and Annemarie Mol have argued in many contexts (Law, 2011; Law & Mol, 2002; Mol, 1999, 2002), objects, phenomena, indeed, realities themselves, are made in practice and they must be made and remade again in order to remain stable. As practices vary across sites, social locations and through time, realities – for our purposes addictions – are multiple and open to change. Our interest is in exploring the multiple ways in which addiction is enacted into being, in the 'kinds of being it is coming to be said to possess' (Fraser et al., 2014, p.237), and in the multiple locations into which these discourses and practices of addicting are inserted and through which they emerge.

In conducting our investigation we also draw on Bruno Latour's work on technology and its relationship to the social and to human intention. In particular we focus here on his discussion of 'technological affordances' (for a related example of this approach, see Fraser, 2013). In his article 'Morality and technology: The end of the means' (2002), Latour begins his discussion by noting the continuous history of co-development between human being and technology, arguing that the human and the technological are inseparable. Indeed, he says, to be human is to embody technology. If this is the case, approaches to technology that present humans as able to simply 'use' technology, or, in the face of technology-related problems, to withdraw from it or reject it, are spurious. We can no more merely use technology or abandon it, he says, than we can 'use' our humanity or abandon it.

For Latour, the technological object embodies or enfolds (here he cites Dagognet, 1993) what Michel Serres calls a 'garland of time', and it is into this garland those who encounter the object step, or insert themselves. He uses the example of a hammer here, spelling out the historical, geographical and cultural spaces and phenomena that make up this technological object. Thus the hammer is made up of many elements, all of which lend it shape and other

attributes. In this respect it would seem, it always already exceeds neutrality. Likewise, it always exceeds human mastery.

If subjects cannot simply use or master technological objects, how, precisely, should the relation between the two be conceived? For Latour, all uses of technology create change, or involve translation. In engaging with technologies, 'affordances' are created – capacities and possibilities at once. Technologies are so complex they do not offer a direct route from intention to ends. Instead, Latour argues, they create a 'detour' in the pathway from intention to ends. Using a technological object, that is, offers only indirect access to goals. Why does this indirectness and complexity matter? They mean that, in the process of taking up technological objects, the intentions or ends the subject began with tend to mutate. We are changed by the use of technological objects and so are our circumstances and the ends to which we originally aspired.

In this article we take up this approach in understanding the relationship between subjects, the technology of Twitter, and the phenomenon of addiction. We ask what happens when subject, technology and intention enact each other in constituting addiction. What kinds of enactments of addiction does Twitter afford, how is addiction changed, if at all, in its encounter with this technology, and what might both be said to do to the subjects commonly taken to be their masters?

Method

Like other social media data, tweets are commonly placed in a category called 'big data' (Weller et al., 2014). An illustration of the scale denoted by this term can be found in the aforementioned hookah study by Krauss and colleagues (2015, p.e121) which drew on a one-

month stream of tweets totaling 'approximately 14.5 billion'. Given the sheer volume of potential data, researchers have devised ways of sampling from the Twitter stream: collecting within particular time periods, selecting tweets from particular account holders or focusing on specific events or 'searchable talk' generated through deployment of the Twitter hashtag convention (Zappavigna, 2015). Even when delimiting data collection to searchable talk, however, the volume of data can remain overwhelming. In the Krauss et al. study, for example, from the full set of collected tweets, the authors selected only those tweets containing the terms hookah, hooka, shish, or sheesha. This search query still returned 358,523 tweets.

As noted, addiction is characterised by a lack of consensus on definitions and meanings. This means the concept is articulated in scientific and public discourse via many different terms. Such diversity is also evident on Twitter. For instance, a range of related but non-identical generic terms for addiction ('dependence', 'substance abuse') were identified. As were substance- or activity-specific terms, such as 'alcoholic', 'workaholic', 'shopaholic' and 'internet addict'. Addiction is also discussed in particular terms relating to treatment. Here, Twitter search queries using the words 'recovery' and 'sobriety', for example, return high numbers of tweets and accounts. As our interest in this article lies with exploring the diversity of meanings and uses of the particular term 'addiction' on Twitter, we limited (or constructed) our dataset by focusing on hashtagged searchable talk specifically referencing addiction. We did so because the term has popular currency, it is widely understood and it is the term most commonly added to the expanding array of activities being brought under its purview – 'internet addiction', 'sex addiction', 'food addiction' and so on (Pienaar et al., 2015).

Three substantive addiction hashtag terms were identified: the nouns #addiction and #addict and the adjective #addicted. In addition, our dataset includes addiction-related Twitter *accounts* displayed under the hashtag #addiction. On its desktop version, Twitter displays the #addiction information organized under various categories. These include the 'top' #addiction tweets and 'live' #addiction tweets. Twitter also displays an 'accounts' category. These accounts belong to people or organizations who employ the word 'addiction' either in their account username (e.g., the Twitter account attached to our Social Studies of Addiction Concepts Research Program has the username 'AddictionWatch'), their Twitter handle (e.g., our handle is @addictconcepts), or somewhere in their 'profile' – the brief biographical summary (maximum 160 characters) people may add to their Twitter account.

In collecting these tweets and account profiles we aim to explore their qualitative content. Specifically, we analyze the diversity of addiction concepts and meanings deployed on Twitter, and the ways in which these are mobilized. Because our focus is on in-depth analysis of instances rather than making generalizations about frequencies or patterns, and because we were obliged, like other researchers, to limit the scale of our data, we selected addiction-related tweets from just one (arbitrarily selected) day: Wednesday the 31st of July 2015. No public events of any particular addiction-related significance or relevance occurred on this day.

Our Twitter search returned: 580 tweets using #addiction; 324 tweets using #addicted; and 106 tweets using #addict (seven of these were in languages other than English and were excluded from analysis leaving a total of 99 #addict posts). The #addiction search also returned 98 addiction-related Twitter accounts. These data were gathered by manually selecting and copying the July 31st tweet streams for the three hashtags from the desktop

version of Twitter. The three separate Twitter hashtag streams were pasted into word processing files for management and then the documents were imported to QSR International's NVivo 10 for coding. As we have noted, an important aspect of Twitter is that it offers researchers new possibilities for exploring casual social interactions and discussions. In our hashtag dataset, only a small proportion (around 6%) of the tweets were parts of conversations. Of these, an even smaller proportion comprised conversations specifically about addiction (less than 1% of all tweets). Therefore, although the ways in which addiction is enacted interactively within Twitter conversations is of interest and merits further exploration, we do not examine this in the analysis we present here. Given our data collection strategy and the fluidity of Twitter itself, we make no claim to a comprehensive or representative sample. Nor do we claim to have comprehensively captured all aspects of addiction as it is enacted on Twitter. Doing so, given the scale of Twitter, would be a monumental task. Rather our analysis is exploratory and aims for depth rather than breadth.

The tweets we use as examples are reproduced as they appear on Twitter. While Twitter usernames, handles and messages are publicly available (although some people do choose to make their posts private), in this article, we have chosen to anonymize the tweet posts in order to minimize identification of private individuals. In cases where we do report Twitter usernames and handles, we do not associate these with specific tweets.

Making addiction through Twitter talk

We begin our analysis with an examination of the ways in which addiction is articulated and materialized within the discourse of the hashtags #addiction, #addicted and #addict and in the addiction-related Twitter accounts. In this section, we analyze the ontologies of addiction enacted on Twitter. As we will argue, far from emerging as the unified, stable disease entity

enacted within expert scientific discourse, addiction as enacted on Twitter is complex and multiple. What is immediately apparent here, is that addiction is enacted as a phenomenon equally characterized by misery and pleasure, desperation and triviality. All aspects of everyday life, and seemingly limitless persons and practices, are framed as, and subjected to, the logic of addiction. In this we find no clearer illustration of the processes of 'addicting' that we argue are underway in Western societies. To make our case, we begin by examining Twitter talk deploying the three addiction-related hashtags.

Addiction talk

Within the three hashtag tweet streams we find addiction enacted through a number of different textual modes. We call these modes 'formalizing', 'reproducing', 'destabilizing' and 'remaking'.

Formalizing addiction

Formalizing tweets present addiction 'facts', report addiction-related news, information and research, offer advice and support for managing addictions, express opinions on addiction, circulate stories of 'recovery' intended to inspire or direct people to treatment services.

Within these tweets, addiction is treated as a self-evident disease: articulated through conventional expert scientific discourse. Here, addiction is a materialized as a pathology of disordered compulsion located within individuals – a serious problem requiring intervention. The following tweets illustrate this.¹

#addiction is a shadow haunting everyone whether they realize it or not. Not limited to drugs or alcohol. Chips, tv anyone? #thought

Addiction is no joke, so take control and sober up [weblink] #addiction

If it's destructive, you want to quit, and you can't, it's an #addiction regardless of what society says

The brain disease model of #Addiction is strongly supported by scientific evidence says NIDA Director Dr. Nora... [weblink]

Exercise – The Secret Weapon in Fighting #Addiction [weblink] via @username

Seeking professional help is the safest way to help those suffering from #addiction.

Chat with us today: [weblink]

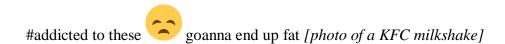
Drug addiction does not end [with] the individual with disease, but creates a ripple effect through [the] family and loved ones of the addict #addiction

In these tweets we see addiction enacted as a problem, its essence loss of control. It is an enemy to be battled, a condition requiring professional treatment, a destructive burden causing great suffering. In general, formalizing tweets address and confirm familiar objects and attributes of addiction: alcohol, drugs, gambling, eating or the internet and smart phones. However, addictions to other everyday objects and activities (chips or television for instance) also appear on occasion.

Reproducing addiction

The tweets we call 'reproducing' tweets likewise articulate addiction as a pathology of disordered consumption located within individuals, although they stop short of invoking the misery and suffering enacted in formalizing tweets. Generally, they express cultural anxieties around proper consumption, appropriate use of time and proper relations between the self and material objects or activities, as can be seen in the following examples.

The question is, how much is too much avocado? #addicted.



I should probably stop staying up till almost 4:30 in the morning watching Netflix..



Twitter got me clocking in late for work #addicted!

Too much tea Is not Good. But I can't help it. #addiction

I get way more excited over dirt racing than I should #Addicted

These tweets enact conventional addiction concepts – excess consumption (of avocado and tea), 'continuing use' (of milkshakes or watching streamed movies) despite awareness of harm, 'neglect of social obligations' (work) and 'preoccupation' with a substance or activity (dirt racing). They present addiction as bad and dangerous even if the concerns are trivial. In doing so, they reproduce and reinstantiate the pathologized and problematized addiction

objects of expert scientific discourses. However, the humor in them means they cannot be read simply as confirmatory reproductions of scientific accounts. Instead, the very mundanity of the objects and activities constitutes a rather different addiction object: a bad condition still, but one that is ordinary (all too human?) rather than exceptional.

Destabilizing addiction

In stark contrast to the 'formalizing' and 'reproducing' tweets which rely on and reproduce conventional narratives of addiction as a condition of misery and suffering, are the addiction tweets we call 'destabilizing'. Often light-hearted, humorous and playful, these tweets are celebratory in tone: offering a positive, even laudatory, view on intensity of attachments to material objects and social practices. As the following examples show, the playfulness and humor of destabilizing tweets is frequently signaled by the inclusion of emojis.

People know I'm [a]sleep because my twitter will just stop randomly #addicted #like #arianagrande

Getting a new tattoo, once you get one.. You can't stop #tattoos #addiction #nogoingback

Getting the urge to buy a purse, and there's a nice one on sale #addiction

You know you're addicted to your #Iphone when it calls a lawyer and takes out a restraining order. #addicted

@FoodNetwork you are going to make me an #insomniac with your great shows at night! #addicted #CantStopWontStop

Irreverence is also common in the destabilizing tweets. This may be seen in the following tweets, the first being an ironic appropriation of twelve-step addiction discourse (i.e. the syntactic structure followed by members at AA meetings when introducing themselves) and the second being a whimsical pun that brings together notions of addiction 'recovery' with the lyrics of a familiar dance song, the *Hokey Pokey*.

Hi. My name is [name]. I'm a habitual phone checker. #canthelpit #addicted

I was addicted to the Hokey Pokey but I turned myself around #addicted #hokeypokey #free #wonderland #logic

The celebratory tone, humor and irreverence of destabilizing tweets contests and undermines, we would argue, the moderation central to the addiction objects enacted in scientific accounts. A clear illustration of this is seen in the admonishing tweet directed to @FoodNetwork which includes an additional hashtag expression – the defiant '#CantStopWontStop'. Moreover, these tweets also destabilize pathologized addiction objects by, more often than not, materializing addiction as pleasure. They cover an extensive range of material objects and activities, constituting the pleasurable stuff of everyday life. Adrenalin, 'apps' (mobile device applications), musical bands, beauty products, books, chocolate, desserts and cakes, coffee, fashion, fast food, football, games (computer and mobile phone), internet movie streaming, men's clothing, shoes, smartphones, smoking, songs, stock-market trading, tanning, tattooing, television shows and vegetables (avocado, cauliflower, salads).

All these are enacted on Twitter as objects of addiction and objects constituting addicted and addict subjectivities. The following tweets provide illustration:

Me + iced coffee = True Love Forever



#coffeelove #icedcoffee #allthecoffee #happy #addict [personal instagram weblink]

binge watching @CW_The100 [tv series] #addicted

@TikibooFitness [clothing store] possibly my next pair of #leggings #obsessed #addicted

Had to put the colouring down lol tad addicted #adultcoloring #adultcoloringbook #johannabasford #enchantedforest #addicted

In such tweets can be seen addiction's status as a highly productive metaphor (Fraser, 2006b; Keane, 2002) through which to express the value accorded to objects or activities, the intense pleasures provided by these objects or activities, attachment and commitment to, or earnest involvement with, them. In this respect addiction acts in a mode directly opposed to that created in the 'formalizing' and 'reproducing' tweets. It takes addiction's power and intensity and uses it to valorize and show appreciation for trivial or everyday objects and matters.

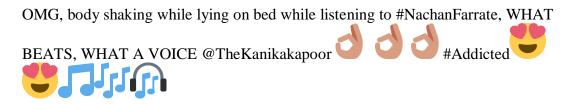
Remaking addiction

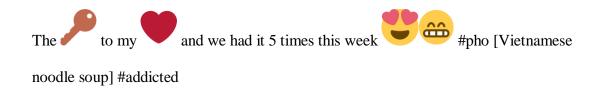
The final textual mode we identified in these hashtags comprises what we call 'remaking' tweets. More so even than in destabilizing tweets, these tweets actively constitute addiction as pleasure. In direct contrast to dominant scientific accounts, addiction is remade here as

passion, enchantment, devotion, or the marker of discerning judgement and aesthetic taste.

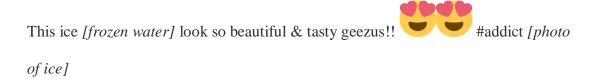
Thus the following tweets enact addiction as: all-consuming passion for archery; as appreciation of a voice, the taste of soup or the aesthetically pleasing appearance and taste of frozen water.







@KFC_UKI If I could have your incredible gravy every day I would!! #addiction



Addiction as a phenomenon of pleasure is enacted in many different ways within these tweets: as intense appreciation, attachment or desire, a feeling, experience or relation to be

celebrated or embraced. As with destabilizing tweets, addiction's status as metaphor is striking. Through this deployment of addiction concepts, everyday material objects and activities are transformed: 'sacralised and invested with extraordinary meanings' (Belk, 1998, p.8). In the remaking tweets, conventional ides of addiction are clearly disrupted: no longer pathology and problem, it is instead a desirable, admirable effect, a *bona fide* of epicureanism or fandom.

In sum, within the addiction-related messages circulated on Twitter we see familiar discourses that enact addiction as a condition of misery and suffering, signaled by practices of the self that contravene normative standards. At the same time, we see multiple ways in which Twitter enacts addiction otherwise, that is, in contrast to conventional approaches that pathologize and problematize it. In this respect, we can say Twitter affords revision of addiction. This is not to say, however, that these enactments are entirely novel, uninformed by the expert scientific discourse that makes up conventional accounts. References to key elements, withdrawal and tolerance, for instance, were common:

100% having a vampire diaries [television series] day when I get back.. Feel like I'm having withdrawal symptoms from it #addicted

Haven't drank coffee in about a week and I've had the worst migraines ever... A

Starbucks later, my headache magically disappears #Addict

Notions of craving, loss of control, preoccupation and misuse of time, as well as neglect of obligations and continuation despite knowledge of harm were similarly mobilized in tweets using the three hashtags. These widely documented 'symptoms' of addiction are apparent in

the examples given earlier, the inability to stop at one tattoo, and 'urges' (cravings) to buy a purse, as they also figure in the following examples.

It's 12:30 am & I'm already thinking about my morning ice coffee from



Spent pretty much my whole day at work online shopping.....shockkk





Just downloaded AngryBirds2. Goodbye life! #AngryBirds2 #addict

Did a @JillianMichaels work out last night and even though I can hardly move today, can't wait to do it again! #addicted

These examples illustrate the extensive public awareness of conventional addiction concepts, and the range of competing, or at least simultaneous, trajectories underway for the concept, some taking addiction away from conventional understandings and judgements, some towards it even as they take the notion up in atypical ways. At the same time, our examination of Twitter addiction-related talk identifies the presence of rather more explicitly counteracting discourses – of addiction as expertise, devotion, passion, discerning taste and judgement.

Addiction accounts

So far, our discussion has focused on enactments of addiction within addiction-related hashtagged talk. We turn now to enactments of addiction in the profiles of addiction-related Twitter account holders, finding the same textual modes in operation. 'Formalizing' enactments of addiction are apparent in the profile descriptions of some (approximately a quarter) of the Twitter accounts we collected. Notably, all but one of the accounts that pose addiction in these terms are held by professional organizations (addiction-focused scientific, government, treatment and charitable organizations). The exception is an account held by a private individual who self-identifies as an 'addict' and shares 'stories' of 'recovery'. The professional addiction accounts present their role as the provision of helpful addiction-related information, resources, or treatment and support information. For example, account descriptors of the eight most followed accounts are:

NIDAnews (31,000 followers) – 'NIDA's mission is to lead the nation in bringing the power of science to bear on drug abuse and addiction. Comment policy http://l.usa.gov/GfdwOz'

Addiction.com (27,700 followers) – 'Addiction.com is the authority on addiction, recovery & mental health issues'

Addiction Canada (12,000 followers) – 'ADDICTION CANADA Welcome to Addiction Canada, a leading and reliable name for Addiction rehab solutions in Canada'

The Fix (9,801 followers) – 'Addiction and Recovery, Straight Up: News, Drug Policy, Culture, Resources and Rehab Reviews'

Addiction Treatment (7,999 followers) – 'We are here to inform and help people with addictions. We specialize in the treatment of addiction to Opiates such as Heroin, Oxycontin, Percoset, and Vicodan'

Drug Addiction (7,497 followers) – 'Drug Addiction Treatment offers information related to drug addiction & drug rehab treatment. Alcohol & prescription drugs are also commonly abused substances'

Addiction Journal (6,811 followers) – 'Publishing peer-reviewed research on alcohol, illicit drugs, tobacco and behavioural addictions'

Everything Addiction (6,724 followers) – 'Everything Addiction is one of the best sites to find information about addiction, from types of addiction and treatment, to the latest news and public policy'

Via their profile descriptions, these accounts enact addiction as a set of stable and agreed upon facts. In the process they imply that science can tell us precisely what addiction is and they invite readers to access these authoritative sources in order that they too may come to understand addiction. Despite this self-presentation as providers of comprehensive information and authorities on addiction, the profiles rarely if ever provide informative statements on the nature of addiction. In these short texts, addiction is taken as known. This is perhaps understandable in light of the wide dissemination of conventional addiction concepts (as noted above) but it also serves to illustrate the status of addiction as a 'worn-out metaphor' (Fraser, 2006b), with all the political implications this carries: the establishment of normality and deviation, of common sense and its lack.

Importantly, enacting addiction as a set of stable and agreed upon facts is ill-founded, as we can see when we examine more closely the profiles of these Twitter account holders (and as our discussion of hashtagged addiction talk has already indicated). Most account profiles in our dataset (72 of 98) sit within the textual modes we identify as 'destabilizing' or 'remaking'. Most accounts are held by private individuals, although some are held by businesses. Within these profiles, addiction is frequently enacted as a positive phenomenon, operating most obviously as metaphor. It is attachment, passion, dedication or devotion, aesthetic appreciation and specialized expertise. In line with the 'remaking' tweets already discussed, many of these accounts express fandom (music artists feature heavily here) or epicureanism. Examples of highly followed accounts within this set include:

BigAssAddict (84,900 followers; most followed account in this set) – 'Addicted to fat asses Follow the blog [weblink]'

Addicted to Cheer (58,500 followers; 4th most followed) – 'The one and only A2C. Bringing you a whole new meaning to the word addicted! #addictedtocheer #A2C'

TATTOOS ADDICTION (40,600 followers; 8th most followed) – 'Our bodies printed as blank pages to be filled with the ink of our hearts Do not own image posted ** #

For Promotions Email – user@gmail.com'

Trailer Addict (35,300 followers; 10th most followed) – 'Top Spot for Movie Trailers'

Addicted Magazine (28,700 followers; 13th most followed) – 'Addicted – the best in Music, fashion, Film, travel, beauty and so much more. Join us & get Addicted today!'

Daniel the TV Addict (20,900 followers; 16th most followed) – 'The Original TV Addict'

Outlander Addiction (16,900 followers; 21st most followed) – 'Outlander Addiction is fan-based community of all things related to Diana Gabaldon's Outlander book series, and upcoming Starz television series'

MyCupCakeAddiction (14,400 followers; 23rd most followed) – 'Elise: Foodie |
YouTuber | Pastry Chef | Blogger | Sweets and Baking Enthusiast | Food & Travel
Vlogger Beautiful food makes me happy:)'

As with the hashtag tweets, these 'destabilizing' and 'remaking' accounts enact addiction as part of everyday contemporary life.

Taken together, the hashtagged talk and Twitter accounts indicate the sheer multiplicity and diversity of persons, substances, bodies and practices currently being framed via ideas of addiction. While dominant ideas of addiction are enacted – addiction as misery – we also see addiction enacted otherwise – as pleasure, dedication, expertise, discerning appreciation.

Indeed, these extremes are sometimes enacted within a single tweet:

Favorite/least favorite place to be #ouch #addicted [photo of a person being tattooed]

Significant within the enactments of these two extremes of addiction are their commonalities, however. Even within the destabilizing and remaking modes, scientific terms and objects are reproduced, articulating addiction's co-constitution with ideas of autonomy and volition, and normative judgements about proper consumption, social relations and use of time. Significant too are the silences: the absence of alternatives to established understandings of addiction, addictive substances and other objects and subjectivity.

So far we have discussed messages without attending directly to the medium. It is to this indispensable aspect of the enactment of addiction on Twitter that we now turn.

Making addiction through Twitter affordances

As noted in our earlier discussion of technological affordances, technologies cannot be considered neutral. All technologies entail particular affordances, and in this context it is important to observe that Twitter affords particular enactments of addiction (see also, Sharma, 2013). In this section we consider the relationship between the technology's features and constraints and the content and tone of the tweets and other Twitter text we have analyzed so far. We identify two main aspects of Twitter as a technology that can be said to afford specific enactments of addiction: networking functions and character limits.

One of Twitter's key attributes is its networking capacity, which offers several features to facilitate connection. First, account holders can follow any other account holders (unless the account is private). This affords opportunities for diffuse and diverse encounters with the multiple enactments of addiction being materialized on Twitter. For instance, an account holder's personal Twitter feed might include enactments of addiction made by NIDAnews,

celebrity Stephen Fry and Daniel the TV Addict, alongside enactments of addiction occurring in the tweets of a work colleague and a family member. Second, hashtagging extends the reach of messages beyond an account's network of followers. This expands further the possibilities for encountering Twitter's multiple addiction objects. Also, many tweets include more than one hashtag, for example '#coffee #addiction', or '#ninjafishing (a mobile phone game) #addicted'. This means that people who search on topical hashtags, the ninjafishing game for example, also encounter multiple enactments of addiction and its various objects and practices. It is through such means that the addicting of so many aspects of daily life occurs on Twitter, growing exponentially via its rhizomatic (Deleuze & Guattari, 1987; Duff, 2014) networking structure.

The affordance perhaps most directly shaping the enactment of addiction, however, is the 140-character limit imposed on messages. This character limit has a host of important effects. It means messages must be extremely short, and encourages simplification because little room is available for explanation, elaboration or nuance. For example, in the following tweets we see simple familiar enactments of addiction as a condition of suffering, of neglect of social relationships or as a matter of brain chemistry.

Seeking professional help is the safest way to help those suffering from #addiction.

Chat with us today: [weblink]

#Recovery is giving your spouse, your family, your friends the best of you. It's letting them know you need them more than your #addiction.

Dr. Nora Volkow: #Addiction is much more than "Just Saying No" [weblink] #Brain #Research

The purposes of these tweets is to persuade – that professional addiction services are essential, that embracing treatment (recovery) will make for happy, loving social relationships, and that science has determined the nature of addiction. In order to persuade within Twitter's imposed character limits, the messages rely on conventional and familiar notions of addiction. They also rely on simplistic buzzwords (#Recovery, #Brain), appeals to emotion (safest, suffering), as well as legitimizing appeals to authority (#Research, Dr Nora Volkow [current director of NIDA], professional). To complicate addiction, to introduce new ideas or deviate from established understandings – for example, that addiction is not always constituted by suffering and harm, that some people change their relations with substances without professional intervention and that treatment success rates are modest – would be to undermine their own persuasive purposes.

In addition, Twitter's strict character limit renders it highly intertextual. By constraining text volume it invites reliance on cultural symbols, commonplaces and other forms of shorthand to establish meaning. Indeed, the emergence of hashtagging practices has been directly linked to the constraints on meaning-making arising from Twitter's character limit (Zappavigna, 2011). According to Zappavigna (2011), hashtags serve to indicate the 'aboutness' of tweets and, while ambiguities around interpretations and spellings can introduce a variety of meanings, over time, repeated use of specific hashtags stabilizes a sense of shared meaning. In the texts we examined for this article, the hashtag #addiction tends to have just this kind of classificatory function, acting as a topic marker indicating the semantic content or the 'aboutness' of the tweet. While addiction clearly operates itself as a piece of cultural

shorthand, what this reliance on the hashtag erases is the complexity of addiction. Addiction is enacted here as simple matter of fact, a problem about which we may receive information or for which we might undergo treatment, with no insights into how the addiction problem is constituted. Even in tweets that do address the meaning of addiction – for instance, noting specific 'symptoms' to support claims to 'addicted' or 'addict' identities – complexities are rendered invisible. As we have seen, for example, addiction is reduced to a single 'symptom' – an urge to buy a purse, to binge-watch a television show or drink another coffee. Thus, despite Twitter's potential for public discussion and debate and therefore in theory to challenge contested concepts (see, for example, Rentschler, 2015), its technological affordances seem mainly to work largely in the service of existing knowledge, reproducing the simplified and reductive addiction objects of dominant expert discourse, thereby 'addicting' contemporary society in largely familiar terms.

Conclusion

In this article we have explored how addiction is being made on Twitter. Our analysis shows multiple articulations of addiction objects. A 'formalizing' textual mode enacts the stable, fixed addiction disease objects of conventional scientific accounts. At the same time, 'destabilizing' and 'remaking' textual modes enact addiction as multiple and complex: as passion, attachment, dedication and expertise. These multiple enactments stabilize addiction as disordered desire even as they act to destabilize the unified coherent negative addiction entity proposed by scientific expertise by linking it to many objects and practices, and at times rendering it as a positive experience. The tensions and gaps, the different articulations and partial enactments of addiction produced in the competing knowledge-making processes and practices of scientists, consumers, the media and others all unfold simultaneously in the continuous stream of Twitter talk.

Importantly, however, as we have shown, within this multiplicity commonalities remain. Normative notions of proper subjectivity, proper relations between selves and objects, and the determining power of material objects and activities on which conventional accounts of addiction rely emerge over and over in the messages we have examined, regardless of the particular textual mode adopted. Indeed, the ready use of cultural commonplaces and other shorthands of addiction illuminates just how widespread dominant addiction concepts and logics are in public discourse.

Alongside the multiplicity of (fundamentally conventional) addiction formulations we have identified, our analysis also reveals notable silences around experiences of stigma. The vast array of addictions, addictive objects and addicted subjectivities visible on Twitter – shoe addicts, archery addicts, television series addicts – does not include those 'addicts' otherwise the subject of intense social attention in the form of disapprobation and discrimination: methamphetamine addicts, gamblers, alcoholics and heroin addicts. Twitter may well afford a seemingly endless proliferation of 'good' or 'happy' addicts, but the 'bad' addicts remain on the margins – not least because even the contrary uses of addiction on Twitter (those that play on addiction to describe passion or intensity) do so by reproducing the addict's apparent departure from the autonomous, rational, self-regulating subjectivity compulsory to belonging in Western neoliberal societies. Thus, dominant ideas of addiction and proper subjectivities and practices persist. In this respect we would argue that despite Twitter's putative capacity to democratize public expression and discussion, it plays a significant role in reproducing existing social arrangements and values. More specifically, our analysis indicates that articulations of addiction on Twitter generally act to reinstate the authority of scientific knowledge, and fail to challenge or alleviate stigma.

As we have argued, of course, these effects are inextricably bound up in a process of technological affordance. The meaning-making afforded by Twitter's character limit tends to reinforce reliance on commonplaces, metaphor and other shorthand, commonly (although it must be said, not necessarily) re-enacting reductive addiction objects: reproducing and confirming conventional stable, unified addiction disease objects.

In Twitter we find a clear illustration of the addicting of contemporary society. A multiplicity of addictions, addiction objects and addicted selves is being made and remade through the rapid and diffuse discursive flows circulating through this emerging communication technology. What is less apparent, however, is any realization of Twitter's transformative potential. Latour's formulation of technology reminds us that Twitter's potential is neither determined by human intention nor impervious to it. It can be turned to specific uses, but its own attributes necessarily impact on, and even reshape, those uses. And along with those uses, also changed are the very ends to which they are applied. In just this sense is Twitter both repeating familiar meanings of addiction and remaking them, yet not in ways entirely controlled by human agents. Its supple networking capacity and ability to reach so many so quickly should allow wide contestation of narrow and marginalizing dominant accounts of any social phenomenon, including addiction: to remake addiction and in the process to generate new possibilities for contemporary everyday life, selves and society. Whether this development is still on its way, or is instead too heavily impeded by the specific affordances the technology entails, remains to be seen.

Endnotes

¹ Tweets have been edited on occasion to correct minor but potentially confusing typographical and other errors.

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