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Paper for DISCOURSE & SOCIETY

Title: 'What was your blood sugar reading this morning?': Representing diabetes self-management on Facebook

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'What was your blood sugar reading this morning?': Representing diabetes self-management on Facebook

Abstract

Social networking sites have swiftly become a salient venue for the consumption and production of neoliberal health discourse by individuals and organisations. These platforms offer both opportunities for accruing coping resources for individuals and a means for organisations to promote their agendas to an online audience. Focusing specifically on diabetes, this article aims to examine the representation of social actors and interactional styles on three organisational Pages on Facebook. Drawing on media and communication theories, we situate this linguistic analysis in relation to the communicative affordances employed by these organisations as they publish content online. Diabetes sufferers are represented as an at-risk group whose vulnerabilities can be managed through forms of participation specific to the respective organisation. More popular diabetes Pages draw on the opportunities for social interaction afforded by Facebook and combine informational and promotional content to foster communication between the organisation and its audience. By encouraging reflexive management of diabetes risks, these Pages contribute to the construction of 'biological citizens' who interweave habitual interactions on social networking sites with responsible self-care, consumption of health information and health activism.

Introduction and research questions

Recent UK health policy has represented health information as a precursor to patient empowerment and the public's ability to choose healthier lifestyle options and 'cope better with any long-term condition or disability' (Department of Health, 2012: 14). According to this policy, health information produced by state healthcare services and by the public itself is to be mediated – at least in part – through online social media technologies and smartphone applications. However, rather than directly providing web-based services through the National Health Service to support patients with long-term health problems, the UK government defines its own role as 'stimulating a market' (2012: 65) in which commercial and voluntary organisations can fulfil this role. At the same time, a growing body of clinical literature advocates the use of social media to support patients with long-term health problems, and particularly those conditions which require significant levels of self-management (Koteyko et al., in press). The result is increased market opportunities for organisations to provide services for people who seek out information and support for long-term conditions using social media.

The UK government's promotion of both health information that supports patient responsibility and the privatisation of online health support can be situated within a wider neoliberal approach to healthcare reform adopted in Western states in recent decades. This neoliberal agenda favours an increased role for specialised, competitive private and third sector organisations in meeting the public's health and welfare needs (McGregor, 2001). In promoting the rights and autonomy of the healthcare consumer, neoliberal discourse emphasises the individual's responsibility for accessing relevant expert health information and proactively managing their health risks in order to decrease the demands on state health and welfare systems (Teghtsoonian, 2009). As well as shaping economic markets, therefore, neoliberalism similarly configures notions of responsible citizenship in relation to health,

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with accountability for health devolved from the government to the level of the self-governing, responsible and enterprising individual (Harvey, 2005; Rose 1996; 1999). Rose and Novas (2004) identify such enterprising subjects as 'biological citizens': individuals who define themselves in relation to biomedical knowledge and increasingly regard their biomedical corporeality as central to their identity and social participation. Biological citizenship is practiced through a range of different personal and collective activities related to health, including consuming and producing health information to manage present and future medical concerns, contributing capital and labour to illness-related organisations and actively minimising the risks of future illness through medical intervention and lifestyle adjustments. These activities, they argue, reconfigure everyday social behaviours, commercial practices and ethical values in relation to health and medical risks and shape relationships of power between the individual, state and other organisations in the process.

Social media – and social networking sites such as Facebook in particular – are an apt context in which to examine how contemporary discourses of biological citizenship are reproduced. Since its launch in 2004, the membership of the social networking site (SNS) Facebook (www.facebook.com) has grown to over 1.3 billion users, the majority of whom access the site daily (Facebook, 2014a). Facebook's vast and global membership means that it represents a significant medium through which contemporary discourses are produced and consumed, including those around health and illness. Fox (2011) notes that over a third of US adults have accessed social media sites related to health while a survey by the US National Research Corporation found that the majority of people who use social media for health purposes indicated Facebook as their site of choice (94% of 23,000 participants). One in four respondents said what they learned on this site was 'likely' or 'very likely' to impact their future health decisions (NRC, 2011). People with diabetes mellitus, where daily self-care is crucial to long-term health, are regarded as a group that may benefit substantially from the

networking and information-exchanging functions of SNSs (Shaw and Johnson, 2011). This potential is also suggested by the volume of webpages on Facebook and the web generally that are dedicated to providing support for people with diabetes (Greene et al., 2011). In light of this, this paper critically examines Facebook as a site of interaction in which commercial, non-profit and government health organisations publish content related to diabetes, and considers the discourses of biological citizenship they produce.

While originally based around users creating individual personal profiles, Facebook now contains Pages[i] dedicated to organisations, businesses and products. Reflecting their presence on the Web more widely (Seale, 2005), government-funded health institutions and major charities from across the globe have established diabetes-related Pages on Facebook. These include Pages for specific hospitals, research organisations, campaign groups and voluntary organisations who use Facebook to communicate with large audiences in order to influence their on- and offline behaviours (Park et al., 2011). In addition, a large number of private organisations use Facebook as a venue in which to promote products and services for diabetes sufferers such as blood glucose monitors and insulin pumps, private diabetes healthcare and interventions purporting to reverse diabetes. These commercial interests are not always foregrounded by the Page authors. For instance, 'Diabetes Care by Bayer' (https://www.facebook.com/DiabetesCareByBayer) publishes content on symptom recognition, diabetes related jokes and self-management practices as well as advertisements that link to Bayer's external websites where their medical products can be viewed and purchased.

As Thurlow (2013) notes, such Pages depend upon the deliberate blurring of boundaries between private practices of social interaction and help-seeking and commercial practices of advertising and marketing such that corporate goals are realised through the personalised discourse that characterises Facebook (Papacharissi, 2009). Strategically employing features

of informal, social talk allows these organisations to stylise corporate messages in the form of personalised interactions between friends and thereby broaden their audience appeal (Thompson, 2012). By studying such institutional Facebook Pages, we therefore aim to extend research on online health information by Seale, who calls for a critical approach to online health discourse that 'may shed light on the relations of production that lead to particular [health] representations becoming prominent'(2005: 540).

From a critical discourse analysis perspective (Fairclough, 2010), Facebook can be regarded as 'an instrument for articulating power' (Rambe, 2012: 296) between individuals and health organisations that utilise the site to meet their own goals within the online health market. Adopting this perspective in the analysis below, we examine how UK-based diabetes organisations adapt these online spaces to customise communication in accordance with their own agendas, and the extent to which online architecture allows them to do so. Specifically, we address the following questions:

1) What lay and professional social actors are represented by diabetes organisations as they publish content on Facebook and how do these representations contribute to the wider interactional styles on their Pages?

2) How do the interactional styles of each Page relate to the organisations' uses of Facebook's architectural affordances?

Analytical framework

To address the first question above, we utilise Van Leeuwen's (2008) model of social actor representation to consider which social actors are represented in (and excluded from) the Facebook posts and the degree of personalisation with which social actors are construed. For example, social actors may be referred to individually (for example, through the use of

singular pronouns, Fairclough, 1992) and by name (individualization and nomination) to emphasise their significance or assimilated under functional categories such as 'doctors' (functionalization) that construct a consensus between individuals and effaces their differences. In our data, differences in individualization and assimilation of different social actors indicate points of personal identification for the readers of the Facebook Pages as well as the functional roles that are presented as relevant to diabetes. In representing these social actors and the processes they engage in, the texts can also include 'legitimations, reasons that either the whole of a social practice, or some part of it must take place' (Van Leeuwen, 2008: 20). While the absence of overt legitimation in a text can suggest that the reality it constructs is considered 'common sense' and hence needs no explicit justification, Reisigl and Wodak (2001) illustrate that such common sense reasoning can be supplied by topoi. By topoi, we refer to the implicit or explicit premises used to support an argument. For example, Reisigl and Wodak (2001: 73-77) describe the 'topos of advantage', which can be paraphrased as 'if an action will be useful, one should perform it', and the topos of danger, which is paraphrased as 'if a decision bears dangerous consequences one should avoid it'. Hence certain activities related to diabetes – such as dietary modification or contact with healthcare professionals – can be implicitly (de)legitimised within a text simply by constructing their consequences as favourable or harmful. Identifying the topoi employed on the Facebook Pages can therefore render explicit the underlying assumptions used by these organisations to justify particular actions related to diabetes.

In considering the contribution of social actor representations to the Pages' wider interactional styles, we draw particularly on Fairclough's (1989) concept of 'synthetic personalisation' and its application to online communication (Thompson, 2012). Synthetic personalisation refers to the instrumental use of linguistic features that minimise social distance and effect solidarity between participants so that discourse intended for a large

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audience is contrived as personal communication. While specific features of synthetic personalisation vary between the Pages we examine below, typical ways in which it is realised include use of personal forms of address, emulation of spoken grammar and the use of interrogative and imperative structures.

The variable use of questions and imperative structures to promote audience interaction also points towards each organisation's use of Facebook's interactional architecture to support particular forms of communication. To examine the use of these architectural features more fully, we draw on research that applies the concepts of communicative affordances (Hutchby, 2001) and digital interactivity (Jensen, 1998) to SNSs in order to focus on the activities that are enabled and constrained for a user of a particular technology. Affordances are not wholly defined by the properties of a technology itself but rather by how opportunities for action are perceived by different users of a technology (Treem and Leonardi, 2012). In the present study, this entails regarding diabetes-related content published on Facebook as the outcome of a discourse practice in which certain functions of a technology are employed by organisational agents who use Facebook. Treem and Leonardi (2012) argue that, when compared to other forms of computer-mediated communication such as email, SNSs are characterised by the affordances of visibility, association, persistence and editability.

Visibility refers to the multiplied 'means, methods, and opportunities for presentation' (Bregman and Haythornthwaite, 2001: 5) afforded by SNSs, which allow behaviours and information to easily be made public to others within a network. The multiple options for presenting content (text, video, images) and interacting through SNSs lower the costs of producing and accessing publically available content related to health (Jones, 2013). Related to visibility, SNSs enable users to display their association to other users, creating a visible network of social connections that can be traversed. On Facebook, this is realised through the processes of Friending other users and Liking Pages, allowing users to grow and articulate

their social network (boyd and Ellison, 2007) and create a sense of community. Unlike video conferences or instant messaging, content produced on SNSs persists after an individual user logs out. This means that SNS content may be browsed, annotated using comments, searched and recontextualised by other users (Erickson and Kellogg, 2000). On Facebook, this persistent content is organised by a Timeline format, which displays posts in reverse chronological order, with newly posted content appearing at the top of a Page and older content slipping further down. As Ruth Page (2012: 191) claims, ordering content in this way prioritises recency in Facebook posts, making new content the most salient and enabling users to construct a sense of co-presence with their audiences despite the asynchronous nature of the communication. Finally, while content posted to Facebook is stored persistently, users are afforded the capacity to edit and revise content they intend to communicate or have already posted. This can be achieved, for example, through editing text-based posts and other types of content or deleting other users' contributions on your own profile or Page. Whereas Treem and Leonardi (2012) discuss editability in the context of individual users, here we will pay attention to moderator activity as a means of controlling diabetes discourse on Facebook.

Having addressed the two research questions above, this paper's Discussion section then considers how the representation of social actors, interactional styles and employment of affordances on the Facebook Pages relate to wider contemporary practices around health and illness.

Data: Diabetes Pages on Facebook

The Facebook Pages analysed below were initially identified through querying 'diabetes' and 'diabetic' using both Facebook's own search function and Google (www.google.co.uk)[ii] . We read the first 500 Pages from each search to identify whether they were primarily related to diabetes treatment, research, technologies, support or fundraising and were run by UK-based

organisations. Where this was not obvious from the content of the Page itself, we followed links to the Page owners' external websites to identify their geographical location.

The resulting Pages were sorted according to whether the authoring organisation was a third sector non-profit organisation, commercial business or a body affiliated with the UK National Health Service (NHS). This category was not always made explicit by the Page authors themselves and was ascertained using the Page owners' external websites when necessary. Organisations were classified as commercial if they did not claim to be charities or NHS-based and appeared to generate revenue primarily through selling diabetes products and services and/or online advertising. This resulted in a pool of Facebook Pages belonging to 19 non-profit organisations, 16 commercial businesses and 16 NHS-affiliated organisations or services. Of the three categories, diabetes Pages owned by private businesses have the highest number of 'Likes' (subscribers) with an average of 19,928 Likes per page compared with an average of 3,601 Likes for the non-profit organisation Pages. Pages run by NHS-affiliated organisations have by far the fewest members, with a mean of 126 Likes. Membership is also very unevenly distributed in each category, with a few Pages carrying very high memberships and the majority having under a thousand subscribers. Like figures provide an approximate indication of the popularity and audience size of the Pages as, once subscribed, Facebook users will receive selected content from Pages on their own Facebook Newsfeeds. However, Facebook users may also view Pages without subscribing to their content, so Likes statistics likely underestimate the actual number of users who view a Page.

In contrast to early theorisations of the Web as a democratic medium in which alternative discourses can compete equally with hegemonic institutions, the distribution of Likes suggest that the majority of individuals subscribing to diabetes Pages on Facebook receive content filtered through a small number of highly subscribed professional organisations (Seale, 2005). In light of this, we selected the most Liked Page from each organisation type for

analysis (Table 1) and extracted for analysis the fifty most recent posts made by each Page owner.

Organisation type	Facebook Page Name	Likes	Organisation details
Commercial	Diabetes.co.uk	141,938	Privately owned web-based company
Non-profit	Diabetes UK	73,255	UK's largest diabetes charity
NHS-affiliated	My Diabetes My Way	549	Support-oriented diabetes website funded by NHS Scotland

Table 1: Diabetes-related Facebook Pages (Like figures are correct as of 21/10/2014)

Representations of social actors and interactional styles

Diabetes.co.uk

The most commonly represented social actors in posts to the Diabetes.co.uk Facebook Page are the Page members themselves, who are individualized and nominated (Van Leeuwen, 2008) through second person pronouns that appear in 68% of the sampled posts. Diabetes.co.uk explicitly constructs its audience as people with diabetes through possessives such as 'your diabetes' and 'your blood sugars' and assume a relatively high level of diabetes-related knowledge through their recurrent use of jargon such as 'HbA1c', 'having a hypo' and 'ketoacidosis'. When nominated using second person pronouns, the Page audience is represented as participating – or potentially participating – in a range of diabetes self-management practices such as experiencing symptoms of high and low blood sugars, trying low carbohydrate or low fat diets and taking particular medication. These processes are typically embedded in direct questions to the Page members, which appear in 70% of the sampled posts. Hence the above processes are realised as:

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28/01/2014   Are you on Metformin? How are you getting on with it?

21/01/2014   Have you had success with a low carb or low fat diet?

20/01/2014   What symptoms do you usually have when your sugars go high or low?

These questions orient to particular aspects of the experience of living with diabetes, encouraging the Page's audience members to narrate their own experiences in the comments below each post. These questions also encode presumptions about users' active self-management. For example, the Page authors regularly publish posts asking the Page users what they had for breakfast that morning and what their blood sugar reading was:

22/01/2014   What was your blood sugar reading this morning? We hope you are all OK!

16/01/2014   What was your blood sugar level this morning + what did you eat for
             breakfast?

These seemingly mundane dietary questions construct the Page audience as actively participating in self-monitoring and management of their blood sugar and diet. The singular 'blood sugar reading' and 'blood sugar level' in these posts address the Page members as individuals rather than a collective group and invite users to report their own blood glucose readings in the posts' comments. In doing so, these questions also enable Page members to provide brief narratives of successful – or unsuccessful – daily management by regularly publishing their blood sugar readings and how they adjust them, allowing users to participate in a public performance of self-management. User expertise is also implied through the range of questions posed to the Page audience, for example:

22/01/2014   Innovative type 2 diabetes drug Xigduo gets EU green light --->
             http://bit.ly/1msQ9eq

What are your thoughts on this?

As well as experiential knowledge of individual diabetes management, the Page authors use questions such as these to position their audience as having relevant knowledge of biomedical technologies and research. Users can illustrate this expertise through posting comments to the posts while hyperlinks enable users to visit Diabetes.co.uk's external website to receive more information.

Alongside persistent references to the Page's subscribers as 'you', the sampled messages also use categorisation and aggregation to refer to diabetes sufferers in terms of collective groups (Van Leeuwen, 2008). In contrast to the active and expert 'you' constructed on the Page, these posts represent diabetes sufferers as participants in relational and material processes that emphasise their vulnerability to medical complications ('Retinopathy can affect all diabetics'; 'type 1's are more at risk!'; 'Erectile dysfunction affects a HUGE 35-75% of male diabetics!'). As a result, while individual members of the Page audience are discursively positioned as knowledgeable about diabetes issues and active in their own self-care, 'diabetics' as a whole are passivized and construed as vulnerable to additional medical conditions. While detailing these health risks, hyperlinks to Diabetes.co.uk's external website included within these posts also imply a path to avoiding them. Such posts can therefore be seen to draw on topoi of danger and advantage (Reisigl and Wodak, 2001: 75-77): the posts introduce a danger for diabetes sufferers before directing users to follow links to Diabetes.co.uk's external website in order to 'Find out more' and know 'the causes and treatment'. These hyperlinks also establish a consistent problem-solution structure in these posts (where presentation of risks is followed by information helpful for avoiding them) that legitimises participation in the organisation's main website as a means to avoid future health risks.

Aside from Page readers and people with diabetes generally, posts by Diabetes.co.uk also frequently represent processes attributed to the Page owners. Reflecting the personal forms of address used to refer to the Page's audience, Diabetes.co.uk's posts consistently refers to the organisation using plural first person pronouns 'we', 'us' and 'our'. This strategy represents the organisation as a collective of individuals rather than the impersonalised 'Diabetes.co.uk', and hence constructs a personal rather than institutional identity as the author of their posts. The simulation of interpersonal communication is also established through imperative clauses that instruct readers to follow hyperlinks to recipes, information pages and discussion forums on their external website (Koller, 2009). Posts consistently relate to the immediate time of publication ('A lie in on a Sunday is just what we need!') and employ present tense verb forms and proximal temporal deixis ('What is your blood sugar reading this morning?') to mark the interaction as ongoing in the present. Posts further emulate spoken interaction with the audience through rhetorical questions which assume an initial inquiry on the part of the audience ('Those lumps that appear on your injection site? They're called lipohypertrophy!') and through tag questions ('But it can all be a little confusing, right?'). In addition, Diabetes.co.uk also constructs a personalised identity for the organisation through the predication of mental and behavioural processes to themselves:

27/01/2014   We hope you all had a fantastic weekend, unfortunately it is Monday again - boo!

18/01/2014   Ahhh we do love a lie-in on a Saturday!

By including evaluative lexis ('fantastic', 'unfortunately'), affective markers ('boo!') and reference to the time of posting, these posts are more typical of status updates found in individual profiles that report on relatively mundane features of users' offline lives (Page, 2012). Representing the organisation in relation to pedestrian offline behaviours further

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backgrounds the organisation's commercial interests in favour of constructing a personal, humanised identity. In constructing an identity outside of Facebook, the Page authors also appear to present themselves as engaged in dietary regulation. For example, as part of a daily post that provides low-sugar recipes, the Page authors state:

24/01/2014   Our dish of the day is this delightfully delicious and low carb Vanilla
Cheesecake - hey, it's the weekend we can indulge!

As well as implying the Page owners have specific offline diets, the authors also exploit the referential ambiguity of 'we' to claim a collective identity with the audience of diabetes sufferers. That is, by claiming that they too 'indulge' in a diabetes-specific recipes, the Page authors imply that they are also diabetic, or at least subject to the dietary regulation undertaken by many people with diabetes. Taken together, these Facebook posts strongly exhibit linguistic features of synthetic personalisation (Fairclough, 1989), which is employed to personalise discussion of biomedical risks and their management, background the owners' organisational identity and to encourage users to publish narratives by entextualising their own diabetes experiences through Facebook.

Diabetes UK

In parallel with Diabetes.co.uk, posts published by the Diabetes UK Facebook Page employ an informal, personalised style characterised by emulating elliptical spoken grammar, extensive pronominal reference to the Page's subscribers and themselves, and use imperative and interrogative clauses to simulate direct interaction with the Page audience. As such, the Page's viewers – nominated as 'you' – and Diabetes UK – predominantly nominated as 'we' – are the most frequently represented social actors in the Page's posts. A problem-solution structure is also identifiable in posts to the Diabetes UK Page through messages that begin with a direct question to the Page's audience followed by an invitation for them to participate

in Diabetes UK's organisational events. In contrast to Diabetes.co.uk, however, these questions seldom attribute self-management practices to the Page's subscribers. Instead, references to 'you' construe Page members as potential fundraisers and participants in Diabetes UK research campaigns:

22/01/2014 *We just wondered if you might fancy something a little different this year…*

How about swimming the English Channel? But your way. At your own pace. In your local p*ool. Confused? Let us explain…*

06/01/2014 *Have you made your New Year's Resolution yet?*
Get active this Spring and help raise vital funds! […]We have a number of guaranteed runner spaces available and plenty of tips to help you with your training and your fundraising– sign up today to avoid missing out!

18/01/2014 Parents! Can you help Diabetes UK make things better for children with diabetes at school?[…] For more information and to book a place, please email [name] on [email address].

As the latter two examples illustrate, posts to Diabetes UK's Facebook Page construct audience members using functionalised categories (Van Leeuwen, 2008) including 'parents' and 'runners' and, elsewhere, 'carers', 'supporters', 'volunteers' and 'swimmers'. These categories orient to Diabetes UK's Page members in a range of agentive social roles, identifying them as carers of children with diabetes and fundraisers. As the final extract suggests, Diabetes UK's posts also represent people with diabetes as a collective category defined by their condition. In these cases, 'children with diabetes', 'people with diabetes', and 'people with the condition' are consistently passivized and represented as beneficiaries of processes attributed to Diabetes UK and its Facebook audience who perform material

processes such as 'providing support', 'making a difference' and 'improving the lives' of diabetes sufferers. As a result, Diabetes UK's posts represent diabetes sufferers as an homogenous and passive group dependent on the activities of the organisation and its volunteers. Individuals with diabetes are seldom mentioned within posts, nor represented as participants in processes of self-management or interactions with healthcare professionals, who are excluded from the Page's posts or, once, suppressed by a passive construction ('Do you remember the date you were diagnosed?'). Instead, while employing similar features of synthetic personalisation (Fairclough, 1989) to Diabetes.co.uk, the Diabetes UK's Page constructs diabetes as a category requiring collective action from fundraisers and research participants who act on behalf of diabetes sufferers, rather than an illness involving medical complications and the development of self-management expertise.

My Diabetes My Way

In keeping with Diabetes.co.uk and Diabetes UK, the most frequently represented social actors on the NHS-run My Diabetes My Way are the Page's audience – nominated using second person pronouns – and diabetes sufferers represented through categorisation. Of these, direct address to Page members using 'you' are the most common and represent the Page participants in relation to health risks that arise from their own lifestyles but which can also be managed on an individual level:

18/11/2013   Smoking when you have diabetes massively increases your risk of developing angina, heart attack, stroke and poor circulation.

11/11/2013   Alcohol can cause hypoglycaemia in combination with insulin or diabetes tablets. Always have a supper containing carbohydrates and check your blood sugar regularly. Remember you are also at risk of hypoglycaemia overnight and into the next day.

Outside of managing these risks, members of the Page are represented as interacting with healthcare providers and seeking out professional healthcare information:

15/11/2013   Please discuss any changes in hypo warning signs with your diabetes nurse.

30/09/2013   If you would like to access your local NHS patient information leaflets click Local Services link on MDMW home page. http://ow.ly/plFOc

Taken together, My Diabetes My Way's posts predicate a narrow range of processes to the Page's audience, who are construed in terms of responding to their susceptibility to short and long-term illness and interacting with healthcare services to monitor their condition and access information. Similarly, categorical groups included in the My Diabetes My Way posts, such as 'people with diabetes' and 'people with uncomplicated diabetes', are presented in relation to specific medical and legal obligations, such as having 'regular blood checks' and informing the UK driving authorities about their condition. My Diabetes My Way also make reference to diabetes using the functionalised label 'patients', explicitly identifying Page users as participants in healthcare systems:

04/12/2014   All patients with diabetes over the age of 40 should consider taking statin medication to control Cholesterol (fats in the blood). Discuss this with your diabetes care team at your next appointment.

20/11/2014   People with diabetes should have a regular blood pressure check. Many patients with diabetes need blood pressure medication. Blood pressure should be 130/80 or below to reduce the risk of heart disease and stroke.

As with the Diabetes.co.uk Page, categorical representations of diabetes sufferers on My Diabetes My Way are associated with physical health risks that should be managed. However, unlike the for-profit organisation's posts, which exclude healthcare professionals,

My Diabetes My Way includes representations of diabetes 'care teams' and nurses, constructing them as sources of information on symptoms and medication use. Additionally, rather than inviting Page subscribers to provide their own opinions on health risks and management, My Diabetes My Way offer direct recommendations for diabetes patients as a whole. In place of open questions about subscribers' preferred management strategies, the deontic modality employed in these posts clearly communicates the authors' beliefs about desirable diabetes patients and how the authors would 'like them to be' (Koller, 2012: 25). Specifically, for My Diabetes My Way, deontic modality constructs an ideal diabetes patient who actively risk manages their health by changing their lifestyle and submitting to regular monitoring and the uptake of medicines. Like Diabetes.co.uk, the rhetorical weight of these obligations depends upon a topos of danger – the premise that people will seek to minimise dangerous scenarios – that implicitly promotes lifestyle changes and medical technologies as a means to avoid health risks (Koteyko, 2009). This topos implies an audience of diabetes patients who are both responsible and willing to manage their long-term health in accordance with medical advice. This norm is also communicated through imperative clause structures, which feature in 23% of the sampled posts, and which realise directions to interact with health professionals and specific instructions on how the audience should manage low blood sugar levels:

15/11/2013 Remember to check your Blood Glucose Level for driving and to carry both fast and long acting CHO at all times. Blood sugar must be above 5 mmol/l. It takes at least 45 minutes for brain function to return to normal following a hypo.

25/11/2013 When treating hypoglycaemia, remember 15-20g fast acting carbohydrate, (eg lucozade, full sugar coke, jelly babies, wait 15 minutes. If Blood sugar Level

still below 4 mmol/l repeat. Once Blood sugar level above 4 mmol/l take some long acting Carbohydrate. (e.g digestive biscuits or a sandwich)

While the prevalence of unexplained technical vocabulary presumes a relatively high level of diabetes knowledge on the part of the Page audience, these posts nevertheless reproduce specific instructions for diabetes self-management. In contrast with posts on the other Pages, where personal suggestions for self-management are elicited from Facebook users, the interactional dynamic suggested by these posts resembles negative stereotypes of doctor-patient interaction, in which a professional 'voice of medicine' imparts impersonal medical knowledge without acknowledgement or input of patients (Fairclough, 1992; Mishler, 1984). Accordingly, the interrogative clauses which pervade posts made by Diabetes UK and Diabetes.co.uk are comparatively rare on My Diabetes My Way, appearing in only 14% of posts. Where they are employed, direct questions to the Page audience are polar and rhetorical ('Did you know there are over 650 diabetes smart phone apps to help you manage your diabetes?') rather than invitations for Page subscribers to share expertise. As a result, contributions from the Page's subscribers in the form of comments are scarce, being seldom encouraged by the content of posts by the Page's owners and impeded by the Page's moderation process (see below).

Online affordances, interactional styles and organisational agendas

Jones (2013) argues that discourse passing through social networks is filtered by the interests and agendas of network users. This is particularly apposite for Facebook Pages, where Page owners can choose which new or existing content they entextualise and how this is conveyed, what they choose to comment on or associate with, and whether they censor other users' contributions. In the diabetes Pages analysed above, the social actors and diabetes-related behaviours recontextualised by the Page owners therefore encode assumptions about their

imagined audience and what they regard the purpose of the communication to be (Van Leeuwen, 2008: 12-13). Combined with the owners' ability to delete content from the Page as they choose, the structural affordances built into Facebook allow the organisations to dominate the main content – including how people with diabetes are portrayed – on their Pages. Phrased in more CDA terms, the editability of SNS content affords owners greater control over the discourse topics on their Pages (Van Dijk, 1991). With this control, the three organisations opt to present diabetes in relation to users' self-management and health risks (Diabetes.co.uk), organisational events and research (Diabetes UK), and specific risks and instructions for managing diabetes (My Diabetes My Way). In doing so, they position their respective audiences as informed health consumers, fundraisers and campaign participants, and diabetes patients in need of professional instruction.

Facebook's editability is also discernible in the moderation and deletion of comments to the My Diabetes My Way Page. As indicated by 'posting guidelines' on their external website[iii], the organisation exerts greater control over the content of their Page by requiring that all user comments be agreed by the Page owners prior to publication. Within the sampled posts, this included deleting at least one user comment that was deemed inappropriate (identified by the Page user posting a further comment asking why his original contribution was removed). This greater control runs counter to the participatory tradition of Facebook as a 'loose environment' based around open, social participation (Papacharissi 2009: 214) and was not apparent on the other more personalised Pages.

In terms of association, Facebook users interested in diabetes can view Pages directly and subscribe to them using a 'Like' button. Once subscribed, content from these Pages appears on a user's personalised Newsfeed along with content from their network Friends and other Pages and Groups. Users may also associate with individual units of content such as posts or comments through Liking them, or adding further comments in text and multimodal form.

For organisations, allowing users to associate with content on their Page in a variety of ways increases opportunities for user participation that can be used to attract and retain interest (Park et al., 2011). In addition to this user-led association, the organisations also actively create connections with their own existing content. Many of the posts on each Page include hyperlinks to each organisation's external website, allowing them to filter diabetes content from outside Facebook through their Pages and, in turn, channel Facebook users to their own websites to increase exposure to additional organisational material.

In terms of visibility, each organisation employs a public Facebook Page with comment-enabled, multimodal posts to make diabetes-related content and links to their external websites visible to their audiences. However, the identity of each organisation is discursively established in different ways and the enhanced visibility that separates SNSs from other web technologies (boyd, 2010) is utilised to advance specific organisational agendas geared towards promotion, advertising, campaigning and education. Posts published by Diabetes.co.uk and Diabetes UK reflect the colloquial, expressive language characteristic of personal Facebook profiles (Page, 2012) and employ features of affect-oriented discourse to perform sociality with their large number of subscribers. Although this synthetically personal discourse accords with Facebook's structural emphasis on social interaction, the high proportion of second person pronouns, problem-solution structures and interrogative and imperative clauses on these two Pages also mirrors the abundance of these features in advertising discourse (Myers, 1994). Viewed in this light, the personalised content available on Diabetes.co.uk and Diabetes UK's Pages employs sociability in the service of marketing their respective online community and fundraising events (Thompson, 2012) and providing a visible, 'authentic' voice that supports user involvement and user 'co-creation' of the organisations' value (Thurlow, 2013; Tolson, 2012).

Despite its relatively low number of subscribers, My Diabetes My Way inhibits opportunities for personalised interactions with users by presenting biomedical information without soliciting user feedback and by pre-moderating users' comments. My Diabetes My Way also utilises the persistence affordances of Facebook to limit subscriber-generated content on their Page. By deleting user comments older than six months they ensure that only their own diabetes-related content persists and is searchable over a long period of time. This practice accords with the emphasis on professional medical advice disseminated directly through the Page's posts and via recommendations that subscribers discuss diabetes management with their healthcare providers. No equivalent practices are identified on the other Pages, where owner and member contributions are permanently visible and searchable.

In contrast to the lack of state commitment to providing healthcare resources through SNSs, the foregoing analysis suggests that UK commercial and non-profit organisations have been quick to capitalise on the affordances of Facebook to propagate accessible, personalised diabetes content that is designed to foster audience interaction in this e-health market. The Like figures of each Page (see Table 1) indicate that private and non-profit diabetes organisations have attracted larger 'active audiences' (Press, 2006) of subscribers than the most popular NHS diabetes Page on Facebook, meaning that individuals are more likely to encounter messages that reflect these organisations' commercial and third-sector agendas.

Although these organisations may be explicitly oriented to improving the lives of diabetes sufferers, they nevertheless depend upon the participation of web users as supporters and consumers. For example, the interactive style adopted on the Diabetes.co.uk Page reflects the purportedly democratised nature of e-health by foregrounding non-organisational identities, lay expertise and empowerment through consumption and production of health-related content. However, the construction of lay expertise is embedded in a Page whose authors benefit financially from users' participation and users are frequently directed outside of

Facebook where they are exposed to information and promotional material provided by Diabetes.co.uk and its advertising partners. In this regard, Facebook mirrors other e-health environments in which commercial organisations employ features of synthetic personalisation to 'sell online sociality' as an intervention for ill health (Fairclough, 1989; Thompson, 2012: 398). Similarly, Diabetes UK's posts promote fundraising to help 'people with diabetes' by generating revenue which Diabetes UK can use to meet its organisational goals. In these contexts, medical discourses are interwoven with neoliberal promotional practices by organisations who are motivated by users investing in health identities and the management of (potential) illness (Koteyko, 2009).

Although its posts illustrate a more impersonal style, the My Diabetes My Way Page may serve similar financial outcomes for the state by reducing patients' long term use of healthcare services through their adoption of active, individualised strategies for minimising health risks. On the Page itself, this aim is realised through posts that deliver professional guidance on diabetes management and promote medically accepted risk management strategies. In doing so, My Diabetes My Way impede possibilities for user interactivity by inhibiting users' creation of alternative content on their Facebook Page and representing healthcare professionals as primary sources of diabetes information and care, thereby reiterating a message of patient compliance through Facebook.

Discussion

Differences in the representation of social actors related to diabetes and the wider interactional styles of each Page realise different aspects of contemporary biological citizenship (Rose and Novas, 2004). Diabetes UK attempts to foster participation in biological citizenship through public commitment to fundraising, research and political rights for people with diabetes. Diabetes.co.uk, on the other hand, emphasise online sociality based

on shared experiences of diabetes and consumption of health and lifestyle information to manage health risks. At the same time, their use of Facebook's technological affordances also opens up new frontiers of participation in health discourse that blur distinctions between public and private genres of discourse. For example, by inviting users to report their blood sugar readings, Diabetes.co.uk encourages subscribers to make their private health information visible on a public network and invite other users to comment on their biomedical functioning. This encouragement is reinforced by the visibility of Diabetes.co.uk's posts on subscribers' personal Newsfeeds, which provides a recurrent cue to engage in self-monitoring practices, report their own embodied states and receive feedback from a network of others. In doing so, personal self-management shifts to a networked activity built around sociality with other users and the commercial organisation operating through Facebook (Lupton, 2012). While this public self-surveillance is not promoted by My Diabetes My Way, recurrent references to diabetes-related health risks nevertheless encourage its subscribers to regard themselves in relation to potential biological malfunctions and exhort readers to take responsibility for avoiding risks through lifestyle changes and professional interventions. While different in their interactive styles and use of Facebook's affordances, the respective authors of Diabetes.co.uk and My Diabetes My Way both privilege a representation of the individual diabetes sufferer who responsibly manages his/her own behaviours in order to avoid risks attributed to diabetes sufferers as a whole. Along with promoting aspects of self-care, therefore, the health discourses on these Facebook Pages are bound together with contemporary neoliberal discourses of personal responsibility and normalised self-surveillance in relation to 'expert advice' from health professionals and commercial organisations. With their publication through Facebook, these messages of medical responsibility now appear alongside interactions with other members of a

subscriber's online network that are curated in their Newsfeed to blend social and organisational voices within one online space.

These findings problematise the 'empowering' perspective on social media prevalent in healthcare literature (Eysenbach, 2008); far from simply empowering diabetic users by offering them new forms of online participation with which to improve their long-term health, Facebook also provides opportunities for organisational actors to appropriate online participation for purposes of revenue generation and disciplining behaviours in relation to health (Chouliaraki, 2012; Jarrett, 2008). This function is realised most clearly in the posts above by the use of problem-solution structures and a topos of danger to implicitly validate specific self-management practices and promote online participation. Analysing problem-solution discourse structures in contemporary lifestyle media, Machin and Van Leeuwen (2003) argue that they serve to present ideologically loaded practices of professional, social and emotional management as neutral solutions to supposed lifestyle dilemmas. Similarly, problem-solution structures on Diabetes.co.uk and Diabetes UK encode the consumption of healthcare information and charity fundraising not as the enactment of neoliberal forms of health citizenship that connect them with large non-state health organisations, but as solutions to the putative risks and suffering facing 'people with diabetes'.

Conclusions

By adopting a critical discourse perspective, this paper has foregrounded the state and commercial systems in which Facebook is embedded and whose agendas are realised through their respective discursive practices and use of Facebook's interactive affordances (Livingstone, 2010; Thurlow, 2013). With the growing presence of commercial, state and non-profit organisations, personal interactions on Facebook – and personal styles of interaction that suggest social intimacy – have been colonised for instrumental purposes such

as generating revenue or regulating the population into particular ways of behaving. Consequently, while Facebook may afford individuals with diabetes increased opportunities to seek informational and social support through online networking, this medium nevertheless operates under a 'dual economy of freedom and constraint' (Chouliaraki, 2012:1) in which online participation is shaped by the interests of organisations who operate through it, as well as Facebook itself. In identifying the use of synthetically personalised discourse and features of advertising and lifestyle discourse to deliver messages of individual responsibility, we provide evidence that these Facebook Pages further the 'infiltration of neoliberal, market-driven values and ethics into day-to-day relationships' in the context of diabetes support (Marwick, 2010: 443-4).

The subscriber numbers of each Page suggests that diabetes-related Facebook content produced by private and non-profit organisations receives far higher exposure than information published by UK state health professionals. The popularity of these Pages means that the discourses filtered through them may have a far-reaching influence on public understandings and practices related to health and illness. Given the exclusion of healthcare professionals from the two more popular Pages we have examined, one aspect of this influence may be a diminished uptake of state-authored diabetes messages as chronic illness care is regarded as a process involving the enterprising biological citizen, their online networks and commercial and charitable organisations. Such a change would be largely consistent with the neoliberal healthcare policies outlined at the start of this paper. Similarly, with each Page addressing the individual users as an expert consumer, activist or responsible patient who has the agency to mitigate the effects of diabetes, these Pages concomitantly de-emphasise alternative explanations of diabetes and opportunities for collective political action that focus on, for example, the relationship between type 2 diabetes and social deprivation (Congdon, 2006).

While our analysis has examined a relatively large number of posts from Facebook Pages with sizable audiences, it has several limitations. Facebook contains several hundred diabetes-related Pages managed by organisations inside and outside of the UK, and analysis of these Pages may reveal additional representations of social actors with diabetes that reflect the motivations of their authoring organisations. Similarly, although we have predominantly focused on the linguistic content of each Page due to space limitations, Facebook posts frequently combine text with images, video, or hyperlinks. Complementary forthcoming analyses will also consider the contributions of non-verbal semiosis to multimodal diabetes discourse on these Pages and interactions in additional spaces on Facebook.

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[i] For the sake of clarity, we use capitalisation to distinguish ordinary web pages from organisational Pages, a particular type of public profile established within Facebook which can be viewed and subscribed to by Facebook's users. Pages are described by Facebook as 'public profiles that let artists, public figures, businesses, brands, organizations, and non-profits create a presence on Facebook and connect with the Facebook community' (Facebook, 2014b). Similarly, we use 'Friend', 'Group' and 'Like' to identify Facebook-specific uses of these terms.

[ii] Original searches were conducted in January 2014. Although Facebook's inbuilt search engine enables queries of its content, it does not allow the output to be filtered by the user and instead presents results that are calculated to be relevant to each individual user based on factors such as their profile information, previous search activity and Friends. As a result, additional Page were sought using Google to search for Pages within Facebook that contained 'diabetes' or 'diabetic', and then narrowed the results to webpages inside the UK.

[iii] See http://www.mydiabetesmyway.scot.nhs.uk/resources/socials/MDMW_Posting_Guidelines_v0.1.pdf (Accessed April 2014).

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