

FRIENDS LIKE MINE: THE PRODUCTION OF SOCIALISED SUBJECTIVITY IN THE ATTENTION ECONOMY

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The Value of Facebook

Over the last decade, online social networking services (SNS) have emerged as multi-million dollar companies, with substantial investment into digital media platforms reflecting the global popularity of this mode of communication – the most significant being the recent outlay of \$500m from Goldman Sachs and Digital Sky Technologies in a deal valuing Facebook at a reported \$50-75bn. Furthermore, Facebook recently filed its intentions with the US Securities and Exchange commission ‘to go public’ by seeking an additional \$5bn of investment in stocks. This article interrogates why Facebook and its assets - which represent an extended database of personal information, social relations and consumption habits - have been valued so highly. The scale of this speculative value has recently become clear, with Facebook publishing revenues of \$3711m for 2011 (*The Guardian*, 2012). It appears that companies from across the globe are increasingly turning to Facebook in order to tap into this wealth of user data, with a massive 85% of this revenue being generated from advertising. Given that the advertising interface includes a number of parameters which marketers can use to directly target the most relevant users for their products, all content generated on Facebook (as well as those sites and services which include Facebook plug-in applications) can become financially beneficial.

The contribution of personal information is encouraged by ongoing developments to the site’s participatory environment and a number of technological features have been introduced to promote and structure further engagement within Facebook. I argue here that these design choices have been predicated on the management and acquisition of attention, which has become increasingly essential to

global capitalism. In SNS users are flooded with information signals (status updates, ongoing conversations, pictures, videos, Web links, advertisements, etc.) which compete for attention; attention has therefore become an increasingly scarce commodity in the digital domain. According to Herbert Simon:

In an information-rich world, the wealth of information means a dearth of something else: a scarcity of whatever it is that information consumes. What information consumes is rather obvious: it consumes the attention of its recipients. Hence a wealth of information creates a poverty of attention and a need to allocate that attention efficiently among the overabundance of information sources that might consume it. (Simon, 1971: 40-41)

In the context of the *attention economy*, a concept which represents a central theme of this issue, this 'poverty of attention' has led companies to rethink how they market their products in the most financially efficient manner. In contemporary societies we are confronted with more information than can possibly be fully processed; therefore, attention economics emphasises the significance of designing and developing methods to swiftly and effectively direct attention in order to deliver the right advertisements to the desired target market. Recent developments to Facebook's technological infrastructure have enabled businesses to utilise the information generated by users to increase engagement with their brands by targeting relevant and suitable users with products, services and competitions. This represents an interactive platform that enables businesses to build ongoing social relationships with potential customers to encourage future purchases. As such, this article presents a political economic interrogation of the relationship between code, sociality and subjectivity that renders our data valuable.

For media theorist Jussi Parikka (2011), subjectivity must be viewed as a process inherent to 'networked ecologies'. This concept does not follow established definitions of subjectivity based primarily on consciousness, but instead can be characterised by a more 'radical material relationality and sociability' (Parikka, 2011: 37). This relational approach highlights the techno-cultural dimensions involved in the formation and capturing of attention in SNS, marking a shift from harnessing the 'eyeballs' of media audiences

towards the algorithmic sorting, channelling and organisation of social engagements and user-generated content which emerge in these networked ecologies. Within Facebook, then, the interaction between users and technology represents a cybernetic system which produces a mode of socialised subjectivity. As such, close consideration is given to the significance of the 'Like' button, which I contend must be seen as a socio-technological interaction which captures the emotive connections and engagements produced amongst the multitude of Facebook users. Through an exploration of the collaborative and socialised modes of subjectivity which emerge from the use of these tools, I suggest that proprietary online social networks are central to the subsumption of the surplus value of forms of life itself. This analysis draws on work which aligns the biopolitical production of knowledge, desire, attention and sociality with modes of 'immaterial labour' (Lazzarato, 1996; Virno, 1996, 2002; Hardt, 1999; Terranova, 2004, 2006; Coté and Pybus, 2007).

In the opening section I discuss the socialised production of subjectivity in SNS, where the elision of production and consumption has resulted in shifting notions of audiences in media scholarship. The content that comprises Facebook is produced by users; this takes the form of personal information, social communications and the exhibition of both professional and user-generated content. I argue that subjectivity emerges out of these socio-technological interactions, whilst the information produced by users has become central to the delivery of relevant and targeted marketing campaigns. The second section interrogates the economic impact of SNS in further detail, questioning how forms of communication and social activity may be considered integral to capital relations. This article frames its analysis of regimes of subjectivity which emerge within SNS alongside the theory of immaterial labour, which I explore in relation to the transmission of affect (embodied in the act of 'liking' and the contribution of user's interests). The third section examines a number of technical aspects of Facebook, most notably its advertising interface, 'Like' button and 'Open Graph' protocol. I argue that these have been designed to encourage social interactions which can be quantified in order to regulate, influence and structure attention. A Deleuzian conceptual approach is adopted to interrogate the forms of *control*, *modulation* and *dividuation* which have become principal facets for economising the social activities within Facebook.

The Socio-technical Dimensions of Subjectivity: Consumption As Production

According to a recent study released by the Pew Internet & American Life Project (2011), 47% of American adults use at least one social-networking site. The survey also concludes that Facebook is the current market leader in the US, with 92% of all SNS users stating they have a profile on this site. Facebook currently has over 800 million active users, with more than 50% logging in everyday (Facebook, 2011a). Social networking services, also called social software and social media, enable users to construct public profiles, produce content, contribute to ongoing conversations and maintain social ties within a bounded networked system. Andreas Wittel (2001: 51) suggests this marks a shift towards a more flexible, open system of 'networked sociality' which consists of fleeting and transient relations; of ephemeral yet intense encounters which are created on a project-to-project basis, and by the movement of ideas. Online social media services, then, enable and promote forms of individual expression within a networked environment, facilitating an ongoing process of becoming through the interpersonal, socialised interactions which users engage in. These developments have also been conceptualised as 'architectures of participation' (O'Reilly, 2004), 'Web 2.0' (O'Reilly, 2005), and 'participatory cultures' (Jenkins, 2008); whilst studies that focus on the creativity of the masses, such as 'collective intelligence' (Levy, 1997) and 'the wisdom of crowds' (Surowiecki, 2004), challenge traditional ideas about 'the audience' in media studies. The use of social media destabilises the traditional dichotomy between mass-communication and inter-personal communication, whilst the content and data produced by users may be received by an audience that is partly known and partly invisible and/or imagined (Jones *et al.*, 2008).

These conceptual approaches underscore the shifting role of contemporary media consumers - from passive *spectators* to engaged and collaborative *participants* in the digital media environment. As users upload, share, review, tag, rate and comment they contribute to the whole process, leading to a 'post-broadcast' model of media production which enables public citizens to express themselves in new and exciting ways (Gauntlett, 2007; Merrin, 2008). William Merrin suggests, 'In place of a top-down, one-to-many vertical cascade from centralised industry sources we discover today bottom-up, many-to-many, horizontal, peer-to-peer communication' (2008: 6). While it is clear that broadcasting *per se*

hasn't disappeared, the development of interactive, digital technology has necessitated the modification of all existing facets of production and distribution. Henry Jenkins (2006) offers a concise study of such developments and argues that the incessant convergence of technology can be understood as an intricate cultural process. For Jenkins (2006: 2), industrial and technological convergence offers a useful approach for understanding this interrelated, interconnected culture – where the flow of content across multimedia platforms, the cooperation between multiple industries, and the migratory behaviour of media audiences continually adapts the ways we create, consume, communicate and interact with each other. This has resulted in a transformation to all forms of commercial activity and social life practised in the digital media spaces across a growing network of converged devices, services and applications.

Furthermore, the popularity of SNS can be seen as an expression of a global digital culture. Mark Deuze (2002) proposes this represents an emerging value-system and set of expectations expressed in online participatory activities, where all aspects of everyday life in highly industrialized modern societies are to some extent influenced by, and implicated in, computerization. Such an approach highlights the central role that computer technology plays in modes of production, distribution and communication. Many scholars have attended to the heightened agency of technology in the contemporary digital environment, with cybernetics emerging as the focus of many studies since the introduction of the World Wide Web (Johnson, 1999; Lévy, 2001; Manovich, 2001). Such approaches are relevant to our cause since the social transactions mediated by Facebook are utilised to frame and structure the content which is displayed on screen. This constructs a dynamic, socio-technological ecology, whereby both human and machine become actors in the production of meaning and subjectivity.

Viewing such practices as ecological exchanges gives rise to methodologies which can further scrutinise forms of networked sociality, since it identifies how 'capacities of activity, thought, sensation, and affect possible to each composition whether organic or not are shaped by what it is, what it connects to, and the dimensions of relationality around it' (Fuller 2005: 174). Interactions between users, content and technology construct an open-ended topology of social relationships through the performative and communicative exchange of ideas, beliefs and desires. As such, much of the content on Facebook emerges from

within, materializing on a single plane which is immanent to both the production-consumption process and forms of control which have emerged in participatory, digital cultures. Since users are no longer separate from the information they engage with, the content shared within networked societies increasingly constitutes the lives we lead (Lash, 2007; Beer, 2009). In what can be seen as a general shift from traditional, representational practices employed by corporate mass-media, this information, and the technologies involved, become active components in the formation of socialised subjectivities (i.e. we interact and co-produce inside social networks, rather than simply engaging with content from a staged-spectatorial distance). Facebook, therefore, is comprised not only by its subjects and technical features, but also by the networked connections between them which are able to expand without limits.

Such collaborative action embodies what Marx calls the 'general intellect' – a productive multiplicity whereby social knowledge, technical operations and modes of communication are all implicit in the organization of the social and the production of value (Marx, 1973).¹ In the case of Facebook, this produces a mode of socialised subjectivity which has become an explicit form of labour under post-Fordist capital in the form of 'self-branding' (Hearn, 2008). For Jason Read, the appropriation of the self must be seen as part of the neoliberal capitalist project:

The conditions of our subjectivity... are neither individual nor part of any collective, but are the conditions of individual identity and collective belonging, remaining irreducible to each. These conditions have become increasingly important to the contemporary production process, becoming the source of new forms of wealth. They are the new commons that are increasingly becoming enclosed, privatized. (Read, 2010: 113)

These practices are therefore central to the development of socialised individuals; creative and collaborative users who utilise social networking technologies to organize and manage their social connections and communications. Here, both production and reproduction are folded into what Gilles Deleuze calls a *metaproduction*: the production of relations rather than things (Deleuze, 1992: 181; Read, 2003: 146). As Michael Hardt puts it, 'in those networks of culture and communication, collective subjectivities are produced and sociality is produced [and made]

directly exploitable by capital' (1999: 93). Social software, then, facilitate the ongoing and continuous expansion of social and economic relations; that is, networked connections which can be routinely quantified and put to work" by these technologies.

So far I have argued that SNS must be seen as interactive platforms which exhibit user-generated material and personalised media content. This represents new forms of production and distribution that exist in a symbiotic relationship with applications that allow users to connect with many other users in online social communities. These innovations have had a significant cultural and economic impact, which has led to the augmentation of new forms of monetization previously not possible: 'business models based on a notion of the consumer as producer have allowed Web 2.0 applications to capitalize on time spent participating in communicative activity and information sharing' (Cohen, 2008: 7). This view is shared by Tiziana Terranova, who notes that changes to the relationship between production and consumption are played out within a field that is 'always and already capitalism' (2004: 79). Consequently, the social and radically novel aspect of these transformations may be persistently harnessed by commercial processes. This is not to deny the significance of potential forms of empowerment which are played out in participatory cultures, but it does draw attention to the complex nature of user agency. The content generated on Facebook further disrupts existing scholarly models and concepts for studying media audiences, in that it produces a form of socialised subjectivity – a collective process of self-expression which is both directly productive for capital and immanent to the production/consumption process. This new form of 'immaterial labour', as described in the works of Maurizio Lazzarato (1996), Paolo Virno (2002) and Terranova (2004) addresses the transformations undergone by labour in its post-industrial mode, where communication and cultural practices have become integral to capital relations.

The Labouring Subject: Facebook as Social Factory

As Trebor Scholz (2009) suggests, communication has become a mode of social production increasingly mediated by commercial digital technologies. Consequently, it has become increasingly difficult to distinguish between 'life' and 'work' as the boundaries between play, consumption and production begin to blur. How can the use of social media be seen as implicit in such forms of labour in

the context of post-Fordist modes of production? And how does the socialised transmission of personal data represent a valuable commodity for informational capitalism?

In the pages of *Grundrisse*, (and further developed by scholars belonging to the Italian tradition of 'post-Operaismo') Marx suggests that as labour power becomes increasingly dependent on the cooperation and general productivity of the entire workforce, rather than the labour and skills of individuals, the capitalist mode of production no longer finds itself confined to the closed spaces of the factory. Subsequently, sources of wealth in the attention economy become dispersed throughout the whole of society, 'through technologies and human bodies, connected in new, shifting assemblages (the general intellect)' (Terranova, 2006: 29). As such, sociality is folded into a new form of valorisation where value resides in forms of life itself, within modes of expression, intensive relations, abstract knowledge, communications and affective interactions which occur throughout society. For Michel Foucault this represents the employment of biopower, as capitalism 'uses this population like a machine for production, for the production of wealth, goods and other individuals' (2001: 1012). Lazzarato expands on this cultural and economic transformation:

It is society as a whole that produces, creates and innovates, but it is only here [in the attention economy] that the realization of surplus value becomes visible, it is only here that one commands, organizes and captures this social surplus value and creates the conditions for its accumulation in the form of property. (1996: 92)

As such, all forms of social activity become organised and appropriated by capitalist prerogatives through modes of 'immaterial labour'. This neo-Marxist concept focuses on the ways in which labour has become increasingly mechanised and computerised as communication technologies transform, and become integrated within, all aspects of production (Hardt & Negri, 2000: 293; Coté & Pybus, 2007: 90). As these technologies and practices spill out of the factory and into the social, the production of value in highly mediated, networked societies becomes dependent on a socialised labour power organised in assemblages of humans and machines exceeding the spaces and times designated as 'work' (Terranova, 2006: 28). Facebook therefore represents a privatised arena where the communicative and subjective capacities

of its users can be captured as a dynamic source of surplus value as they interact and co-create, whilst subsequently being transformed through these affective relations.

Jason Read (2003), following Marx, calls this development 'the real subsumption of subjectivity by capital' (Read, 2003: 103-149), which he defines as the restructuring of social relations according to the demands of capitalist valorisation; a transformation whereby the embedded knowledges of the collective and the technical conditions of labour become internalised and integrated into the production process. As I suggest above, collective subjectivity emerges immanently within Facebook; here, the collaborative and socialised interactions between users and technology must be seen as flexible, dematerialised, database constructions, which subsequently become the principle facets of consumption. Therefore, in online social networking, and throughout networked societies, subjectivity in itself represents both the base element of production and the product of production, as elaborated by Lazzarato:

If production today is directly the production of a social relation, then the 'raw material' of immaterial labor is subjectivity and the 'ideological' environment in which this subjectivity lives and reproduces. The production of subjectivity ceases to be only an instrument of social control (for the reproduction of mercantile relationships) and becomes directly productive, because the goal of our postindustrial society is to construct the consumer/communicator - and to construct it as 'active'. (Lazzarato, 2004 [online])

Such forms of subjectivity can be considered productive since they construct both a social relationship and a digital record of the interaction which can be analysed, manipulated and acted upon on a technical level beyond the perception of the user. When seen as a 'mode of production', in Marxist terms, the cooperative interaction and creativity inherent to social media embody ideologies of self-expression and sociality which are, in turn, perpetuated by these services and practices. Here, collective subjectivities and personal information are both produced and simultaneously appropriated as means of harnessing attention, influencing engagement and driving traffic. What is more, this new subject is produced during 'free time', outside the established boundaries of wage labour. In other words, it is produced in and through consumption, through ways of

communicating, through the transmission of styles, interests and desires.

This demonstrates a specific form of immaterial labour which has been popularised in late capitalist societies; that is, the socialised production, integration and appropriation of *affect*. Affective labour, therefore, comes to embody those forms of labour which generate and circulate feelings, emotive responses, passions and aspirations (Hardt, 1999). It is important to note at this point, however, a distinction between emotion and affect. Whilst affect indicates the non-conscious and instinctual response to external stimuli, emotions are brought to bear as the cognitive contraction of such affective reactions:

Unlike emotions, which are mental phenomena, affects refer equally to body and mind. In fact, affects, such as joy and sadness, reveal the present state of life in the entire organism, expressing a certain state of the body along with a certain mode of thinking. Affective labour, then, is labour that produces or manipulates affects. (Hardt & Negri, 2004: 108)

The ongoing production and management of identity (which is expressed on Facebook profiles and the social interactions between users) can be seen as a continual generation of such forms of affect. As users persistently update and re-evaluate their profiles and social relations to reflect their evolving interests and tastes, they become affective labourers in the production of collective subjectivities. Since Facebook is subject to routine corporate data-mining, the cultural content contributed by its users (which includes tastes, preferences and interpersonal communications) is integrated into socio-technical processes designed to shape purchasing decisions and influence how users may 'spend' their attention. Facebook represents a digital enclosure of personal information that has great potential to shape forms of subjectivity. As social activities become increasingly processed and mediated by digital technologies, these interactions become the focus of forms of commercial capture, which are facilitated by the infrastructure of networked technologies and practices. Facebook's privacy terms and conditions state that users:

grant us a non-exclusive, transferable, sub-licensable, royalty-free, worldwide license to use

any IP content that you post on or in connection with Facebook (IP License). This IP License ends when you delete your IP content or your account unless your content has been shared with others, and they have not deleted it (Facebook, 2011b).

Exactly what the 'use' of this information means remains somewhat vague, although it is apparent that the aggregation of user data and metadata is the central focus of Facebook's business strategy, since this information is used to deliver and tailor relevant advertising, applications and content:

Sometimes we get data from our advertising partners, customers and other third parties that helps us (or them) deliver ads, understand online activity, and generally make Facebook better. For example, an advertiser may tell us how you responded to an ad on Facebook or on another site in order to measure the effectiveness of - and improve the quality of - those ads. (Facebook, 2011c)

Moreover, Facebook is fundamentally dependent on user co-creation, with social interactions representing both the 'content' with which users engage and the volunteered transmission of their habits and interests. Here, the collective activity of the user-base becomes directly valuable for Facebook and its affiliated partners as these interactions generate quantifiable and measurable data. It has, therefore, become increasingly pertinent to analyse those discourses of civic participation, sociability and collaborative creativity associated with social media within the contexts of immaterial labour. Such an approach must account for the highly pervasive role of SNS in the shaping of collective subjectivities, with the interface design, software and computer algorithms which encompass these services representing active components that direct and structure attention.

A Political Economy of Socialised Subjectivity: Facebook as 'Architecture of Control'

In the following section I discuss a number of technical aspects of Facebook, suggesting that the production of socialised, affective subjectivities (through technologically mediated forms of self-

expression and collaborative engagement, as presented above) is implicit in forms of control built into the site's infrastructure. Following Deleuze, the smoothing of boundaries and decoding of flows within cyberspace and throughout society embodies a new model of power, which Deleuze (1992) labels 'societies of control'. Although Deleuze's thesis was published before the introduction of the Web, it offers a critical account of the effects and consequences of digital technologies on humans and society. For Deleuze, the control society embodies a 'progressive and dispersed installation of a new system of domination' (1992: 7) characterised by modes of modulation, which departs from Foucault's account of 'the disciplinary society'. Whilst Foucault's notion of panoptical surveillance represents a form of power which moulds individuals within isolated settings, societies of control implement the continuous inflection of identity, in and through digital code. In contemporary networked societies personal information is recorded, monitored and transferred from one establishment to another; as such, all aspects of one's 'lived' experience can be held accountable and used to control access and participation in future activities. Electronic networking technologies intensify the capacity and ubiquity of this new form of social control, compiling vast flows of personal information which can be monitored remotely. Through these computerised mechanisms of control all user activity, past or present, can be called upon to influence and propagate attention online.

This development is noticeable in modern marketing techniques, which have evolved from the containment of consumers within relatively fixed notions of taste, habits and preferences – towards the modulation and monitoring of consumers' movement between stories, sites and lifestyles (Arvidsson, 2005: 458). When a database is mined for information on buying habits, leisure habits, reading habits and communication habits, users are transformed into measurable and adjustable parameters through internal, *dividuating* processes (Bogard, 2007). Deleuze's concept of the 'dividual' is beneficial for interrogating computer-based systems like Facebook since it presents a human subject that is endlessly divisible and reducible to data representations via contemporary technologies of control (Deleuze, 1992; see also Williams, 2005; Bogard, 2007). For William Bogard, 'postmodern subjectivity is defined by interaction with information meshes and the modular dividuals they produce' (2007). Here, users are abstracted and stripped down to whatever modular information is required for a particular intervention, task or transaction. SNS therefore represent commercial platforms which

simultaneously produce and control social interactions. The input of personal data and the ongoing connections generated by Facebook users can be seen as a biopolitical process of becoming subject, whereby these actions are controlled and regulated by the socio-technological features of the system. These features include the specific interface functions ('top stories', 'news feed' and 'ticker' features), communication tools (modes of commenting, status updating and 'liking'), the commercial features (sponsored page recommendations, targeted advertising, third-party plug-ins and applications), as well as the underpinning technical code and algorithms that comprise Facebook.

One of the most significant developments to the technological infrastructure of Facebook has been the introduction of the 'Like' button, which acts as an indicator of affective relationships between users and content. Originally introduced internally within Facebook, the 'Like' button allows users to quickly engage with comments, pictures, pages and videos, replacing short, emotive comments like 'awesome' and 'congratulations'. As such, I contend this tool must be seen as a form of social interaction that embodies a number of techno-cultural developments, motivated, in part, by the imposed limits of what can be posted or uploaded. In social networking and microblogging, users are encouraged to constantly renew and reconnect with their social contacts; consequently, communication becomes more fragmented, leading to the incessant generation and transmission of large amounts of small 'bits' of data (Miller, 2008: 398). Clicking the 'Like' button, then, results in an affective connection which is subsequently published on the news feed within that user's network, prompting further activity. This function is regulated by Facebook's 'Social Graph' protocol, which aggregates data across Facebook to map out internal interactions. 'Liking' can therefore be understood as a qualification of content since a record of this connection is circulated across the network, making it both more personal and social. Whilst this protocol operates on the flows of information within Facebook, the recent introduction of the 'Open Graph' functionality decentralises Facebook's methods for aggregating user data. External websites and services now have the option to install the 'Like' button plug-in, enabling 'Open Graph' to extend the key features of its predecessor to build a more comprehensive map of online connections:

If you include Open Graph tags on your Web page, your page becomes equivalent to a Facebook page. This means when a user clicks a

Like button on your page, a connection is made between your page and the user. Your page will appear in the 'Likes and Interests' section of the user's profile, and you have the ability to publish updates to the user. Your page will show up in same places that Facebook pages show up around the site (e.g. search), and you can target ads to people who like your content. (Facebook, 2011d)

In other words, this form of sociality is no longer confined to the space of Facebook, as the extensive integration of such 'social buttons' disperses Facebook interactions across the entire web (Gerlitz & Helmond, 2011). The act of 'liking' therefore facilitates an increase of ways in which connections are made between users, content, services and commercial products.

When one clicks the 'Like' button, it generates an affective relation with that content, establishing and recording those connections which occur between users and commercial companies, services, and products. This is evident of what Zwick and Knott (2009: 236-238) call the 'logic of capitalist accumulation', as all forms of consumption and everyday life are broken down into measures of information so that each consumer action becomes a statement to be inserted into various flows of data. Electronic databases, then, facilitate the flexible accumulation and modulation of social relations, since they embody:

a new plane of reality on which the traces that digital practices leave can be disembodied and reorganized into structured patterns of economic value, the configuration of which depends on the code used by the controlling agent. (Zwick & Knott, 2009: 240)

For Carolin Gerlitz and Anne Helmond (2011) this raises questions about the interrelation between the social, technicity and value online, representing an emerging form of social indexing which they label the 'Like economy'. As they suggest, the integration of the 'Like' button across the web:

allows the company to collect data that exceeds the information each user is providing on their profile and thus contributes to a re-centralization of the fabric of the web and of the flows of

information and affective association. (Gerlitz & Helmond, 2011: 19)

Furthermore, since 'social buttons' utilise an interactive functionality and more user-focused metrics, the validation generated by these applications is far stronger than non-personal recommendations. The 'Like economy', then, capitalises on the value of social validations to generate further potential engagement through a multiplicity of different social formations. Here, the 'Like' plug-in, 'Open Graph' protocol, web content, Facebook interface, user behaviour and data produced from such interactions enter into a productive cybernetic system that regulates attention and social activity.

In response to such recent socio-technological developments scholars have begun to focus on the ways in which software and code intervene, organise and control all aspects of human activity. Much of this work suggests these functions operate on a level which cannot be directly observed or recognised by users (Thrift, 2005; Beer, 2009). In SNS, then, control is imbricated within the specific algorithms which channel social activity, automatically calculating how these interactions may be presented and integrated within the various interface features. For example, Facebook has developed functions that calculate the most relevant content to display on a user's 'news feed', based on which 'friends' that user most commonly communicates with and which content they may have interacted with recently. Facebook has advanced this function by grouping together status updates and linking these to a Facebook page when multiple users post about that topic – even if users do not consciously link to that page. The story reads '[Friend's name] and [x] other friends posted about [Page name]', with the Page's name linked. Here, the aggregation of similar updates illustrates what is 'trending' across a user's network, representing a social recommendation that indicates that a Page is important to the viewer's network.

To recognize how such forms of modulation are executed within Facebook it is important to analyse the network logic and specific protocols which both facilitate and govern these interactions. Alexander Galloway and Eugene Thacker assert protocol must be seen as a fundamental principle of political control in contemporary networked societies, defining it as a network apparatus that 'regulates flow, directs netspace, codes relationships, and connects life-forms' (2007: 30). They advocate an increased interrogation of

protocol since it politicises those processes which have previously been contained within the so-called 'black box' of technology. Such an approach, they suggest, may lead to a more critical and politically engaged appreciation of how human activity within networks is increasingly affected by nonhuman actors (Galloway & Thacker: 2004). Similarly, Lawrence Lessig outlines ways in which computer code can become an instrument for social control, proclaiming that 'code is law':

In cyberspace we must understand how a different 'code' regulates – how the software and hardware (i.e., the 'code' of cyberspace) that make cyberspace what it is also regulate cyberspace as it is. (Lessig, 2006: 5)

In order to further interrogate how the data contributed by users of Facebook (and affiliated services) has become integral to the regulation of attention within Facebook, I offer an analysis of the specific filters available on the site's advertising interface. Here, the social data aggregated by Facebook's 'Open-graph' and 'Social Graph' protocols is decoded and made quantifiable, with the advertising interface currently providing eleven parameters which advertisers can use to target Facebook users. I propose this demonstrates how the process of dividuation enables the flexible modulation of Facebook users in an economic context:

- 1) Location – This allows companies to target users by country, state/province, city and postal-code (currently being beta-tested), thus generating geographically relevant adverts.
- 2) Age – Age is an established demographic factor which enables advertisers to engage directly with their desired target-market age group.
- 3) Birthday – This filter can be used to personalise the relationship with users by engaging with them on their birthday to increase conversion rates.
- 4) Sex – Gender is another established demographic and a typical targeting filter for Facebook adverts.
- 5) Keywords – The keyword filter is based on the information inputted by users on their personal profiles

including activities, interests, favourite books, TV shows, movies, etc., as well as those Pages which have been 'liked' by users. This has become a key component for advertisers as it enables them to appeal directly to users' interests, hobbies and desires, illustrating the implementation of affective labour into the commoditisation of social interactions.

6) Education – Whilst this parameter enables advertisers to target based on levels of education, it also provides a method for engaging users based on the schools they went to and the academic subjects relevant to them.

7) Workplaces – This filter enables specific organisations and business sectors to be advertised to, possibly targeting new clients. This represents a further delineation of the distinctions between work and play.

8) Relationship status – Another established demographic which further filters Facebook users is relationship status. This is obviously an important factor for defining the target-market of a myriad of products and services.

9) Interested In – This parameter is important for engaging the right users if a product or service is intended for users of a particular sexual preference.

10) Languages – This parameter enables adverts to be delivered in the correct language. It also allows advertisers to further tailor their advertising campaigns to particular users of different nationalities.

11) Connections – The connection parameter allows advertisers to include or exclude users based on specific pages, events, and applications that they have previously connected with. This is useful since it allows advertisers to avoid duplications in click-throughs, or target a specific group of users with a similar interest. It also underscores how the connections made within Facebook, however innocuous they may appear, have a tangible economic worth due to the processes of dividualisation regulated by Facebook's 'Social Graph'.

It is important to note that advertisers do not see any personally identifiable information and Facebook's advertising system does not let advertisers target individuals. Users are treated as individuals, mere data points, which are modulated to deliver commercially efficient and engaging marketing campaigns. The advertising interface, then, utilises the divisible and measurable data contributed by Facebook users to regulate and economise attention. Therefore, the algorithms of the 'Like economy' commoditise relations in the very ways that they are performed through Facebook.²

Conclusion

This article has examined a number of techno-cultural developments which I see as central to the production of subjectivity and economic value in online social networking services. In networked ecologies such as Facebook, subjectivity must be seen as a relational, cybernetic process, since both information machines and data generated by users are active in shaping social activity. Social networking services, then, represent a new distributed aesthetic that produces socialised subjectivities. I have argued that modes of production within Facebook challenge those traditional notions of the media audience, as well as delineating the distinctions between work and play. The immanent generation of data by Facebook users facilitates the monetisation of social knowledge, interpersonal communications, and the transmission of detailed consumption habits. As such, social interactions mediated by Facebook may be considered a form of immaterial labour, since economic value is derived from these multiple data-streams via digital computer technologies designed to modulate and regulate attention. In the final section I introduced the concept of dividuation to further reveal how user data is integrated into a myriad of flexible flows of production, with the adjustable parameters of Facebook's advertising system harnessing this abstracted data to deliver engaging and relevant advertising. This demonstrates, in part, why Facebook has recently received such a substantial increase in advertising revenues, with companies from across the globe wishing to invest in the potential economic value of the social activity mediated by Facebook and its affiliated applications. Here, all social relations come to be regulated by the specific protocols embedded into the fabric of the web, whereby the digital 'traces' generated by users are processed and manipulated by computer software to drive further social interactions. In the case of Facebook, the 'Like' button and 'Open Graph' protocol emphasise the leverage of the emotional

commitments between users and content, with these functions being designed to quantify valuable information about users' hobbies, likes, dislikes and points of interest. This has become a principal form of affective labour as these interactions produce associations between consumers and commercial services, validating the brand and potentially motivating purchasing decisions and further social engagements. These features, then, are employed to automatically customise content that may directly meet the desires, needs and interests of users; thus demonstrating the agency of nonhuman actors in controlling attention.

With regard to the attention economy, the modes of production within Facebook represent a cybernetic system that modulates and economises the content produced by users, by feeding this data back into the delivery of targeted marketing campaigns. Here, the social activities mediated by Facebook become integral to the production of subjectivity, with every interaction representing a data point which can become valuable to global capitalism through the adjustable parameters which are used to filter users and regulate attention. Given the financial scale of Facebook and the potential future earnings of its applications, it is vital we develop methodologies which present a closer critical interrogation of such dividuating practices. These features represent a viable attention economy retooling of capitalist media, whereby users submit to specific forms of control. Whether or not Facebook becomes a passing craze remains to be seen, although the company has already made significant steps to branch out beyond its central social networking platform to occupy and mediate all aspects of the digital environment.

Endnotes

¹The 'general intellect' as discussed by Marx (1973 [1939]) within a section known as 'Fragment on Machines' has become a crucial concept for the analysis and definition of post-Fordist modes of production; see also Paolo Virno (1996) for a development on Marx's original thesis. Virno argues this term has taken on a significant contemporary relevance given the increasing role of machinery, technological expertise and general social knowledge in the organization of production and capital relations.

²When creating a Facebook advert marketers can either link directly to a brand's Web page or their Facebook Page, enabling further

social interactions. There are four different types of adverts to choose from: events, commenting, gifts and polling. These are interactive features which have been designed to encourage increased engagement with products, services, companies, etc. This forms a social validation of the brand as these activities are published across the network.

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