

**ROBERT W. GEHL (2014) *REVERSE
ENGINEERING SOCIAL MEDIA: SOFTWARE,
CULTURE AND POLITICAL ECONOMY IN NEW
MEDIA CAPITALISM. PHILADELPHIA: TEMPLE
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Reverse Engineering Social Media: Software, Culture and Political Economy in New Media Capitalism is another good example of the maturity of the field of social media studies. In it, Robert Gehl builds a careful argument to consider the cognitive and affective exploitation behind social media. Its main asset is its turn to a Marxian analysis of culture and economics in search of a solid theoretical ground on which alternative proposals can grow. Therefore, it is not just another analysis, but a *positioned* analysis, aimed at the search for alternatives. In Gehl's words, it turns to the 'normative stance of critical political economy of communication', departing from critical analysis of software engineering and social dynamics in order to 'look for something better' (Gehl, 2014: 15). Once scholars from different backgrounds have proven the structural dangers and negative effects of a centralized and ubiquitous social media system—surveillance, commoditization, meaningless interactions, culture of anxiety, accumulation of power, etc.—it is time to invest our efforts in building knowledge that helps change the current trend. As Gehl claims:

In short, contemporary social media hardly seems compatible with democracy, and because of this issue, I need to move past the point where heterogeneous engineering tend to leave off at the question of 'what is to be done?' (2014: 15)

With this assertion, Gehl aligns himself with the call for 'normative' or positioned sociological accounts of society, and to support this perspective, the original text includes an endnote where the author mentions John Law's (1991) discussion over the 'relative lack of

normative approaches to class, race or gender in STS' (Gehl, 2014: 169). However, in order to know where to go and why in that direction, we need to engage in critical analysis and try to understand the dynamics at work in social media. Gehl's method is that of 'reverse engineering': from the understanding of software engineering processes, we follow the reverse direction—similarly to Foucauldian genealogy—from the final product to its original design, in order to find out the assumptions and associations it is built from.

Through this process, Gehl begins with what is closer to the experience of the user and then moves along to analyze the dynamics behind social media. Thus, in chapter 1, 'The Computerized Socialbot Turing Test', we learn about socialbots: programs designed to imitate human communication and interact with us through social media. Using socialbots as a stepping stone for his argument, Gehl goes deeper into how media—in general—define the terms of social discourse and the limits of thought. To represent this idea, he chooses the concept of Noopower, the power that comes from affecting people's thinking (and feeling, needing, wanting, etc). In this sense, socialbots are the perfect resource to gather information from users and execute interactions in order to influence their discourses, just like other social media marketing tools and the multiple functionalities of Big Data. Here, Gehl demonstrates how social media is not (just) a space of equal interaction and empowerment of the individual, but also a field (a battle field or a crop field) where social, economic and political forces struggle to get influence over thoughts, feelings and habits; that is, to gain Noopower.

In a subsequent chapter, 'The Archive and the Processor', Gehl addresses a related issue, that is the basic architecture of social media software. It is an effective technical turn in Gehl's study, and one that is usually missing in sociological accounts of new media, and that of course serves quite well the stated purpose of Gehl's book: reverse engineering social media. Here we spend some time with the Von Neuman architecture that enables any software system by establishing a distinction between two main functions: the archive that stores information and the processor that takes some of that information, works with it, and produces new information that is stored back in the archive. In social media, this technical division of functions also shapes the socio-technical dynamics of the agents involved. At one end, users work as cognitive and emotional processors of information, by writing updates and comments,

tagging pictures, liking, friending, retweeting, etc. In doing so, users introduce new information into the system, which is very useful in order to process data that machines alone do not do well. At the other end, the owners of the system are responsible for the archive, rendering its information to the user on demand and storing back the results of their processing—be it new content or simply the log record of users actions. In this division of functions, Gehl does not miss the opportunity to point out the power that the ownership of the archive can give to system administrators, an ownership that is assured by the license agreement that every user has to sign, in order to be connected to the people he ‘likes’ or ‘loves’.

Gehl goes on to explore the concept of ‘abstraction’ which serves as a conceptual bridge between software studies and Marxian theory. The production of software begins with an abstract description of what it is supposed to do. The architecture of the system is then implemented through layers of code, written in different languages, from more abstract ones to the concreteness of machine language (binary code). For example, Object Oriented Programming works over abstractions—a shopping cart, a send button, a recycle bin, etc.—that are ideal representations of complex actions that are executed by the system. Users interact with these abstract objects, instead of lines of code, which simplifies the use of software. Translated into Social Networking Systems (SNS), the abstract software architecture constructs a frame designed to capture certain information from users, in order to enable their online interactions. By doing so, the abstraction embedded on SNS architectures shapes—or modulates, to use Deleuzian terminology (Deleuze, 1992)—the interactions and subjectivities of those who use them.

In order to better explain how this happens, Gehl relates the software abstraction with the concept of ‘real abstraction’, used in political economy by Alfred Sohn-Rethel. This concept derives from the Marxian idea that existence determines consciousness, which means that actions and real life situations introduce an abstraction into our minds: A real abstraction

exists nowhere other than in [the] human mind, but it does not spring from it. Rather it is purely social in character, arising in the spatio-temporal sphere of human interrelations. It is not people who originate these abstractions [by thinking, reflecting, deciding or imagining them], but their actions. (Sohn-Rethel, 1983: 20; quoted in Gehl, 2014: 77)

In other words, when beliefs are transformed into social rules they affect actions and perceptions. This observation becomes more relevant when we realize the concept was used to explain the value of change embodied in money and commodities, the real abstractions that regulate the economy. Following on from this, software abstractions are a new mean to regulate the flows of value and socioeconomic capital. This perspective constitutes a conceptual leverage to establish a relationship between what is happening in social media and the core principles of capitalism, a system that works on the abstraction of value that capital incarnates; or, following Marx: '[Today] Individuals are ruled by abstraction, while earlier on they depended on each other' (Gehl, 2014: 78). The modern economy works over a set of rules, regulations and statistics that dissociate the material needs and limitations from the flows of the market, ruled by (real) abstractions:

The architectural specifications of a software project are, in fact, capital qua substance becoming 'Subject.' This subject organizes labor to produce software commodities. Coders—intelligent, relatively autonomous human laborers—become objects producing object-oriented software systems for the benefit of their employers. They are ruled by the software abstraction, the architecture. (78)

Here, Gehl is focusing on human labor as a job in order to mimic the original (Marxian) description of the dynamic, but the same can be applied to the consumer-user when he follows the indications embedded in the architecture of the programs she/he uses (be it games, SNS, or any other program). Therefore, the user is activating the subjectivity captured in the program to let it operate through her by giving shape to—and modulating—her actions. Social media culture is a step forward inside capitalism in which the money-commodity is not the only real abstraction regulating and modulating human actions, motivations and consciousness. In interconnection with the commodity market, technological architectures are developing more complex ways of managing 'human resources' (also known as people), both in the private and professional spheres.

In order to understand the standardizations underpinning these uses of social media, Gehl directs his analysis to the concreteness of technical standards and the role played by the Interactive Advertising Bureau. The achievement of industrial standards is an

interesting area of study that comprises power struggles and negotiations between the main agents driving a particular market. All of them are interested in getting to a standard that facilitates business, but each of them wants to be the one promoting it and obtaining the associated advantages. In mature markets, the most common practice is an alliance between the strongest actors, to develop the standard they need. These initiatives reinforce the idea of the self-regulatory market, while in practice it represents the situation of an oligopoly establishing the public conditions and regulations of the market. In this regard, Gehl opens up some intriguing lines of inquiry around the resorting to an abstract description of 'the user' in order to justify the standardization of online advertising according to an oligopoly's interests. Again, an abstraction is imposed on real users, affecting their conditions of living (that is, of using the services regulated by the standard).

In the final two chapters of *Reverse Engineering Social Media*, we finally get to the normative perspective Gehl promised at the beginning of the book. In chapter 5, 'Engineering a Class of Itself', Gehl continues to rely on Marx to find new answers for the present situation—paradoxically, fresh views often come from rethinking the old theories that have been successful at describing basic social dynamics. In this case, we recover the idea of *class consciousness*, when workers realize they are a group of people who share conditions of existence, needs and interests. Then, the proletariat turns from being a *class in itself*—because they are indeed a social stratum necessary to the system—to being a *class for itself*, which means that they become aware of their shared realities and, therefore, of their need for collective action in order to improve them.

In the social media reality of the 21st century, class consciousness needs a semantic updating: if users are working as an emotional-cognitive processor for the social media industry, they can potentially become aware of it and recognize themselves as a class for itself. One example is the Wikipedia users' strike in 2002, which influenced the ultimate direction of the encyclopedia project and transformed it into the free and open enterprise it is now. This episode has come to be known as the 'Spanish Fork', and was led by Spanish contributors who opposed the introduction of advertisements on the site.

In the final chapter, 'A Manifesto for Socialized Media', Gehl articulates a general declaration laying out the ideal characteristics

for a better digital media system. For Gehl, its lynchpin lies in 'socializing' the media: instead of relying on corporations to design and control the web architectures we use, a socialized media should empower people and users by opening up the processes of architecture design and archival control. While it is more of a laying down of a set of ideal principles, the declaration's value comes through in its call to action(s):

Working from the assumption that democracy requires debate and collective production of knowledge [...], I argue for a system that involves true two-way communication, decentralization, free and open source software and encryption. I also argue that socialized media will require for a radical pedagogy at their interfaces that can guide users through the layer of abstraction that software comprises and teach them how to modify it to meet their needs [...]. In opposition to the increasing surveillance within social media, I call for a culture of fluid identities, for an anti-archival system, and for the eradication of intellectual property. (142)

Today, connection is regulated through the Internet Services Providers that centralize and keep records of all the information in transit. Alternative projects that rely on wireless connections (meshnets) are already working in local areas. Some of them are quite successful, for example, Guifi.net, based in Catalonia, that also allows users to connect to the Internet through shared nodes. The ISP is still needed to access the Internet, but it deals with the alternative network as a collective, instead of with each user individually.

It is safe to claim that open and free software are commonplaces in any alternative digital project. As such, it is necessary to avoid blind spots with regards to how architectures work and open their 'insides' to the public. The bottleneck in this two-way system is requisite knowledge, which is the reason why Gehl asks for a 'radical pedagogy' embedded in the interfaces and boosted by a more open interaction between experts and non-experts.

The second half of the chapter is dedicated to a brief review of actual projects that have tried to put to work these premises, such as alternative social networking sites like Diaspora, GNU Social,

Crabgrass or Lorea. The final two are particularly interesting because of their activist nature and their rejection of venture capital, which limits their resources, but also guarantees their independence. Crabgrass is developed by the Riseup Collective, ‘an autonomous collective of volunteer activist which provides alternative communications infrastructure’ (Riseup, n.d) and relies on donations to finance their activities and services. Lorea is a syndicated social network, with its main node (N-1) based in an alternative rural community in Catalonia. The lack of funding affects the scalability of the project, but it is one of the most interesting experiences in building alternative social networking sites. In their design, the developers tried to break the logic of the administration as a ‘service provider’, looking for ways to empower collectives to take part in building their information infrastructures (for example, by syndicating a seed), and inviting *inhabitants* (not called users) to engage in the maintenance and development of the system (Spideralex, 2012).

Both of these projects openly display the ideology and intentions behind the architecture of the system, as we can see in this quote from a Crabgrass developer:

It really reflects as a technology object the intentions and the historical context of the people who originally created it. We are not bashful about saying this: we are organizationally obsessed anarchists, and so we really wanted to impose on our users better organizational capacity. (Sparrow, 2012; quoted in Gehl, 2014: 164)

This is not just a statement of transparency, but also a sign of how important it is to consider the hidden agendas behind the architecture of the software and devices we use, instead of hiding them behind philanthropic discourses, so common in social media capitalist enterprises.

Gehl’s main contribution lies in the introduction of Marxian perspectives in order to help us contextualize the study of social media as part of global capitalism. By integrating technological and sociological analysis, Gehl manages to situate and explain the complex processes of *reification* that are affecting users of social media. Although the book does not reach deep enough in the search for better alternatives, it gives important steps towards it, such as reinforcing the operativeness of the concept of reverse engineering.

This concept is further developed elsewhere by Gehl (2015a, 2015b), who defines it ‘as a method of producing knowledge by dissociating artifacts [...] and use it to produce new artifacts that improve upon the old’ (2015a). That is, a method that can be critically used to develop alternatives that supersede the negative characteristics of the actual social media landscape.

However, for a higher impact that reaches beyond the occasional tinkering by alternative projects, we would need a stronger normative frame to help us redefine the direction we, as a society, would like to develop. For such a purpose we might need to detach from Marxian theory—which is brilliant at the stage of analysis, but can be rigid at developing alternatives—and look into other revolutionary traditions and critical theories.

In this sense, we might want to review anarchist theories in order to rethink the relationship between individual freedom and collective organization, or maybe turn to republicanism as a way to strengthen the role of democratic states in the regulation of information technologies. In any case, if we are willing to look for alternatives that give public discussion an opportunity in shaping the future, we need to regain consciousness of the deep political implications of technological change and the role all social agents are playing across its modalities.

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