MEANING, SEMIOTECHNOLOGIES AND PARTICIPATORY MEDIA

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Summary

What is the critical purpose of studying meaning in a digital environment which is characterized by the proliferation of meanings? In particular, online participatory media platforms such as YouTube, Facebook, Wikipedia and Twitter offer a constant stream of user-produced meanings. In this new context of seemingly infinite 'semiotic democracy' (Fiske, 1987), where anybody can say anything and have a chance to be heard, it seems that the main task is to find ways to deal with and analyze an ever-expanding field of signification.

This article offers a different perspective on the question of meaning by arguing that if we are to study meaning to understand the cultural logic of digital environments, we should not focus on the content of what users are saying online, but rather on the conditions within which such a thing as user expression is possible in the first place. That is, this article argues that we should focus less on signification, and more on the question of regimes of the production and circulation of meaning. By expanding the question of meaning and using it to explore commercial participatory media platforms, this article offers a new framework for looking at online communication: one that decentres human subjects from the production of meaning and that acknowledges the technocultural dimension of meaning as constituted by a range of heterogeneous representational and informational technologies, cultural practices and linguistic values.

Online participatory media platforms offer an exemplar of the new conditions of the production and circulation of meaning beyond the human level: they offer rich environments where user input is constantly augmented, ranked, classified and linked with other types of content. Such new processes of meaning production which take

place alongside human expression require the development of a new theoretical vocabulary. The contribution of this article is to explore how the concept of semiotechnologies within Felix Guattari's mixed semiotics framework allows for a more refined understanding of the interplay between language, cultural practices, representational technologies and non-linguistic, informational processes that make sense of and organize the plurality of online communications.

Managing meaning

The claim inherent to all online participatory media platforms – be they private or not-for-profit – is that pervasive, accessible and instantaneous communication equals better democratic action, understood here in a broad sense as greater possibilities for anybody to participate in and challenge the production of a shared social world and cultural horizon. The basis of this claim is dual: first, that new communication tools are inherently democratic because they allow greater participation, and second, that these communication tools link the activities of producing and exchanging meanings with social and cultural action. That is, signifying activities and practices, as they are enacted through participatory platforms, can have real, visible and tangible effects on the organization of social and cultural relationships, and on the definition of new subjectivities and horizons of expectation. The assumption is that talking can now matter more so that, for instance, posting something online can have tangible political effects, and communicative actions such as 'joining' a Facebook political group or signing up for a political 'event' can be equated with political commitment. This article takes this claim seriously: that activities and processes of signification as they are enacted on participatory media platforms can have tangible effects in the organization of the world; in other words, that they can serve, in turn, to shape, sustain or undermine power formations. It is the triangulations between these three poles – language, technology and a field of power formations – that constitutes the core focus of this article.

The exploration of these three poles can be organized around the question of meaning, which should be understood in this context as a site and operator of power formations that mobilize language, signification, representational and informational technologies in specific ways. Meaning cannot simply be equated with signification, that is, with the translation of mental images into language; rather, it involves a process of organizing the world and our relations to it

through language. Meaning is the process through which symbolic representations are gauged as adequate to the world, so that, for instance, a text can be coherent from a linguistic perspective, but meaningless with regard to understanding the reality it is supposed to address. The conceptualization of meaning referred to here is the one that is commonly expressed when one says, for instance, that one is searching for the 'meaning of life': it encompasses an effort to uncover and express some truth about the world and our place in it. Thinking about meaning requires thinking about power, because meaning is a critical site for defining effects and regimes of truth (Foucault, 2003), whereby power formations intervene to modulate and direct the process of establishing the adequation of symbolic representations to the world. What happens to meaning, though, when it is not a human or social or cultural process any more, but one that is mediated through a range of representational and non-representational technologies, such as the ones developed on participatory media platforms? In order to answer this question, it is useful, as this article demonstrates, to think about the production and circulation of meaning as regulated by semiotechnologies – a range of technocultural assemblages that work with and through signs to organize the mediations and translations between data, information and linguistic symbols. Semiotechnologies establish regimes of the production and circulation of meaning according to specific power dynamics, and modulate the parameters of the relationships between language and the world. While the term originates in Kittler (1997), semiotechnologies within the scope of this article are an ensemble of processes through which specific types of the management of meaning can be implemented on participatory media platforms.

The consequence of identifying semiotechnologies in this way is that it becomes difficult to just say that we are simply expressing ourselves online. Rather, when we think, as human users, that we are saying something, it would be more accurate to say that we are, through the process of producing and exchanging meanings, activating a wide range of communicative processes to enable, record, repurpose, augment, shape and feed off our inputs. Rather than asking the question: 'who speaks?', it is better to ask the question: 'What kind of technocultural assemblage is put into motion when we express ourselves online?'. As such, examining the production and circulation of meaning on participatory media platforms requires us to think about the plurality of semiotechnological assemblages, and about how they relate to and influence each other. We have to take notice not only of what users

are saying at the interface level, but also of the involvement of different types of software processes in sorting and ranking information; not only the content of a message online, but the informational logics that make such a content more or less visible; not only the many multimedia texts that appear online, but also the processes of production, distribution and circulation of these texts as they acquire more or less social meaning and informational value. As such, the study of meaning on participatory platforms calls for a decentering of the role of human users, and a decentering of signification and representation, in order to include non-signifying and non-representational technologies and processes that activate specific meaning formations. Such an a-signifying (to borrow a term from Guattari) approach to meaning can expand our critical scope so that the question of power is not simply studied at the level of what is signified, but that it also involves, through the tracing of semiotechnologies, the role of non-human, software-based processes in scripting the adequation of meaning to the world.

Paying attention to such a decentering of language and of human actors makes it possible for us, as researchers, to understand the new parameters of the relationship between meaning and power formation, particularly in the context of cognitive capitalism. This is a context where immaterial assets such as ideas, social relations and affects constitute the core of new for-profit ventures, as exemplified by popular commercial participatory platforms such as Amazon or Facebook. From this perspective, for-profit participatory platforms are not simply about facilitating regimes of meaning production and circulation, but also about extracting value out of meaning. Thus, while the characteristic common to all participatory platforms is to invite everybody to express themselves, the management and channelling of the communicative data produced by and for users is specific to the given context and goal of a platform. That is, inviting users to express themselves in order to produce a large amount of free labour or marketable data (i.e., Amazon, Facebook) is radically different from wanting to produce a repository of the world's knowledge (e.g. Wikipedia). As this article demonstrates, the production of value out of meaning takes the form of a generalized focus on meaningfulness. Another question that this article will address, then, concerns the politics of meaningfulness: how does the deployment of semiotechnologies help establish patterns for the constant search for what is more meaningful, and therefore more valuable?

Meaning beyond signification

Positing meaning as a site and operator of power formation – as the process through which linguistic acts are made relevant, true and adequate to the world – requires rethinking its relationship with signification. As explained below, such a definition of meaning is not new and is in continuity with the work of Foucault, Deleuze and Guattari, and Guattari. The move from Saussure's conception of meaning as pure linguistic play through its redevelopment within Foucauldian discourse analysis as the expression of relations of power, to its conceptualization as the site of operation of a machinery of heterogeneous material, linguistic and social elements, does not aim to reject signification, but rather to place it alongside other, and equally important, non-signifying processes. As Weber explains (1976: 920), any question related to meaning traditionally tends to refer to either a representational framework or a structuralist linguistic framework. In the 'representational-denominational conception of language' (1976: 920), importance is placed on the signified (the concept associated with representation) rather than on the signifier (the symbols used to create a representation). The signifier thus exists as a means through which we can refer to a reality, concept, or object that is outside of language, and 'meaning is ontologically and linguistically prior to the linguistic entity, which it "authorizes"' (920). In contrast, Saussure's structuralist framework departs from a model of language as representation towards a model of language as a self-referential, closed and autonomous system (1976: 925). Saussure focuses on the value of a sign as not based in relation to something outside of language, but rather on the differences that exist between a sign and other signs This leads to a definition of meaning as produced through the semiotic process without references to an outside reality. Signification understood in this way is cut off from a reality 'out there': the referent – the actual object designated through a sign – disappears completely. Meaning appears through the play of signs, through the relationships and differences among signs. Meaning from a Saussurean perspective is thus rooted in conceptual differences, not material or social ones.

Both denominational-representational and sign-value definitions of meaning have come under scrutiny because they establish a strong separation between language and the world out there. A common critique against the denominational-representational paradigm is that, rather than positing a pre-existing reality, or sets of meanings, that language tries to represent, linguistic activity participates in the

shaping of reality, in the interplay between social processes, political interventions, scientific interventions and a material environment. The problem with Saussurean linguistic is that it has 'a tendency to give too much attention to signs as such, less to society, and hardly any to the "life" of signs in social practices' (Jensen, 1995: 3). Acknowledging the social life of signs requires exploring how signs do not exist in absolute, conceptual modes, but rather circulate through everyday life as acts of communication conveying specific purposes in specific contexts (Jensen, 1995: 11). Thus, there has been a conceptual move towards a pragmatic analysis of the relationship between language and power, with language understood as the 'ability of distributing effects at a distance' (Wise, 1994: 63). From this perspective, the process of creating meaning is not about representing something out there, but about actively shaping our relationships to and expectations of the world.

This idea of language as distributing effects has been explored by Foucault, especially through his focus on discourse as a set of texts with similar statements that assign specific relations to objects, subjects and other statements (2002). Foucault's analytical move towards discourse as the space where 'power and knowledge are joined together' (1980a: 100) is central to the examination of the social effects of signification. From this perspective the production and circulation of knowledge as meanings also enables, enacts and legitimizes social relations of power. By power, Foucault means a 'productive network' (1980b: 119) through which roles and relationships between subjects are defined. Discourse also produces and defines objects of knowledge, the appropriate methodology through which one can meaningfully talk about objects, and the subjects who can legitimately participate in the production and exchange of discourse. Thus, the point of discourse analysis, following Foucault's framework, consists in studying 'not only the expressive value and formal transformation of discourse, but its mode of existence', and the 'manner in which discourse is articulated on the basis of social relationships' (1977, 137). The joining of power (the legitimate authority to act) and knowledge (the ability to claim to possess a 'true' understanding of the world) is by no means simple and therefore discourse is a site of struggle and contestations among different types of knowledge (legitimate, repressed, buried, minority knowledge) and power (i.e., of who can take action and have an effect in the social organization of the world).

Such preoccupation with the pragmatic effects of language – how language participates in ordering the world – is further developed in

Deleuze and Guattari's focus on the order-word. The concept of the order-word allows for the examination of linguistic practices as practices of ordering, shaping and hierarchizing the world through words. For instance, declaring 'you are free to go' is a linguistic act with real-world effects: it creates new social circumstances. At the same time, these real-world effects can only take place within a social and institutional setting that defines the specific roles among participants in order for this communicative exchange to function and actualize a new set of circumstances (Porter & Porter, 2003: 139). As such, Deleuze and Guattari denounce the 'tyranny of the signifier', that is, the problematic centrality of the signifier for explaining the formation of meanings (1983: 242-243). Deleuze and Guattari's critique of Saussurean linguistics and its derivations (1983, 1987) redefines meaning as the end-result of an ensemble of processes that partly use signification to connect to, intervene in and shape a social world. Meaning here involves effects that are not simply linguistic, but also psychological, social and political. This pragmatic approach to language recasts the relationships between signification and power by examining meaning as the interface through which language and the social world are articulated with each other. As Guattari puts it succinctly when explaining the influence of Foucault on his work, the aim is to examine 'the pivotal point between semiotic representation and the pragmatics of "existentialization"' (1996a: 181), that is, the articulation between linguistic activity and the production of a shared world of power relations and a shared field of possibilities (Lazzarato, 2004: 21).

Meaning beyond text: interface, code, network

How can we now go about examining meaning as the interplay and triangulation between language, technology and a field of power in the participatory media context? The first task is to move beyond essentialist categorizations of each pole, but also beyond some of the more problematic aspects of trying to collapse one pole – be it language, technology or power – into another. There has been a categorical division between technology and materiality on the one hand, and discourse, signification and linguistics on the other. The problem with such categorizations is that, when they are used to explain the relationship between technology and language, they end up pitting one against the other, and they assume that technology and language have strong essential characteristics that make them impermeable to each other. If signification is defined only as the play of linguistic signs, then technology has little bearing on the matter,

except at the level of the formatting of content (Kitzman, 2004: 4). If technology is defined as a second nature that influences us on a primordial, non-linguistic physical and psychological level (Hansen, 2000), then it logically follows that it should not be reduced to discourse or primarily be studied in terms of its impact on modes of representation. At the other extreme, however, examining the relationship between language, technology and power should avoid the postmodern pitfall of reducing all reality to the pure play of signs and denying the solidity (Callon *et al.*, 2009) or heterogeneity of non-linguistic processes, and of a world made up of complex cultural beliefs, objects, relationships and realities. The way to avoid both pitfalls is by acknowledging that while the production and circulation of meaning is heterogeneous, this is not to say that they cannot be governed by processes that make heterogeneous dynamics work together. This is where the question of power sheds new light on the relationships and articulations between language and technology, in that it invites us to pay attention to the governance of the heterogeneous conditions within which specific meanings come to appear. This approach corresponds to Deleuze and Guattari's call to make use of the concept of the diagram, which they describe as a 'cartography that is coextensive with the whole social field' (Deleuze, 1988: 34), to understand power formations and map the 'regularities' (Deleuze and Guattari, 1987: 64) that reify and solidify specific power formations. In doing so, the diagram is 'an abstract machine ... defined by its informal functions and matter and in terms of form makes no distinction between content and expression, a discursive formation and a non-discursive formation' (Deleuze, 1988: 34). The idea, thus, is to avoid essentialist categorizations in order to further examine the governance of the heterogeneity of meaning formation, which in the participatory media context takes the form of management processes enacted by a platform. Participatory media platforms assemble users, software, databases and interfaces in specific ways (Langlois et al., 2009), and therefore organize the managing principles through which heterogeneous elements are made to work together in order to produce meaning. As such, the approach I propose here is post-hermeneutic, in that it is not primarily about the interpretation of the content of any given type of communication on a participatory media platform, but rather about the examination of the power relations through which specific modes, practices and conditions of meaning production and circulation can take place. The challenge lies in understanding the interplays of linguistic and technological processes that allow for these specific modes, practices and conditions.

There are not only theoretical roadblocks in examining meaning in the participatory media context, but also methodological ones. The study of meaning usually calls forth a classical humanist perspective in that it is traditionally associated with text. In turn, the notion of text seems to belong to a bygone media era dominated by print, while what appears on our computer screens are multiple strands of texts, sound-bites and bits, all mashed-up and organized by a range of software modules – what Bolter and Grusin (1999) defined as hypermediacy. In recognition of this, the concept of the interface has come to replace 'text' in discussions of the online environment. However, the interface should not be simply understood as what appears on a computer screen, but rather as a mediator between software processes and cultural representations. As N. Katherine Hayles (2004) declared: 'Print is flat. Code is deep'. A text in its conventional understanding consists of a set of meanings expressed through signs, be they visual, written, audio, etc. Traditionally, text-focused methodologies deal with content in its linguistic and social aspects rather than with the technological or material context that enables the production and circulation of signs. However, the move here is to examine how an interface such as a web page reflects its technocultural conditions of production, circulation and intervention within a social field. The problem with the early conceptualizations of the interface as a product of a human actor making use of code is that the interface first tends to be viewed as primarily a human artefact, whose production is facilitated by a set of communication tools; and second, that it tends to be disconnected, especially on online participatory media platforms, from the networked media environment that materially enables its production and circulation.

For instance, it is tempting to focus on an amateur YouTube video just in terms of its form and content, and ask how the meanings in the video differ and challenge meanings in other videos, such as, for example, those produced by media professionals. However, it is equally important to broaden the scope of enquiry and ask how such a video comes to be seen by other users, which requires in turn not only asking what potential meanings can be derived from the video, but also what the processes through which such a video can appear on a screen are in the first place, and how it can circulate across networks and onto other platforms. This question requires us to pay attention to the graphical user interface, and to examine the other visual elements that surround and contextualize the video: other videos, search boxes, etc. This then involves the need to pay attention to the networking of a given video: how is such a video

identified, categorized, retrieved and circulated, and according to which search logics? Such questions concern not only the techniques of information search and retrieval, but, by extension, how the meaningfulness of a video is defined not only by other human users, but also increasingly by software processes. These kinds of questions demand a reconsideration of meaning as a multi-faceted object of study that encompasses visual interfaces, layers of code, and logics of networking of information.

In that sense, meaning as an object of study cannot be simply narrowed down to the linguistic signs that appear on a visual interface. Rather, the study of meaning also needs to include, for instance, the source code of a web page – the many languages and programs that are rendered invisible to users but are nevertheless central in shaping information into culturally recognizable signs. By extension, the question of meaning does not just comprise the many elements that make content visible in the first place, but also, in the participatory media environment, the processes through which content circulates through information networks and is equally produced by non-human, software actors. Indeed, looking at online communication cannot be reduced to studying what another user is saying, but also needs to take into account what software-produced visual elements are saying, framing, suggesting and recommending. It is therefore useful to switch the focus from a specific set of meanings expressed by an author to the enactment of multiple technocultural processes of meaning production and circulation that make use of semiotic and non-semiotic, representational and informational processes. Because of this, it makes sense to think about processes of meaning production and circulation as being regulated by semiotechnologies – a range of technocultural processes that, by working with and through signs, organize the relationships, mediations and translations between data input, information, linguistic symbols, cultural practices of communication and users. Rather than being a human activity supported by technical tools, such as a diverse range of media tools, meaning as the operation of semiotechnologies encompasses technocultural processes and constructs that not only organize the logics through which data becomes meaningful or meaning informational, but also distributes agencies and relationships between different categories of communicational actors, such as various classes of institutional and individual users, and software actors. By extension, semiotechnologies participate in the organization of a broader world of power formations: whoever or whatever set of actors defines, influences and otherwise mobilizes semiotechnologies can intervene

in shaping cultural perceptions of specific communication process, as well as the way in which these relate with existing realities.

Semiotechnologies and power

The challenge is not only to identify semiotechnologies, but also to see how, by setting up regimes of the production and circulation of meaning, semiotechnologies can serve to organize a reality, or a set of common expectations, and therefore maintain, or challenge, relations of power. It is important to keep in mind that in the online participatory media process, the question of power, semiotechnologies and meaning cannot be reduced to the questions of access or limitations of the scope of the content of communication. This is not to say that there is no over or covert forms of censorship on participatory media platforms, but rather that the main characteristic of these platforms is an ability to accommodate and manage an open-ended field of meaning. The main focus of power is therefore on the question of management: of centralizing and operationalizing the processes through which some content can be more meaningful than other, and thus more valuable. This is a crucial distinction to keep in mind: the promotion of an open field of meaning does signify the disappearance of power and the rise of a 'semiotic democracy', where anything that is said has a chance to intervene in the shaping of common horizons of expectations. Rather, semiotechnologies as the operation of power work on defining what is more meaningful and therefore more apt to participate in the actual organization of the world: they work on setting up the processes and technocultural logics through which a cultural value is attributed to information, which can then be transformed into signified content and be perceived as relevant for understanding a given reality. The concept of semiotechnologies broadens the focus to include not only questions regarding meaning as content, but, more importantly, ways of setting up regularities and patterns out of which the production and circulation of meaning can develop – or, out of which sense can emerge from the massive amounts of information, according to specific logics that serve, oftentimes, a for-profit motive.

Central to these processes of regulation and management as they are enacted by participatory media platforms are non-representational and informational technologies and software processes in charge of collecting, ranking and retrieving information. The main challenge in understanding semiotechnologies in the participatory media

context lies in examining the role played by these new non-linguistic components and processes in the formation of regimes of meaning production and circulation. It is useful at this point to explore further the question of semiotechnologies, meaning/meaningfulness and power through Felix Guattari's mixed semiotics framework. As Genosko recalls:

> Guattari attempted to develop the first semiotics adapted to the global information economies of the network society, even though his untimely passing in 1992 did not permit him to experience the extraordinary accelerations of the 1990s towards and beyond the millennium of the burgeoning infotechnocultural era of digital capitalism; still, he was already attentive to the stirrings of the fusion of capitalism and informatics in his studies dating from the 1980s of the global economy of Integrated Worldwide Capitalism. (2008: 11)

As Genosko further explains, the mixed semiotics framework opens a way for examining how 'a-signifying signs', that is, non-linguistic, non-representational signs, serve to further automatize a capitalist system. The 'strings of numbers and characters on a typical magnetic stripe' on, for instance, a credit card, are a-signifying signs which 'have no meaning, but for Guattari, operationalize local powers' (14). However, the focus here, in contrast to what Genosko says, is not only on the importance of these a-signifying signs that escape linguistics and that work on the real without relying on meaning as signified content, text or discourse, but also on reconsidering linguistics from a perspective that locates it alongside other heterogeneous processes which build regimes of meaning production and circulation. Guattari's mixed semiotics points out the heterogeneity of processes that can intervene in the production and circulation of meaning. Thus, if semiotechnologies are the heterogeneous assemblages of signifying and a-signifying processes that work with and through signs to organize the world and our relation to it, then they can take on different forms identified below: semiotechnologies of signification, non-linguistic semiotechnologies and a-signifying semiotechnologies.

Signification and semiotechnologies

The kind of mixed semiotics approach first sketched out by Deleuze and Guattari (1983; 1987) and further elaborated upon by Guattari (1977) allows for a redefinition of meaning as the effect of language, effect that is not simply linguistic but also social, cultural and psychological. In doing so, the mixed semiotics approach points out the inseparability of language from other non-linguistic processes. Deleuze and Guattari's claim is therefore that 'linguistics is nothing without a pragmatics (semiotic or political) to define the effectuation of the *condition of possibility* of language and the *usage* of linguistics elements' (1987: 85). Acknowledging that linguistic activities have a central pragmatic dimension leads to a conception of meaning not as coming from a transcendental idea, but as immanent, that is, as developed through multiple material, social and linguistic flows, conjectures and relays. In the participatory media context, the question of linguistics is still important because the production and circulation of meaning under the form of signified content remains central, both as a communicative goal of a platform designed to publicize user-generated content and as a means towards, for instance, gathering data in order to realize a profit. However, as the mixed semiotics framework shows, signification is now increasingly determined by non-linguistic processes, in particular informational processes of data collection, storage and retrieval. Signification on participatory media platforms extends beyond users' linguistic, symbolic and cultural capacity to create meanings under specific social circumstances, and involves broader semiotechnologies which organize, regulate and frame the production and circulation of meanings as signified content appearing on visual interfaces.

Guattari's elaboration on Hjelmslev's glossematics to define a mixed semiotics framework makes it possible to integrate technical elements and software processes at the very core of the process of signification, and thus to examine how semiotechnologies of signification can be mobilized and shaped by specific power formations. The main characteristic of Hjelmslev's framework is that it points out that acts of signification are dependent on a range of material processes. As Hjelmslev explains it, a sign is not an object, but a semiotic function that establishes a connection between two planes: the plane of expression and the plane of content (Hjelmslev, 1971: 72). There are two levels at which content and expression can be analyzed: that of substance and that of form. Once a substance of expression and a substance of content are formalized, they can be

further translated into a form of expression and a form of content through the semiotic function of the sign, which establishes a link between these two categories. The process of sign production in glossematics can be represented as follows:[1]

Table 1: Glossematics

	Matter (purport)	Substance	Form
Expression	Unformed amorphous mass (unknowable until is formed into a substance)	Materials available for manifesting content	Actual assemblage of materials used to structure content
Content		Content of the human mind before any structuring intervention	Content of the human mind in a structured form

An example of sign production as described by glossematics is a stop sign on the road. The substance of the content 'stop' could be expressed through different substances of expression (such as written letters, sounds and colours). In order to structure the concept of 'stop' into a form of content that is understandable by all, a form of expression that can be associated with it is the colour red. Thus, the level of expression makes it possible to raise the question of the materiality of signification, as opposed to traditional linguistic framework. Furthermore, in its reformulation as part of mixed semiotics, the glossematics framework can be further expanded to include questions of power and knowledge.

Indeed, Guattari's first move in making the transition from glossematics to mixed semiotics is the inclusion of the question of power with the problematic of meaning-making and representation (1977:242). In *Révolution moléculaire* (1977: 307-308) Guattari focuses on two types of formalizations, one of which takes place at the level of content, the other at the level of expression. This requires a redefinition of the categories of expression and substance. In particular, the category of substance of expression involves not only 'semiotics and semiology', but also 'domains that are extra-linguistic, non-human, biological, technological, aesthetic, etc.' (1995: 24). The substance of content is also further developed to include not just the broad label of concepts, but also social values and rules. At the level of expression, the type of formalization that takes place is a linguistic one, in that all the possibilities of language,

of expression, are reduced to specific syntaxes – the proper rules for using language. The type of formalization that takes place at the level of content involves a recentering of power formations to establish semiotic and pragmatic interpretations, that is, a field of possibilities as to what can be said legitimately. The relationship between expression and content is realized through political and social structures (1977: 241), contrary to the argument that the relationship between signifier and signified is arbitrary. For Guattari, the production of meaning via signifying processes involves the articulation between the formalized content of a social field (social values and rules) and a machinery of expression that ultimately serves to 'automatize the behaviours, interpretations, and meanings recommended by the system' (1977: 307; translation mine). Thus an abstract semiotic machine allows for the articulation of the linguistic machine (the proper language rules) with the structuration of specific power formations.

For Guattari, this meeting point is important as it potentially allows for the reinforcement of a broader structure of power that goes beyond the production of specific, contextualized significations. Who has the right and legitimacy to articulate the linguistic machine with power formations is of crucial importance here, as Guattari argues that it is the centralization of that articulation within a broad economic and social machine (e.g. the state) that allows for the production of a system where the field of signification corresponds to the social, economic and moral dimensions of broad power formations (1977: 308). For Guattari, then, there is no arbitrary relationship in signification, that is, between the categories of signifier and signified. On the contrary, the relationship between signifier and signified is a manifestation of power, inasmuch as language is not any language, but the language of a dominant class or group (1977:272). Thus, the table representing this process of signification could be redesigned as follows:

Table 2: Guattari and Glossematics

	Substance	Form
Expression	*Linguistic Machine:* *Harnessing of expressive materials* ———————————————→ Ensemble of expressive materials: - Linguistic: signifying chain, batteries of signs. Sound, image, etc. (PS, 148) - Extra-linguistic domains: biological, political, social, technological, etc.	Specific syntax Proper language rules
Content	Social values, social rules. ———————————————→ *Recentering, rearticulation and hierarchization of power formations*	Signified contents: establishment of specific equivalencies and significations. Legitimization of specific semiotic and pragmatic interpretations. Specific rhetoric

Abstract Semiotic Machine:

Process of articulation of the linguistic machine with power formations

Production of an ordered world: homogeneity of the field of production with the social, economic and moral dimensions of power.

In doing so, Guattari expands Foucault's conception of discourse to ask about how an ensemble of expressive materials, itself formalized by specific relations of power, is articulated with a social horizon in order to produce a common world of possibilities and expectations.

Such an approach to signification as the operation of power dynamics that manages different types of expressive materials is important for thinking about semiotechnologies of signification in the participatory media context. In particular, the harnessing of expressive materials to define specific rules of expression offers a useful perspective on the kind of communicative practices that are encouraged by interface design, particularly with regard to the communicative tools offered to users on participatory platforms. At the level of the user-interface, semiotechnologies of signification set

up visual regimes that influence the user's perception of content and meaning. As Chun argues, the interface is useful for identifying the ideologies embedded in software, in that it produces specific modes of representations that shape modes of activity, and thus users:

> Software, or perhaps more precisely operating systems, offer us an imaginary relationship to our hardware: they do not represent transistors, but rather desktops and recycling bins. Software produces 'users'. Without OS there would be no access to hardware; without OS no actions, no practices, and thus no user. (2005: 43)

Semiotechnologies of signification involve software design that shapes a horizon of possibility for users; not so much with regard to what can be said, but rather with regard to how something can be expressed. By extension, they shape the purpose and cultural value of the overall communication process online.

Semiotechnologies of signification yield themselves to deconstruction. For instance, alternative ways of exploring the potential of the Web through the creation of alternative modes of surfing have been at the core of Geert Lovink and Mieke Gerritzen's *Browser Day* Project and Matthew Fuller's *Web Stalker*. Fuller's experimental *Web Stalker* (2003) – a Web browser that deconstructs the visual conventions embedded in popular Web browsers – overcomes the page metaphor to represent Web browsing in spatial terms, where URLs are featured as circles and hyperlinks as lines, and with text and images collected in a separate window. Fuller's exploration, through the *Web Stalker*, of the cultural conventions embedded in visual interface – how websites are usually perceived as a collection of pages and hyperlinks – highlights how the focus of semiotechnologies of signification is not on the content of a message, but on the regimes within which such content is perceived. Changing these regimes of perception by altering the visual metaphors offered to users opens up new alternatives and possibilities for what could be achieved through communicating online. That is, changing the parameters of our cultural relation to content through deconstructing semiotechnologies of signification opens up new fields of meaning.
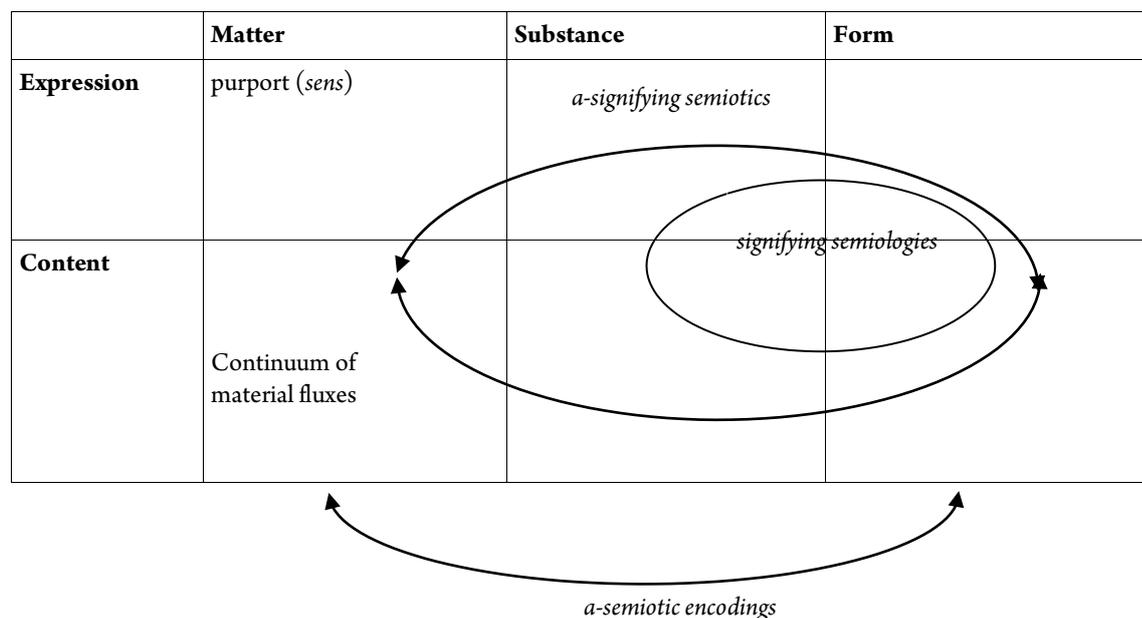
From non-linguistic to informational semiotechnologies

Semiotechnologies of signification thus work on the production, circulation and perception of signs in the general context of online communication. However, the examples of semiotechnologies of signification described above are particularly relevant to the context of the World Wide Web before the rise of participatory media platforms that deploy their own software modules, modes of communication and regimes of visual perceptions. Indeed, the characteristic of participatory media platforms is their reliance on non-representational processes in order to produce signification. This is particularly relevant if we consider that there are now different types of signifying actors on participatory media platforms, each making use of specific, and different, semiotechnologies. A Web page, particularly one hosted on a participatory media platform, is not just content posted by an author using specific conventions of expression, such as HTML coding. As mentioned at the beginning of this article, a Web page increasingly features content that is produced by other categories of users: from other users to the visual elements defined by Web designers, for instance. A Web page, thus, does not have a single author, but rather is the interface through which different types of content are put in relation with each other. Furthermore, these multiple authors are not simply human users, but increasingly hybrids of human and software, or software itself. Recommendations, for instance, are produced by software processes. Other forms of organizing content, such as tagging, involve a collaboration between users and software in terms of creating a taxonomy of tags and attributing tags to enable information retrieval. This multiplicity of content points out that there are disparate actors, materials and processes at stake in the production of signification on participatory media platforms. As such, one cannot talk of a unified or simple process of the production and circulation of meaning as signification on participatory media platforms. Rather, there are multiple semiotechnologies at stake, because there are radically different types of actors that can now produce signification.

Furthermore, the importance of software as an actor not only in charge of supporting signification process, but also of producing and distributing meanings raises question as to how we can conceptualize the link between data and meaning on the one hand, and information and culture on the other. The semiotechnologies at stake in the non-human production of signification are non-linguistic, since they work on the production of signified content not

through social values and rules, but rather through informational logics. That is, these semiotechnologies work on establishing the processes through which information can become meaningful. These non-linguistic semiotechnologies are in charge of processing data in order to produce meaning, in the form of a recommendation, for instance. The characteristic of the signified content produced by these semiotechnologies is that its logic of production operates outside of the social and cultural conventions: hence, the quasi-magic of seemingly random, but meaningful connections being made by recommendation software. However, non-linguistic semiotechnologies that work at the level of content are also accompanied, in the participatory media context, by informational semiotechnologies in charge, by contrast, of turning user-produced meaning into informational material that can then be processed further. An example of this would be the tracking of user behaviours on a social network to create a database that can be used in the future to produce further profiles, recommendations, etc. This latter type of semiotechnologies is central to some signification process on participatory media platforms, but works primarily through a radical decentering of linguistic processes.

It is here, perhaps, that the mixed semiotics framework enables further understanding of non-linguistic semiotechnologies, particularly through the discussion of a-semiotic encodings and a-signifying semiologies. For Guattari, the semiotic process that takes place at the level of expression and content between substance and form relies on signifying semiologies – semiologies which are focused principally on the production of signs, or, as Guattari calls them, 'semiotically formed substances' (1996b: 149). There are other processes at stake, and these involve a redefinition of the category of matter. For Hjelmslev, matter is defined as an amorphous mass that can only be known through its formalization as substance. For Guattari, on the contrary, matter can manifest itself 'in terms of unformed, unorganized material intensities', without being transformed into a substance (Genosko, 2002: 166). As Guattari explains it, matter can also be divided along the lines of expression and content, with *sens* or purport as matter of expression and the continuum of material fluxes as matter of content. It now becomes possible to study the relationships between the five criteria of matter-substance-form and expression-content. These relationships, or modes of semiotization, are presented in table 3.

Table 3: Mixed Semiotics

	Matter	Substance	Form
Expression	purport (*sens*)	*a-signifying semiotics*	
Content	Continuum of material fluxes	*signifying semiologies*	

a-semiotic encodings

Guattari's (1996b: 149-151) definition of modes of semiotization is as follows:

1. A-semiotics encodings: an a-semiotic encoding is non-semiotically formed matter, that is, matter that 'functions independently of the constitution of a semiotic substance' (1996b: 149). Guattari's example is that of genetic encoding, which is the formalization of material intensities into a code that is not an 'écriture' (1996: 149), or a signifying system. A-semiotic encodings, such as DNA, contain a biological and an informational level. The biological intensities are encoded into an informational code that acts as a support of expression. As Genosko (2002: 167) further explains, genetic encodings can be transposed into signifying substances and in that sense can be semiotically captured and disciplined, but they are not in themselves formalized through semiotic substances.

2. Signifying semiologies: this category comprises 'sign systems with semiotically formed substances on the expression and content planes' (Genosko, 2002: 167). They are divided into two kinds. *Symbolic semiologies* involve several types of substances of expression. Guattari refers to gestural semiotics, semiotics of sign language and ritual semiotics among others as examples of symbolic semiologies, since their substance of expression is not linguistic but gestural. *Semiologies of signification*, on the other hand, rely on one unique substance of expression – a linguistic one, be it made of

sound, images or other substances. Guattari defines this category as the 'dictatorship of the signifier' (1996b: 150), in that semiologies of signification establish processes of semiotization that rely on representation which cuts signs off from the real, and from material intensities. This creates a 'signifying ghetto', where a 'despotic signifier ... treats everything that appears in order to represent it through a process of repetition which refers only to itself (Guattari in Genosko, 2002: 168). Semiologies of signification involve the processes defined in table 2.

3. A-signifying semiotics. A-signifying semiotics involves 'a-signifying machines (that) continue to rely on signifying semiotics, but they only use them as a tool, as an instrument of semiotic deterritorialization allowing semiotic fluxes to establish new connections with the most deterritorialized material fluxes' (1996b: 150). That is, a-signifying machines circulate on the planes of expression and content, and create relationships between matter, substance and form that are not primarily signifying. Guattari gives the example of 'physico-chemical theory', arguing that its goal is not to offer 'a mental representation of the atom or electricity, even though, in order to express itself, it must continue to have recourse to a language of significations and icons'. Rather, a-signifying semiotics 'produce another organization of reality' (Seem and Guattari, 1974: 39). As Guattari puts it:

> The machines of mathematical signs, musical machines, or revolutionary collective set-ups might in appearance have a meaning. But what counts, in the theory of physics for example, is not the meaning to be found at a given link in the chain, but rather the fact that there is what Charles Sanders Peirce calls an effect of *diagrammatization*. Signs work and produce within what is Real, at the same levels as the Real, with the same justification as the Real. (Seem and Guattari, 1974: 40)

Thus, a-signifying semiotics involves the harnessing of material intensities and the deployment of a system of signs to intervene in the production of reality. In doing so, a-signifying semiotics are not primarily concerned with meaning as the content of signification, but with the adequation of a communicative ensemble with the real.

Of the three modes of semiotization described by Guattari, the concept of a-semiotic encodings helps explain the semiotechnologies that work through the transformation of human input (meaningful content and behaviour) into information that can then be further channelled through other informational processes and transformed, for instance, into a value-added service. By contrast, the concept of a-signifying semiologies opens the way for an examination of the processes that make disparate semiotechnologies – linguistic, non-linguistic and informational ones – work together in order to produce a communicative context which is not only in coherence with the world, but which serves to work on the production of specific realities.

The politics of meaningfulness

The relationship between semiotechnologies, meaning and power examined so far started with a focus on the conjunction of semiotechnologies of signification and non-linguistic semiotechnologies in order to produce different kinds of signified content. Furthermore, there are also informational semiotechnological processes at play that do not primarily produce signified content but rather build a database, a reserve of raw materials in the form of information about user behaviours, practices, etc., primarily in order to produce a value out of meaning, in the for-profit participatory media model. This argument is in keeping with the other analyses of the rise of cognitive capitalism, focused on the 'creation of monetary value out of knowledge/culture/affect (Terranova, 2000: 38). One way to think about the relationship between these two types of semiotechnologies – semiotechnologies of signification (including non-linguistic ones) and informational semiotechnologies – is that they have rather distinct goals, and that, although they both rely primarily on non-linguistic processes enacted by software actors, they can be kept separate. This is broadly in agreement with the kind of paradox that is at the core of the debate on the democratic potential of participatory media platforms: that, on the one hand, they promote the production and circulation of meaning at the user level, while, on the other hand, they put in place invisible channels of dataveillance and surveillance, and thus rob users of their creative and meaningful input. However, Guattari's concept of a-signifying semiologies that work to produce the real opens a way to understand the relationships between these two different semiotechnical processes, and how it links with the question of the governance of

semiotechnologies. Guattari's notion of a-signification points out again that the study of meaning is not simply about the content of a message, but, more importantly, about the organization of the world and the perception of our place in it. In the for-profit participatory media system, this question of the organization of the world involves a patterning of activity, that is, the setting up of the specific processes within which we can make sense of the world. In this regard, the for-profit participatory media model draws a parallel with Maurizio Lazzarato's argument that 'in reversal of the Marxist definition, we could say that capitalism is not a world of production, but the production of worlds' (2004: 96). Lazzarato's argument is that new forms of capitalism are not about the production of goods and the production of subjects capable of consuming these goods, but about the creation of the conditions within which processes of consumption can be maximized. While there are marketers and advertisers in the participatory media context whose task it is to market goods and to convince users to buy them, the role of the commercial participatory media platform is to create the conditions within which marketing and advertising can coexist with an open field of production and circulation of meaning.

In the same vein, and with regard to the analysis of semiotechnologies, the a-signifying logic highlights the question of the governance of heterogeneous semiotechnological processes in order to achieve a communicative coherence, and to assign specific patterns, or regimes of the production and circulation of meaning, to an open-ended field of communication. We can find there a trade-off at play on participatory media platforms, as opposed to previous forms of online communication: the multiplication of meanings can only take place through heavily regulated, rigid, and oftentimes black-boxed modes of expression. For instance, it is much easier to click a 'share' button on a social network platform than it is to embed a hyperlink on an HTML page; however, HTML gave much more freedom to users to design and customize their Web pages. The deployment of semiotechnologies serves a logic of coherence by taking away from users essential creative dynamics with regard to new ways of publishing content, linking knowledge or experiencing social relations. This can be seen as an extension of the shaping of users' visual perceptions explored above: semiotechnologies serve not only to organize perceptions of the communication process and its possibilities, but also to ensure that there is no disruption to the constant production and circulation of meaning. In this sense, they take on a creative role of producing not only more meaning but also more meaningful links, social relationships and online experiences.

It is interesting to notice that in the for-profit participatory media environment, this software-assisted and non-human creation of more meaning takes the form of the constant production of affinities and the absence of disruption. For instance, we can have friends on social networks, but no enemies. That is, the logic embedded in the semiotechnologies of a social network is that anybody can potentially be a friend: it is just a question of fostering the meaningful links – other friends, similar likes, etc. – that will enable the actualization of friendship.

Online participatory media platforms are thus in charge of governing diverse semiotechnological processes to produce homogeneous communicative worlds where specific modes of the production and circulation of meaning become the norm. The aim of the platform is to create a coherent world where diverse interests – those of users and marketers, for instance – can be made to work together, or be of use to one another. As such, the question of the management of semiotechnologies at the a-signifying level, and therefore of the management of actors – human subjects, software processes, commercial interests, etc. – shows that there is a dimension to participatory media platforms which in the final instance should be understood not so much as a question of meaning, but rather as a question of meaningfulness. That is, the logic of the platform is ultimately to augment user-produced signified content with a range of meanings produced through diverse semiotechnologies. In doing so, the platform is in charge of connecting the user's potential of expression with potential actualizations articulated by other semiotechnologies so that, for instance, a recommendation actualizes a social need for friendship, or an advertised product answers a material or cultural yearning. In this way, the logic of the platform is to make meaning more meaningful through the patterning of regimes of meaning production and circulation. It is, in the last instance, about inviting users to actualize themselves within technocultural and technocommercial networks.

The question of meaning in a popular digital environment, such as the participatory media environment, is still a question of power. Meaning has to be rethought as the interface through which language and technologies are articulated together in specific ways to form semiotechnologies. The question of how semiotechnologies become operators of power formation has only been sketched in very broad terms within the scope of this article, through a limited focus on the question of the commercialization of culture,

knowledge and social relations. However, the question of semiotechnologies points out to the current blindspots in the study of meaning: it shows that meaning is not simply a human affair, that informational processes that do not have any signifying goals can nevertheless play a central role in linking linguistic practice to social realities, and therefore that communicative agency and cultural subjectivities online are radically dependent on and actualized through non-human processes.

Endnotes

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[1] The definition of 'matter' is taken from Genosko (2002: 161). The definitions of expression and content are adapted from Gumbrecht (2004:15).

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