Algorithmic Autobiography: a new literary genre

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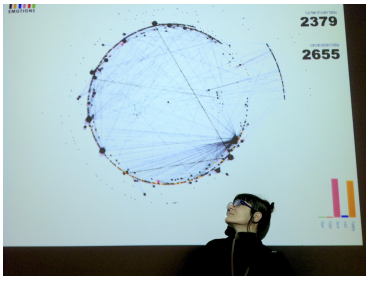

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Abstract

We are not alone when we compose our autobiographies. The world is always with us under many forms, and influences what we write, what we abstain from writing, how we expose ourselves and what we keep from exhibiting. It is safe to say that the being which is exposed in the autobiography is the result of a negotiation, which goes on at multiple levels, in conscious, unconscious, direct and indirect, between us and the world. In current times, complex socio-technological systems, and the forms of algorithmic governance and content curation which come with them, have radicalized this scenario. Algorithms are not neutral in exposing what they know about us. Leading to a situation in which they are able to become complex, ubiquitous Ghost Writers of our own autobiographies.

In this article we will use two artworks (Ghost Writer, conceived for the Streaming Egos project, and Stakhanov, created for the Transmediale festival), an hypothetic data-driven homicide and the anthropological, psychological and technological research that fuels them to explore the opportunities opened up by the emergence of a new literary genre: algorithmic autobiography.

A Data-driven Homicide

N.S. was sweating. The run uphill, at the end of the final part of his daily run, had the effect of burning many calories and of positively stimulating his cardio-respiratory activity, but it also seemed to cause his heart to explode. The digital wristband connected to his earphones started emitting a nervously rhythmic sound, to the beat of his crazed blood pump.

N.S. started thinking about the moment in which he would have published his daily run on AttitudeBook: 12 kilometers was not bad for a university professor used to a sedentary life.

His raving heartbeat was not the only thing that was troubling him, today.

He seemed to have the impression of being followed.

It all started a few days ago: a systematic sensation of being the object of observation, confirmed by what he thought was certain evidence: that boy over there, picking up the phone and turning around just it time to avoid being spotted; that other one, pretending to being there merely by chance, and, instead, N.S. had seen him in 4 different parts of the city already, at the exact places where N.S. had planned going. The guy would be waiting, checking his phone, looking precisely towards the direction from where N.S. would be coming from. And he would immediately divert the gaze as soon as he realized that he had been spotted.

Or the strange login reports on his Quantified Self accounts, from places in his town, but from different computers and devices. Or the glitches, in his smart watch, wearables, social networking accounts, emails, and even credit cards, in which systems started bringing up password recovery procedures, phone confirmation dialogs and more. N.S. changed all of his passwords and codes, so he was convinced that there was really nothing to worry about. But not today.

Uphill. Heartbeat. Breath in, out, in, out. Almost made it. At the top of this next hill was the climax, the apex of the run, and the point at which he would have been most tired and energetically drained, according to his wristband. So much that his doctor, two months ago, while N.S. was at the same spot, sent him an instant message: “Hey! Take it easy! The notification which just came in said that you were having a heart attack! I looked on the map and I saw you were running... but don't push yourself too hard, take it easy..”

Uphill. Sweat. Heartbeat. Breath in, out, in, out. Then it's all downhill, alone, in the beautiful park.

And, then, when he completes the uphill curve, N.S. finds them.

They are 5. Calm. Standing along the path, exactly where he would have slowed down for a second, to drink a sip of water. Exactly where there is no network signal coverage. Exactly where every day he stops to do some exercises, while looking at the landscape from above, as documented in many images he shared online.

They are silent. They smile. N.S. stops. he wipes the sweat from the back of his neck with his little towel. They step forward and say “We know everything about you, even things you don't know.”

Who writes our autobiographies?

What is an autobiography?

Are we writing an autobiography by leaving our traces on social networks, every day? What about the large quantities of other digital traces we leave behind in our lives?

What happens when non-human and algorithmic subjects/entities come into play, increasing the complexity of our interactions and influencing the process of construction and perception of the self?

We progressively expose ourselves more, every day, consciously and unconsciously, with consequences that are difficult to grasp: about time, identity, memory, rights.

The Self is a puzzle that philosophy – and more recently psychology and cognitive sciences – has always dealt with.

Approaching this complex matter will lead us to frightening and fundamental questions concerning our existence, consciousness, the ways in which we perceive space and time, and how we understand, produce and transfer knowledge: Do "I" exist? Does the external world exist? What is the "subject"? What is the "object"? What is memory? Are my memories "true"?…

The list of questions is much longer and the puzzle is unsolvable in one single self-conclusive image. But with a few simple observations we can try to inspect them by watching our behaviors, which is a good starting point:

- *The self is a membrane*: it acts simultaneously as the separation and meeting point between the subject and the outside world, and as such it allows us to establish relationships (between the I, the others, the world);
- *The self changes but also remains the same*: for example, we can recognise ourselves in an old childhood photo as opposed to the adults we have become;
- Despite the great complexity that the self raises as a philosophical object, *we constantly and spontaneously "speak" about our self* – everyday, since our childhood.

Jerome Bruner (1997) argues that the self is a matter of language which we can develop naturally to articulate a first discourse on the self. But to give shape to an autobiography (under written or oral form) is a different process: we need to put the self in a larger context (which includes culture, our beliefs, our relations and us). We have to "tell a story" about ourselves, which means that we have a narrative problem to solve: not only create a story, but a story which makes sense (to us and possibly to others).

This is why, according to Bruner, we can consider the self as a narrative process, rather than an "object", which allows us to create coherent narratives about our lives along space, time and cultures.

The self is strictly connected to memory processes and identity.

Not surprisingly, autobiographical memories are recognized as an important criterion of personal identity. Over the past two decades, as S. Smith and J. Whatson (2010) demonstrate how three terms have become central in autobiography:

- performativity;
- positionality;
- relationality.

In theories of performativity, identity is seen as something "enacted and reiterated through cultural norms and discourses […] an effect of storytelling". Positionality shifts the attention to the cultural and historical placement of the subject, and "subject positions" are viewed as "effects of social relations whose power is distributed unevenly and asymmetrically across difference". Relationality refers to the idea that "the narrator's story is often refracted through the stories of others" and emphasizes the subject's lack of autonomy.

All of these terms criticize the universal, stable and autonomous idea of individual, and shift the focus to the idea of the subject in process and in context.

We are never alone when we write our life story. Other people are always with us, with their presence, influences, relations, interactions, shaping not only our behaviors, but also what we remember, what we feel as relevant, important, worthwhile, changing the ways in which we express

it, for whom, and the contracts we establish by expressing ourselves: what to show, what to hide, how to interpret it, how to shape it.

We don't create our autobiography out of nothing. Rather, the story's outline and plot are the result of numerous impulses and micro/macro events (conscious or unconscious), relations, power relations, one's own memories and memories of others.

Our autobiographies, just like the self, are a process: the result of a constant remix. Rather than in "originality" authorship finds its basis in "composition", in the continuous process of "sewing the pieces together" that the self operates in order to give shape to the outline and plot of our lives, turning them into narrative material with which we can mould identities. More than "authors" we are "curators" of our own story, which turns out to be a fragmented object formed by a mixture of elements and materials, acted by multiple subjects. The only seemingly compact definition of autobiography ("writing one self's story") shows us a polymorphic and recombinant nature, which nowadays intertwines with (and lives through) new ubiquitous, technologically mediated dimensions.

A new space exists in which we are confronted with unprecedented actors and materials: the software and the algorithmic matter. Most of the time their logic is opaque and unaccessible to us, from the ways in which algorithms watch and classify us; to the simple knowledge and perception of all the data we produce; to the algorithmic influence on our perceptions which comes about as software agents become able to shape our media environment around us, according to logics which are beyond our grasp and understandings.

Finding new paths to access, interact and play with it, is a new challenge for contemporary human beings and societies which directly affects the possibility to build, own and fully understand the processes behind the construction of the self, our identities, our intimate relation with time, our personal and collective memories.

A new literary genre: the Algorithmic Autobiography

Image 1: Ghost Writer, the augmented books

To explore these evolutive tensions we created a new literary genre: the Algorithmic Autobiography, under the form of the GhostWriter project, commissioned by the Goethe Institut for the Streaming Egos project, and curated by Marco Mancuso and Filippo Lorenzin.

On the one hand, we confronted with the emergence of new forms of writing and of non-human authors, which are already influencing our relations and the ways in which we can perceive/perform/build our self-narratives. On the other hand, we tried to deal with the opaque and hidden nature of these writings and authors, mainly the software agents, algorithms, artificial intelligences which fill many aspects of our ordinary experience, and the organizations which control them.

Whether we realize it or not, whether we want it or not, a number of subjects and entities continuously keep track of the digital traces we produce, constructing multiple versions of narrations of our lives, each with different focuses, parameters, points of view, perspectives.

These are, to all effects, biographies.

Even more: they are two times auto-biographies. Auto, because they are automatically collected, processed and composed. And auto, because we produce and express these bits of memory ourselves in our daily lives, through our ordinary performances, like entries in a ubiquitous diary.

If we can collect all of these bits, all these episodes, all of these digital traces in our ubiquitous diary, we can imagine to produce a novel form of autobiography. Currently, multiple algorithms do exactly this, collecting all of these bits about ourselves, classifying them, organizing them by time, topic, emotion, behavior, patterns, types, focuses and more.

These algorithms are the “ghostwriters” of our autobiographies. They already exist, as our

ubiquitous diaries exist: they are just invisible to us.

Through this project we wanted to make them visible.

We wanted to create a new literary genre allowing this new form of writings to emerge, with al possible consequences: the *Algorithmic Autobiography*.

For this, we started to explore what happens to the construction of our life stories when algorithms and smart software agents enter the scene, together with information and knowledge bubbles, interfering and remediating our perception and possibility of perception of the world.

Radicalized Constructivism

Sexton (1997) divides the history of knowing into three eras: premodern, modern and postmodern. The premodern era emphasizes dualism, idealism and rationalism. The modern era focuses on empiricism, logical positivism, scientific methodology. It is here that the idea of professional knowledge which is able to produce objective understandings of the world is born.

The *creation*, rather than discovery, of knowledge is the main feature of the current postmodern, or constructivist, era.

Sexton also highlights the epistemological evolution: while in modernism "truth" is discovered (and, thus, exists objectively), postmodernity requires *participation* to construct knowledge.

Constructivist reality does not allow justifying reality through "objective circumstances " (Neimeyer, 1995): all constructed meanings reflect a point of view.

In particular, George Kelly's (1955/1991a, 1955/1991b) personal construct psychology (PCP) and personal construct theory (PCT) describes how people organize their experiences in bipolar dimensions of meaning (Raskin, 2002), or personal constructs.

These are constructed, not discovered (Burr, Butt, & Epting, 1997; Epting & Amerikaner, 1980). They don't exist as a given, but are constructed to predict how the world and its participants might behave, and are continuously re-fabricated, used, tested and modified according to the results of the tests, by evaluating how effective they were in predicting life circumstances.

Von Glasersfeld (1984, 1995a, 1995b) and Maturana (1988; Maturana & Varela, 1992; Varela, 1984) propose radical versions of constructivism.

Von Glasersfeld, for example, stresses how human beings can fabricate understandings to better navigate life *no matter how they match an external reality*. This notion derives directly from Darwinian evolutionary theories and from Piaget's cognitive development theory, but sees human cognition as a closed system: “adaptation does not mean adequation to an external world of things existing-in-themselves, but rather improving the organism’s equilibrium, i.e., its fit, relative to experienced constraints”.

In this perspective, reality is “needed” only when our schemes fail and need adaptation: first, recognition (and self-representation) take place; second is the action; third is the expectation that the action produces the expected result. Perturbation of the schema does not originate from conflict with reality, but through internal and interpersonal transactions, which may or may not lead to more accurate representations of reality (Raskin, 2002).

This is particularly interesting when framed with today's Filter Bubbles (Pariser, 2012), and the ways in which they computationally and continuously enact information environments around us which are prone for confirmation biases to take place. Here, when we are progressively induced to interacting and relating only with subjects and theses which are compatible (if not the same all together) with our own, what happens to these process of increased accurate representation of reality? This kind of process has only recently began to be explored, and could contribute to give rise to the environments which are florid in welcoming fake news, post-truths, intolerance, racisim,

conspiracy theories and more.

Proceeding outward, towards social contructionism, we would find theses according to which people are not considered to have any stable and essential personality (Burr, 1995; Gergen, 1991, 1994).

Social constructionists describe the existence of a number of realities which is proportional to the number of cultures, contexts and forms of expression, and the same goes for selves (Sampson, 1989), which become “multiphrenic” (Gergen, 1991).

Being a “person” depends on how people are talked about, their social practices and relationships (Burr, 1995).

In this sense, the role of language is critical: how people talk about themselves and the world determines the nature of their experiences (Raskin, 2002). This makes the study of power relations (for example in a Focauldian sense, see Rabinow, 1984) a fundamental issue in social constructionism, as some of the ways in which language can be used to describe the world and relationships start dominating over others. This also implies the study of the performative aspects of language, and the ways in which language and power are the means to achieve specific, possibly authoritarian, objectives and goals.

Reality depends, here, on how groups of people collectively elaborate ideas. Gergen (1991, 1994) pointed out the complications which emerge when communication technologies enter the scene, enabling and causing individuals to be exposed to high numbers and qualities of social contexts. Gergen calls this condition saturated *multiphrenia*.

These are the medium and environments which function as the foundations onto which we build our personal stories, both the ones we use in our intimacy, to gain private understandings about our life story, and the ones we make public: our autobiographies.

How does all of this change when algorithms enter the stage?

Life stories, Self narratives, in the age of Algorithms and Bubbles

Self-narratives (Gergen & Gergen, 1984) refer to the story constructed by individuals as they put self-relevant events in relation among themselves, in coherent ways (Cohler, 1979; Kohli, 1981). It is a tentative systematization of these events (deWaele & Harrd, 1976): one's current identity is not a surprise, but the result of a story, that often contributes deeply to "provide meaning and direction to one's life" (Bettelheim, 1976).

In the age of Hyperconnectivity, if one was called to produce an account of their life (especially if young individuals), they would most certainly use at least some degree of digital tools to explore their own memories and, thus, to be able to place them into a meaningful, correlated series.

They would access images, content, disseminated on platforms, devices, services. Some of this content would be obsolete, or placed on platforms which do not exist anymore. Some other content would be unusable, because hardware or software contexts have changed, because of different standards, software versions.

Some other of this content would be algorithmically processed.

This would be a really a complex remediation, as the algorithms would use their own complex logics to try and interpret what content would be more relevant for their user and more prone to generating revenue for the service provider, thus generating a selection and curation of content which would be representative of a complex, only partially knowable and accessible, reality.

This would create a peculiar scenario: in trying to compose the self narrative, the deck of cards would be shuffled, the card signs would not be the same, some cards would be missing according to

some inexplicable logic, some cards would be 3 meters wide, while others would only a few micron across, or dug deep into a haystack.

Our possibility to reconstruct would be biased on the account of the effects of multiple strategies which would be financial, according to the revenue that different types of content may bring to the service providers; technical, for example due to the archival strategies of large systems; administrative, in multiple cases, such as for violations of terms of service, or for system policies; service, for example in the search for relevance, according to which systems try to interpret and provide the content which is more relevant to the user; location based, if users would find themselves in a location which is particularly relevant for a series of content; interaction based, for example according to the specific content the user is producing at that moment in time; and many more.

On top of that, this would also not only be a matter of the individual alone, but also be influenced by the relations which they would be forming with other individuals and contexts.

All of these and other variables and contextual conditions would expose the individual to a complex geography of content, which would largely determine their capability to reconstruct their self-narrative and life story.

This would mean that constructing an auto-biography would be, as introduced with GhostWriter, a complex human/non-numan interaction.

For example, in GhostWriter, the content of the autobiography is produced by systematically capturing the elements of the life story as they emerge from all of those systems which are used to monitor and record the activities and actions of the individual: email, instant messaging, social networking, credit cards, wearable devices, domotics, quantified selves and more.

In GhostWriter all of these data, information and knowledge would be assembled according to Conway's (200) Self-Memory System (SMS), providing yet another level of algorithmic remediation, and, then, it would be visualized and placed onto an interactive interface.

This setup, creates, again, a complex system.

As seen in another work called Stakhanov and presented at the transmediale festival in 2015 (Iaconesi, Persico, 2015), these remediations, interpretations, modelizations, predictions are executed according to the logics of the operators of these services, but they are not neutral. Through their interpretation (the Imago in Stakhanov's cosmology), they affect reality, modifying it and creating loops which converge at reality's representation, no matter how far this is from some other experienced version of it.

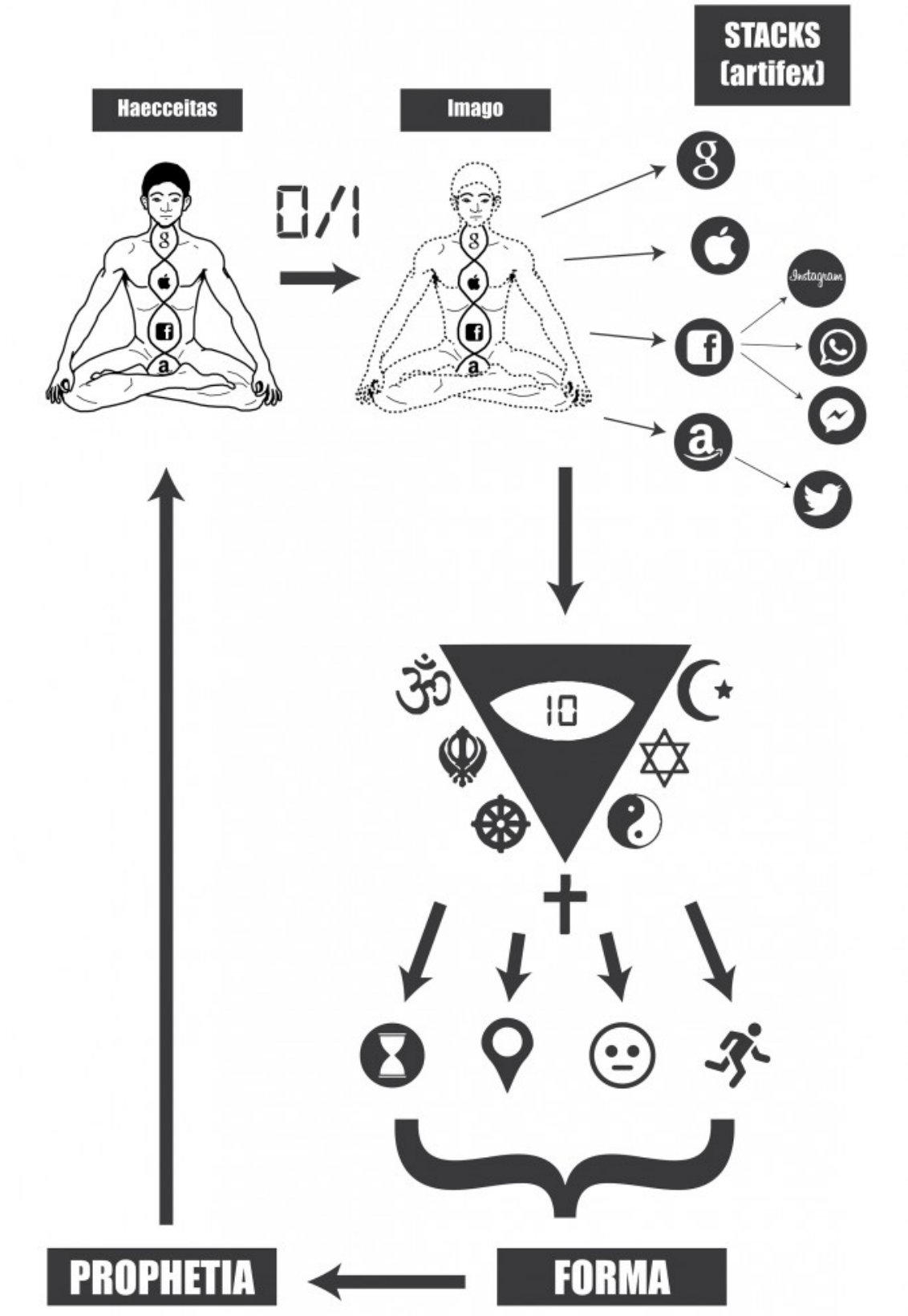

Image 2: Stakhanov, part of the cosmology

In this sense it would be interesting to understand how, in this novel literary genre, Gergen's components for construction of intelligible narrative would be formed and composed:

1. The Establishment of a Valued End Point

2. Selection of Events Relevant to the Goal State
3. The Ordering of Events
4. Establishing Causal Linkages
5. Demarcation Signs

Would all of these elements be chosen because they are effectively relevant for the individual, or to maximize probabilities for maximum revenue for the service provider, according to the algorithms' understanding of the individual's behavior?

And, even if it was the former item: would there be really any way to understand it, or to differentiate it from the latter option?

Conclusions

After the Streaming Egos exhibit, which was featured in Dusseldorf on January 16-17th 2016, we had in our hands a new, perturbing, object.

If we have demonstrated that non-human forms of writing are already in place influencing our perception and the way in which we construct the self, what (social, anthropological, political, legal) consequences can the existence and wide accessibility of an "Algorithmic Autobiography" have on people's lives?

We want to conclude this article trying to expand this question.

Recombinant, human/not human identities: a possibilistic vision of the "autobiographical pact"

When we relate to an "autobiography" we accept to relate to "someone" which is telling us a "non-fiction", "truthful" story about "his/her" life: this is what scholar Phlippe Lejeune defines as the "autobiographical pact" Which, he argues, is the condition for an autobiography to exist and to be considered as "valid".

It means that we recognize this "someone" (the "author") as a subject with a defined identity, and with precise responsibilities to us (the readers). In a word: we establish a "contract" (with social and even possible legal consequences).

In the context of the Algorithmic Autobiography, unprecedented types of subjects (authors) can come into play. A couple, a class of students, a group of friends, a collective of artists, a company, an institution and so on, could decide to feed the GhostWriter, collecting and using their data sources: the result would be an "autobiography" attributable to and directly written by the couple, the class, the group, the collective, the company and the institution itself, here respectively recognised as the "authors" and as single defined identities. At the same time, one single person with multiple digital identities could publish multiple autobiographies (multiple, coexisting, even contradictory versions of the self) theoretically without violating the pact.

What we see here is a shift from a concept of identity based on the compact vision of "individual" to a more fluid, polymorphic and recombinant structure: a "multividual", as prof. Massimo Canevacci Ribeiro calls it.

Individual is at the very basis of societies, in particular western societies: our ID and all sort of contracts we are allowed to stipulate are based on it.

- What happens when, starting from existence of a new literary genre and interacting with new types of cultural artifacts (books/publications in this case), we deal with new "multividual" authors?

- What kind of new social interaction we can imagine (or need) to validate the autobiographical pact as described by Lejeune?
- What are the consequences at psychological, anthropological, political and legal levels, on people and society?
- What does a polymorphic, recombinant, multividual based ID look like? How can we design and validate it?
- Following the same logic, can we imagine new type of "contract" based on multividuals? What do they look like? What are the consequences on property, work, marriage and so on?
- What are the rights od a multividual?

Things can get even more complicated.

We are now able to disseminate the environment with sensors.

We are building Smart Cities through this possibility, as well as smart homes, smart rural spaces, and smart schools, workplaces, kitchens, hospitals, brothels and bodies. With the Internet of Things we are populating our houses as well as our imaginaries with new connected objects and services. We are effectively transforming all of these objects/processes/products/services into potentially sentient agents, into potentially new types of subjects. This means that not only new types of human subject come into play, but also non-humans ones: a apartment building, a square, a wood, a river, a fridge, our dog can now write their own autobiography and tell us their own life story, just like we do. The GhostWriter will not make any difference, because from its point of view there is really no difference: humans and not humans subjects are (or can easily become) data generators.

Unlike smart services, an autobiography is not something we just buy or consume: or better, the act of buying and consuming an autobiography culturally implies a reciprocal relation between the authors and the reader. Otherness is added to the equation, in potentially disruptive ways.

- What are the consequences (psychological, anthropological, political, legal) of a non-human or interspecies autobiography?
- Do non-human entities/subjects have rights?
- If yes, what kind of rights?
- What are the relations and roles formed through this further form of autobiography? After all, we would be the ones designing the sensors, writing the algorithms, establishing what is sensed and what is not, deciding what gets stored or is relevant, and more. What happens, from this point of view, when a new "book" comes out: "The Autobiography of a network-connected lawn"?

On top of that there is software and authorship.

An Algorithmic Autobiography is written by all this different types of (multividual, human/not human) authors as well as by the GhostWriter: an actual algorithm. This lead us to the controversial realm of robo-ethics:

- Who is responsible (even legally) for our algorithmic autobiography? The software who writes it, us or both?
- What tools do we have (or we can design) to discern responsibilities, attributions, implications, boundaries and their progressive mutations? And: do we want to design them?
- Is a sort of "contract" needed between us and the GhostWriter ? If yes, what does it look like?

Questions of time: a continuous present

Our brain is not designed to store or remember everything. It is quite the opposite: we carefully select the memories we need and we want; we choose what to remember and what to forget, in complex ways; we craft our memory and we decide what is public, private, intimate, what to show or not to show in an autobiography. We need to forget and we have the right to be forgotten (or do we?).

Algorithmic Autobiography describes a continuous present in which we potentially access all our memories, all at the same time, constantly, and in which the algorithm selects them and passes them to us.

A hint of this is represented by the "Facebook memories", which are periodically brought to our attention by the popular social network. They are an everyday, consistent example of this kind of process: what happens when I get my daily "Facebook Memory" which sadly corresponds to a painful remembrance which I really didn't want to remember; so painful that I commit suicide after seeing it? Who is responsible? Did Facebook kill me? Could an algorithm be designed to kill me in this way? Do we need a contract for this? Can I do legal action? And so on. This type of issue and the model which it describes, brings up infinite critical questions.

This is of course problematic.

- Are we able to bear this as human beings?
- What are the risks of being exposed to our and others' memories, constantly?
- How does this affect our relation to time? To the perception of our past and possible futures?
- What about the right to be forgotten, both from the legal and existential point of view?
- How does a society get ready for this type of change? (since we don't really seem ready yet)

Privacy, data ownership and possible balance: Ubiquitous Commons and Algorithmic Autobiography

We have described GhostWriter as a "total invasion of privacy".

This is mostly because until now our relation to the data we produce is mediated by operators and platforms which own our data, because the algorithms are opaque to us, and because we don't know what data is harvested from us, how it is processed and how it is used. On top of that we don't really have any possibility to express and enforce how we'd wish this data to be captured, processed and used.

Using the metaphor of the "ubiquitous diary": not only at the moment it is invisible to us; we don't really own it and we largely don't know we are writing it, who will be able to read it and for what purpose.

In our practice, we confront with these kind of issues through the Ubiquitous Commons (Iaconesi, Persico, 2014) project.

Ubiquitous Commons is a research project which tries to confront the current scenario by creating a technological, legal and cultural protocol/toolkit. The starting point of the research is the creation of a p2p infrastructure in which people can describe identities and relations among identities, creating high quality relational environments in which to express how data is used, to be able to technologically, legally and collaboratively enforce these expressions, by using the protocol/toolkit.

There are a number of projects trying to confront with these issues, each in its own ways and with its own philosophies, but we will refer here to the Ubiquitous Commons, because we're familiar with it, and because we believe in its approach:

- Is it possible to apply Ubiquitous Commons in the context of the Algorithmic Autobiography?
- With what results?

This are all questions we want to explore in the near future.

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