MIGRATION traceability

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Just over ten years ago, in 2013, we founded a research programme dedicated to the study of migrants and migrations in relation to the development of information communication technology, or ICT. As a result of our fieldwork surveys, we began by observing that ICT had undeniably provided a very valuable support in order to satisfy *this compulsive desire for proximity, this obsessive need to get closer to the distant* which every migrant experiences. We also observed that ICT is a socio-technical tool which operates in networks and can be used and/or can intensify a network form of societal operation inherently specific to diasporas and which is manifested on the Web in different forms.[1]

This is in fact a question of a complex historical and sociological transformation for these technologies do not only affect communications which replace absence, but also all aspects of the migrant's life.

Thus the departure project is no longer constructed through the stories of returning migrants but frequently after an intensive search on Google and/or Facebook; on the journey, the majority of migrants will be equipped with at least a mobile phone; at the frontier, they will first have to be, as they say, 'screened' by the computer – go through the IT border, well before crossing the geographical frontier. The detention centres for undocumented persons are not only physical prisons but also spaces for digital imprisonment: this applies to the Schengen Information System or SIS, or other files for the registration of foreigners. People smugglers are also familiar with this digital environment and suggest ways of getting past 'the screen' and strategies for 'keeping a clean image' on the computer. On arrival in the country of destination, the mobile phone number, e-mail address, Facebook or LinkedIn account have become imperatives to be integrated, find a job but also to remain in touch with and reassure the family back home. Conversations on Skype and social platforms such as Facebook, RenRen, VKontakte, are part of everyday life for migrants and have transformed long range relationships: it is no longer a question of a short call now and again but of a way of living together at a distance. As far as

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[1] the definition of the migrant based on different forms of rupture considered to be fundamental and radical , runs into trouble. Alternatively, another organizing principle emerges: mobility and connectivity provide a basis for the definition of the twenty-first century migrant. **Yesterday the motto was: immigrate and cut your roots; today it would be: circulate and keep in touch. This evolution seems to mark a new era in the history of migrations: the age of the connected migrant.** The figure of the 'in-between space' or 'neither here nor there but here and there at the same time' announce as it were, the arrival of the connected migrant in the sociological literature. Globalization, network theories and transnational processes have pointed out certain aspects that can be used to configure his future profile: multi-belonging (to territories and to networks), hypermobility, flexibility in the labor market, the capacity to turn a relational dexterity into a productive and economically effective skill are all features that we will certainly find in the make-up of our conected migrant.

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family reunification is concerned we have witnessed the emergence of dozens of dating sites based on ethnic origin.

In the field of diasporas, we have witnessed an increase in the dispersion of communities in physical space and new forms of grouping, action and occupation of digital territories. We stress that the Web and more recently social media provide an environment which is particularly relevant to diasporas for they are inherently inter-relational, interactive and transnational. As major tools for the circulation of information and freedom of expression, the web and social networks provide scattered communities with a new alternative form of communication, representation and action enabling the development of new means of expression to diasporas and unexpected social movements. As the first studiesobserve, it is the migrant researchers and engineers who are at the origin of the occupation of the web by groups of diasporas. These networks of highly qualified people (based outside their countries and invoking a place of origin and identity) have used their technical and scientific skills along with their global dispersion to establish themselves on the Web. Their networks, now referred to as *knowledge diasporas* and their genealogical or bibliographical search tools also promote change in development policies; there is an increasing focus on the circulation of knowledge by means of academic *matching*[2] at the expense of a policy geared to the repatriation of migrants. We also note major changes in the field of remittances where several initiatives aim at the integration of banking and communication CORRIDORS, recognizing that while migrants and their families have little banking involvement they do, on the contrary, almost always have a mobile phone.

By promoting the accessibility of distant places and remote forms of action , the ICTs do offer unprecedented opportunities to migrant societies but they also involve new unexpected constraints which lead to controversial situations.

Monitoring and 'remote control' whether it be by the family or operational practices of monitoring by the State or marketing are facilitated and increased by the permanent 'availability' and traceability inherent to ITC.

On one hand, we witness overexposure of migrants to duties of solidarity towards distant families; there is also a duty to be present on social networks. On the other hand, we witness an unprecedented level of 'tracking' of the flows (of movement of people, information, goods and activities) set up by various official organizations (in the host country but also in the country of origin) and lastly by brands and various marketing platforms.

We only have to make a brief inventory of our means of access (mobile phone, laptop, bank card, transport pass, biometric passport, etc.) to understand the actual networks to which we belong and to understand our daily contribution to the production of a multitude of increasingly complex and infinite digital traces. Migrants or non-migrants, today we all circulate in a digital environment. As we travel, pay, communicate, surf the web, network on different platforms, our personal digital network grows bigger and bigger and speaks about us through the traces that our digital practices leave at every instant, at each step we take in the ITC infrastructures.

These masses of data generated by digital tools often crop up in research and are an increasing challenge to the traditional 'working' of the humanities and social sciences, in their methods but also in their categories, paradigms and ethical approaches. **How can we make use of this new 'raw material' in our research on migrations? What is the best way to organise the**

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[2] http://www.cidesal.com/

articulation of subjects and methodology in this context? How can the new methods imported from the exact sciences (statistical processing, analysis of graphs) be articulated with the qualitative research with which they sometimes conflict? Finally, and more generally speaking, what epistemological concepts can we propose to accompany the development of digitalisation and can we speak of a digital theory of migration?

I would like to suggest that what I call '*migration traceability*' may constitute a new model for the analysis of migration. What I mean by *migration traceability* is a trajectory of migration, written like a logbook or a diary, the outcome of the digital traces[3] which the migrant leaves at different points en route when using a digitalised environment. It is the outcome of the correlating of this data recorded by various digitalised sensors. These data are summarised in the form of codes, collected and stocked on various computer storage media. M*igration traceability* is a story told by compiling a multitude of contextual sources and flows of personal information which require an ever higher degree of automatic processing.

Migration traceability differs from the migration trajectory prior to the digital age in several respects. As a reminder, in mathematics and physics, the trajectory is the line described by any point of an object in motion. In sociology, trajectory refers to the successive social positions which an individual occupies during his or her lifetime, or a part of it. In the sociology of migration, the trajectory represents the totality of the successive social positions which an individual or a group occupies during their journey in physical space. The migration trajectory therefore has a geographical dimension along with a social dimension which is linked to the migrants' career, that is the successive social positions occupied by an individual during his or her life on the move. 'It transcribes a dialectic of both movement and settlement. It is at one and the same time 'objective', measured by means of statistical categories – defined by the successive positions occupied in the life of the migrant, and 'subjective' – expressed in the narration of life histories'.[4]

Migration traceability, while remaining a trajectory as defined above, simultaneously introduces a new qual/quant methodology; this integration of quantitative and qualitative research locates the approach fully within the field of the digital humanities and computational social sciences, close to knowledge management and in general the processing of *big data*. Today, it is now possible to recover a multitude of digital traces: these are linked to journeys, interaction, opinions, monitoring. These traces, standardized by encoding, enable processes of memorization, calculation and time-stamping.[5] The statistical processing (which is objective) and the life history (subjective) can therefore be 'narrated' automatically.

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[3] By digital trace, we use here Alain Mille's definition: 'the digital trace consists of the digital prints left accidentally or on purpose in the IT environment during an IT process', Alain Mille, Des traces à l'ère du web, *Intellectica, 2013/n°59,p.9*

[4] Violaine Jolivet, « La notion de trajectoire en géographie, une clé pour analyser les mobilités ? », *EchoGéo* [On line], 2 | 2007, mis en ligne le 22 février 2008, consulté le 20 novembre 2014. URL : http:// echogeo.revues.org/1704 ; DOI : 10.4000/echogeo.1704

[5] As the IT environment has internal clocks intrinsically linked to its technology, time-stamping is therefore always possible at the time of the production of the imprint.

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On one hand, *migration traceability* has a representational dimension which enables the reconstitution of a migratory itinerary in real time (but also extending over long periods, even over generations since the digitalisation of the archives). On the other hand, it ensures an objectivity and a predictive property which is particularly sought after by decision makers in all strategic domains – governments and NGOs, the media and businesses.

My contribution provide the occasion for a critical review of the use of digital tracking in migration studies. Here below a pattern of the methodological sequencing: constitution of a corpus, collecting and sorting of digital traces in response to a questionnaire, visualisation of the data, qual/quant analysis and exposure to field reality off-line.

The other two articles[6] are part of the first edition of the e-Diasporas Atlas[7] which was devoted to the very large quantities of data generated by the Web by the different forms of on-line activity associated with migrant populations. This pioneering project which mobilized over 80 researchers all over the world and which innovated by associating the social sciences and engineering shed light on the new forms of diasporic communities made possible by the Web. The diasporic networks were ' crowl', 'scraped'(extraction of targeted content), archived, visualized and analysed, generating an exceptional corpus of more than 9,000 diaspora sites and the study of roughly thirty diasporas on the Web. The project required the establishment of new research methodologies, combining qualitative field studies and the topographical analysis of networks. It also required the development of specific tools, such as the Navicrawler enabling the exploration of the web (www.webatlas.fr/wp/navicrawler) and Gephi (www.gephi.org) which has become the reference software for the visualization of networks or the establishment of a platform (http://maps.e-diasporas.fr) enabling the manipulation and visualizing of the data and graphs used. Furthermore, e-Diasporas[8] has addressed major epistemological issues, by demonstrating how digital methods can be mobilized by the social sciences, contributing to a better understanding of the Web itself, as an object of study. Finally this endeavor has enabled the e-diasporas themselves to acquire a certain recognition. Researchers and doctoral students have used, it as have actors such as teachers, associations or even governments. The reality of diasporic communities on the web is beyond doubt – in the first instance for the diasporas themselves, who are today setting up complex strategies for specific media visibility on the web.

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[6] The one signed by Sabrina Marchandise deals with the social networks of a group of Moroccan students and that of Kristina B

[7] www.e-diasporas.fr

[8] By e-diasporas we define a migrant community in so far as it is organised through a variety of digital media, in particular on the web. Its practices are those of a community within which the interactions are increased by digital exchanges.

An e-diaspora is a dispersed collective; by this I mean a heterogeneous entity whose existence is based on the elaboration of a shared meaning, a meaning which is not defined once and for all but which is constantly renegotiated in the course of the evolution of the collective.

An e-diaspora is not a stable collective but one which is re-drawn by each new arrival; it is a collective which is self-defined and self-organised; its numbers rise or fall not through a process of inclusion/exclusion but by joining or leaving, simply by the voluntary production of a hyperlink to a web site (or its deletion).

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In the field of the visualization of information, the e-Diaspora Atlas marked a turning point in the spatial approach to diasporas; till then this was restricted to representations of stocks by country (localization of the total number of members of a diaspora) and of flows between countries of origin and of destination. In the e-Diaspora project, space is approached through the intermediary of Internet traces which frees us from this methodological nationalism by starting with the location of activity of the diasporas and the evolution in real time of their interactions.