Technology, Privacy, and Adapting to Multiple Realities in the Workplace. A view of Aaron Cicourel' s approach combining insider and outsider views.

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ABSTRACT

Based on an unfinished draft of a collaborative research paper comparing the issues of privacy and cognitive overload, this paper illustrates Aaron Cicourel's work-in-progress in research and writing. The surviving co-author explores how Cicourel managed to be both an insider and an outsider to the field, an approach that enabled him to have strategic empathy and sympathy with the people he observed and a deep understanding of the subjective experience of the actors, which led him to original theoretical insights.

1.Foreword by the second author

This paper is based on the draft of a paper that was started in 2001 when Aaron Cicourel was the control analyst of the Laboratory of Design for Cognition at EDF R&D (for short, "LDC"). That paper was never finished. For years we said we should finish it and publish it, and episodically we made some edits, but we were both so busy with other things (including two other papers that we never finished either). I suspect that if Aaron was still alive this paper would still be unfinished, because in the last few years we never came back to it. Originally, there should also have been another case, in the medical domain, that Aaron wanted to bring in, but we never really added it. I am using this draft as a photograph of work-in-progress: it gives us an insight into how

Aaron did research, and understand better his original, and productive, way of combining emic and etic approaches.

The LDC was the largest industry living laboratory at the time, built as an instrument to observe white collar, "cognitive work" on real users and the impact of new information technologies. Indeed, the lab was a whole building, the K1, an experimental "office of the future" where people worked on real projects; the whole interior was under continuous video observation, 24/7, with many cameras (Lahlou, 2009: 113-158; Lahlou et al., 2012). There is a film that shows the environment here: https://www.youtube.com/watch?v=GZVIpNgZqoo

The LDC experimented, tested, and disseminated in this vast organization that is EDF, the historic power operator, the new (at the time) information technologies, such as wifi, nomadic workstations, videoconferencing, virtual machines, RFID, telework etc.

Figure 1: Outside envelope and partial floor plan of the K1 building housing the LDC, 2000.
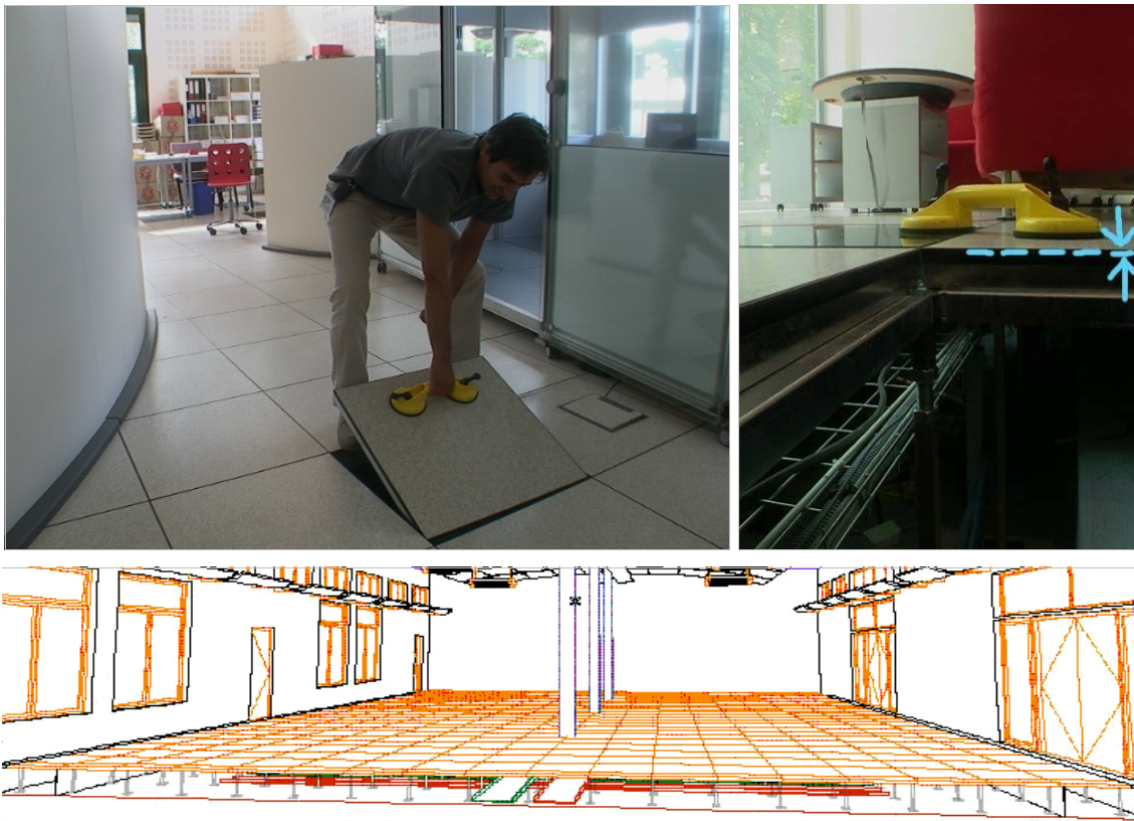
Figure 2: The K1 internal structure supporting flexible environments to tests many different configurations, designed by (Hartkopf et al., 2000)

Figure 3:Aaron Cicourel inside the LDC, October 2002.

As the founder of the LDC and manager of the project that funded it, I was aware that this experiment carried serious privacy risks. Considering Aaron was the most critical social scientist I'd ever met, but also a fabulous observer and constructive thinker, I asked him to be the "control analyst" of the lab, in 1999, while we were still building the Lab. Aaron's role was to "come and critic", in whatever way he saw fit. Aaron did not have a written contract, because that would have impeded his freedom. He had full access to the lab, and the deal was that the LDC would fund his travel, stay and subsistence whenever Aaron wanted to come. Aaron had his workstation in the LDC, full access to the K1, and was considered as an LDC member whose role was simply to observe independently (and without connection with the rest of the observation system). Among other things, he participated in our meetings as an observer.
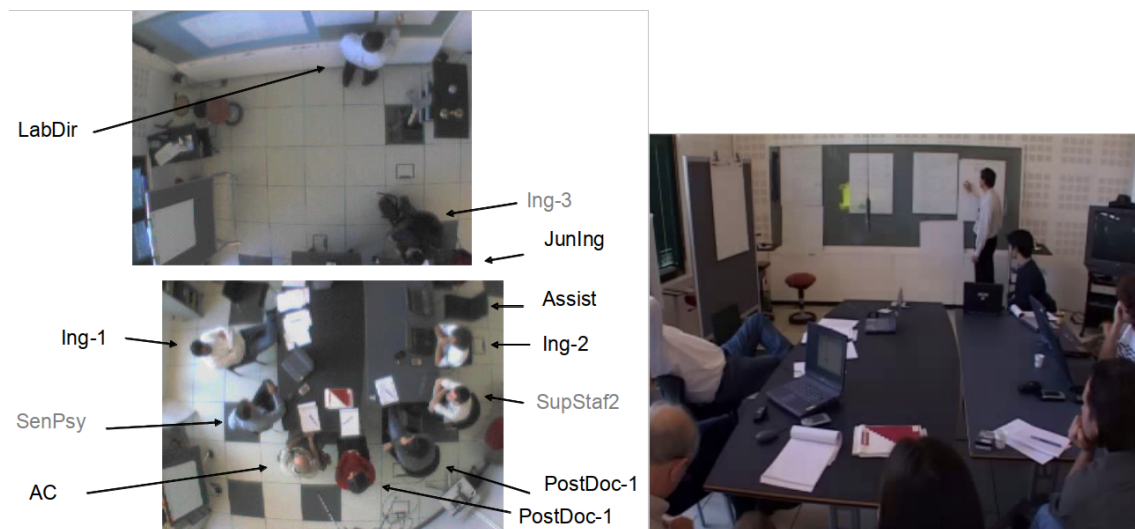
Figure 4: A routine weekly meeting in the RAO room, seen from two ceiling cameras and from one ground camera, with Cicourel ("AC") attending and taking notes (bottom left).

Aaron was not committed to any formal reporting. On a regular basis, Aaron and I would chat, and Aaron would tell me what he thought could be risks or ethical issues and give me advice. We also continued to work together on cognitive attractors.

This lasted 10 years, until I left the lab to join the LSE, in January 2009. Aaron came to the LDC for periods that varied from a week to two to six consecutive months, at intervals that were at Aaron's whim. Aaron was also using some of his time in Paris to visit libraries and advance on another of his projects, on Sephardic community in Spain, so having a base in Paris was convenient. Aaron was fascinated by the LDC experiment, so he came often, and became my mentor and close friend.

In the paper that follows, Aaron connected two issues, cognitive overload (CO) on which he had been working with me before, and "privacy" which was the reason for his presence in the Lab. This coincidence was initially accidental but produced, as often with Aaron, an original insight.

Here is the insight: privacy and cognitive overload have something in common: a collision between two tracks of activity, and this collision is problematic for the mental scaffoldings that come with each. Let me clarify. Privacy is breached when one is addressed by one role while wearing another. For example, you are at work, as an engineer, and you are exposed suddenly to another of your other roles, e.g. as a parent, because you get an urgent phone call about one of your children.

Cognitive overload was so far only described as a syndrome of feeling overwhelmed with the amount of information, without being able to control the cause (Lahlou et al., 1997). What is new here is that it is understood as a process, which happens when your stream of thought for one activity is collided by other streams of thoughts forced on you. For example, you have two deadlines on the same day, and you are trying to handle both streams of work in parallel, on top of all the natural interruptions of office work.

In both cases, there is an obstacle to the desire to follow your main activity as you want, without being disturbed. You have the feeling of being prevented, of not being able to play your role properly because outside interference is getting in the way. Being forced to deal with something that is irrelevant to what you are trying to pursue at that moment, and that jeopardizes it, is very unpleasant. This situation creates an internal conflict, cognitive because of the mental overload; and social because it creates inconsistency between the roles you wear. This comes with a feeling of "invasion" of your mental and social space. This frustrating, and stressful, experience is what these situations have in common. And I believe Aaron was able to sense the similarity of the actor's experience in both situations.

As I read the draft again, I think that, at the time, this connection between CO and privacy came from the observation that some members of the lab also had another role in other projects, a role whose demands sometimes collided with their role in the LDC. As a result, they were overloaded because they were trying to pursue both roles at the same time, while hiding that double work from their respective managers (me, and their departmental boss). Perhaps this coincidence is more superficial, and accidental, than the deeper intuition I describe above, and it may have helped building a finding more generic and solid. But that is how discoveries happen.

The finding, as I try to express it above, is the result of our collaboration with Aaron. Nevertheless, I think the initial intuition these situations had something in common, the actual *insight*, was Aaron's: he has an acute sensitivity of human experience. I have always been amazed at how Aaron was able to grasp deep structures behind the surface of phenomena. Another paper on which we worked -and never published either - precisely showed that to understand a field properly, you needed to have a couple of investigators: the outsider and the insider, because their views are complementary and can compensate their opposite biases (A. V. Cicourel & Lahlou, 2005). I will come back to this in the end of this paper. That is likely what happened in this case. I think that,

with many of his mentees, Aaron had the original spark of what became full-fledged ideas, and then gently let us believe that we were the ones who had the idea ourselves.

This paper is a strange exercise, because I am trying to make a final version of a paper with a main coauthor who is not there anymore, and whom I am trying not to betray. But the draft version I start from is really half-baked, so of course that is impossible. Nevertheless, I thought I owe to Aaron that the spark of his intuition should not be lost, and I will go forward. Apologies to the reader, and apologies to you Aaron, all the errors are mine. I kept as much as I could from Aaron's writing, whose style is easy to recognize, and the original title, to which I added a subtitle.

2.Introduction

The paper will address the interface between technological development and privacy under complex constraints within organizational settings and occasional excessive demands on information processing or cognitive overload (CO). The organization of a work group has a direct impact on the kinds of communication that are expected and unexpected. The communication that occurs is directly affected by attention and memory limitations, and closely linked to the kinds of interaction that emerge routinely, including exchanges within social networks in which personal and corporate business are interlaced. Cognitive limitations are directly proportional to energy devoted to sustaining one's existence in multiple life-worlds that are a normal part of a person's normal, everyday existence.

Within a given task environment, personnel pursue a kind of polite discourse that is expected and sanctioned by colleagues. This everyday world, however, includes other realities having to do with particular task expectations associated with work conditions. Issues of privacy are always linked to general conditions within a particular organization, including interpersonal relationships that can complicate the ways in which personnel interpret their obligations with each other. Stated in other words, there tends to be a general tendency for personnel to seek the appearance of stability despite underlying currents of implicit and explicit conflict.

One view of privacy refers to an individual's sense of having their personal mental and physical space and identity disturbed (that is, an "invasion" of their privacy or identity). For example, revealing confidential or highly personal (hence "private") information

about someone or ridiculing specific aspects of their appearance or voice or gestures or some part of their clothing or body. Another view is that CO can include the fact that within organizations, we must always interact with others such that our oral and written speech acts, body movements, facial expressions, and paralinguistic activities do not reveal directly or inadvertently, thoughts, reactions and plans that might not be perceived as "appropriate" for some or all members of an audience on a given occasion. Thus, in addition to the multiple demands that derive from organizational constraints, interaction with others, attending to environmental artifacts, and the skills required thereof, our explicit and especially implicit memories and thoughts constitute a serious source of additional CO because they are constantly activated as reminders of what could or could not or should or should not be revealed to others as an interactional setting or activity evolves.

A broader sense of the notion of CO revolves around a concern with being discrete about one's oral and written speech acts and motor behavior in order to protect or mask interpersonal relations and organizational or corporate practices, intellectual property, and trade or industrial secrets. Such concerns always interact with a kind of privacy we believe should be left unstated despite being associated with our memory systems and ability to maintain and concern with the poise and self-esteem that we want to project in our relations with others. These conditions also affect and can be inferred from the content and style of written communication. With respect to the general concern with privacy in computerized environments, there are many recommendations that have been made that appear to be recognized by all who are involved with ubiquitous computing (UbiComp) across a wide spectrum of institutions and services (e.g., "austerity in data collection and avoidance of data formation," "anonymous services," "specific-use-pseudonyms," "anonymizing video material," and restrict the collection and circulation of facts; communications; or opinions that relate to individuals). The immense challenge, of course, remains the implementation of such recommendations and the consequences in terms of how groups or organizations function.

Cognitive overload, therefore, refers to a sense of loss of control over one's ability to process and retain or monitor information, or the perception of being overwhelmed because of having to address many pending tasks or decisions and insufficient time or resources to resolve them (Lahlou et al., 1997). One consequence is the inability to even know what information may have "slipped through" the limited capacity processing that affects all communication. A more general way to state the problem is the necessity of extending the notion of CO to include interaction with the mental, motor, and linguistic

work of creating and sustaining an acceptable appearance, an "appropriate" demeanor and being circumspect vis-à-vis privacy issues. A delicate problem is what constitutes sustaining "appropriate" privacy versus being viewed as "deceptive."

An often elusive yet important aspect of privacy issues and cognitive overload is the impact that corporate memory and individual memory has on what becomes represented officially and informally when the issue of privacy becomes an accountable topic in an organization.

In the pages that follow, we examine the issues of privacy and CO in both a broad sense.

3. The case

The LDC case is a large project, an experimental "office of the future that is a user lab dedicated to the development of information technology for office work and beyond, that was built in 1999 and in full operation from 2000 to 2009. As that is a project, its participants are both project members, who work in the lab on a continuous basis, but are still members of their department of origin, for which they continue to work to some degree. Their contribution to the Lab is contractualized between the Lab and the giving Department on a basis of % of Full Time Equivalent (FTE), and billed by the giving Departments on that basis, in internal accounting on the budget line of the LDC. The lab is under continuous recording 24/7, with many cameras and devices, precisely because it is an experiment. All persons entering the lab are required to sign an informed consent specifying they agree to being recorded, and that the data will be used for scientific purposes. The lab members are under the authority of the project leader (Lahlou), but they still also are under the authority of their respective heads of departments in the R&D Division.

Because the workload is high and the demands urgent, conflict between these two belongings, regarding the allocation of time, is always a risk, present tacitly but can emerge at any time, at least in subtle or muted forms. For example, an engineer allocated at 60% to the LDC may have a deadline at LDC, and another around the same date in their Department on another project to which they are allocated to at 40%. The concern with maintaining an "open" work setting in the LDC (where everything is recorded for research purposes) also must mean maintaining strict institutional

constraints over confidential material. The extent to which the "openness" is pursued by participants is sometimes an illusive empirical issue we will address below. This creates a heavy mental load, which is both managing the workload protecting each of the work roles and domains from being cannibalized by the other, and appearing to each of the communities to which one belongs (the Lab, the Department) as being a loyal member of the community; while in fact everyone is a "double-agent" who is trying to be faithful to two entities. We see here that there is a potential cognitive overload of the individual, in the classic sense that the cognitive capacities of the individual are overloaded by a series of multiple concurrent demands, each corresponding to playing one's many roles as expected. For example, work on one's deliverables for the project, but also report to one's department, attend to colleagues who ask for help, touring visitors in the lab, participating in weekly project meetings, etc.

The idea of an individual's sense of privacy includes variable interpersonal conditions (suppressing privacy with colleagues, between colleagues and highly transient visitors, as well as with special visitors who may remain for days, weeks, or months). How subjects cope with privacy as a form of presentation of self with or without a feeling of CO under such conditions presupposes tacit or explicit choices of particular strategies and knowledge resources that are constrained by implicit and explicit memory, local ecological conditions such as artifacts, what other personnel are visible or in auditory range, and interpersonal relations among those present.

In the present study, the primary subjects of the LDC have created a unique environment in which privacy is presumably eliminated as part of an attempt to create a special research setting that seeks to improve both the organizational efficiency and interpersonal atmosphere within office environments.

There are many cameras on the ceiling, covering every angle of the workspace, and they run continuously at a rate of one image per second. All meetings are recorded on video. Furthermore, as the participants continuously develop new devices and systems, and that is part of the research, which is documented. Physiological measures cans also be measured with wearable devices, and often the participants wear "subcams" (Lahlou, 1999), miniature video cameras recording their activity from a first-person perspective.

So there exists an "experiment" within an "open" experimental laboratory setting in which those whose responsibility it is to maintain its "openness," or privacy-free environment often must cope with their own CO because of the existence of inevitable

"multiple life-worlds" (multiple realities) in which they must ostensibly conform to the goals of projects in two environments (the Lab and their Department) but where an official "openness" masks, at times, activities in one setting. In the Lab, therefore, privacy and CO can be exacerbated because of a sometimes-ambivalent perception and pursuit of the "openness" policy and the deliverables that must be pursued.

Our research on privacy and CO, therefore, seeks to "push the envelope" of the notion of privacy to ensure that we can grasp some of the limitations of the concept. Attempts to eliminate privacy can be dangerous because it can destroy cultural practices that include private practices that we have been socialized to believe are warranted. Such practices are essential for maintaining interpersonal relations at work, play, in the home, and in public places. Because in the experimental setting of the Lab, where all are volunteers, and in fact contribute to design the recording systems, we observe an environment where there is in principle no privacy. But in fact, participants manage to have some privacy because it is indispensable. This "goldfish bowl" creates an extraordinary experiment in privacy. In fact, writing guidelines for privacy is a work package of the project, because the European Commission is interested in seeing what the impact of Ubiquitous Computing would be on privacy (Lahlou & Jegou, 2004).

The laboratory is located in a large state-owned public utility in which the traditional idea of privacy is a ubiquitous problem. For example, protecting industrial and managerial secrets and practices. The extent to which the ideals of attaining and sustaining efficiency and stable interpersonal relations in the laboratory setting and the broader organizational context that includes both a hierarchical and horizontal authority structure will be addressed below.

The work conditions in the Laboratory of Cognitive Design (LDC) in the Research and development (R&D) division at Electricité de France (EDF) are special in many respects but also mirror in large part the way the entire R&D division functions on a daily basis. Having a vertical authority structure (the Department) for allocating personnel to work in different task environments also means that promotions and salary increases will be affected by this traditional form of bureaucratic organization. The general idea is that the use of a horizontal authority structure (the project, here the Lab) for day-to-day work activities will foster a cooperative atmosphere unencumbered by salary and promotion policies and decisions. A particular project is often managed by a particular person who obtains insider EDF funding. Outside funding, however, is also possible and could include a large corporation like IBM, French Telecom, General Electric, a French

or foreign university, or a project with the European Union. That is the case with the Lab, which while being largely funded internally by EDF R&D, also obtained substantial European funds in a joint project with other research entities outside EDF, situated in various countries of the European Union. The Lab is also part of an intercontinental network founded by the project leader, RUFAE (Lahlou, 2009), that connects the best labs working on augmented environments worldwide, including UCSD Cognitive Science Department where the first author is affiliated. So, the Lab, as a project, must report internally to the R&D but also to the European Commission, and it is deeply connected with other labs in the US, EU, Japan and Russia.

In order to understand the unusual work environment within the LDC, it is necessary to understand that the allocation of personnel to different task environments and/or a particular project includes some negotiation between individual personnel, someone in the vertical hierarchy at EDF, and a project manager. Personnel is allocated to the project by the department in % of FTE (full-time equivcalent). E.g. an engineer might be allocated at 50% of their time, while another is allocated only at 20%, and another full time. The project buys the time from the departments. In this case, the personnel dedicated to the project are some of the very top engineers in their specialism (communication, IT, security, design, code...) who volunteered for this exciting flagship project where they will have full clearance, and a large budget, to explore with the latest devices, in collaboration with the best labs worldwide. Therefore, these elite personnel are also critical resources for their department, which will tend to call on them to solve some thorny issues, even though they are supposed to work for the project. On the other hand, these personnel know that the project has a limited duration, and that their career and promotion depend on their department.

The negotiation between the project manager and the departments, however, does not specify the precise manner in which a person distributes her or his time during a given week, just the generic % of allocation (e.g. 60% FTE). A project manager can specify, say, weekly meetings and hope that all members of the team or project attend in a timely manner. The director of a laboratory or project, however, cannot readily dismiss a regular EDF employee; someone in the vertical hierarchy must sanction such a dismissal. And in practice, such a dismissal never happened in the Division as long as anyone can recall.

In short, co-workers on a project must be motivated to address the assigned tasks or projects (here: of the Lab) despite the lack of sanctions that could be used by the

project manager.

If the project manager complains to their Department manager in the vertical hierarchy, he or she may be viewed as incapable of managing a team. Team members may complain that the horizontal project manager is overly demanding. Unlike Japan, so we could speculate, the team does not readily exert pressure on a fellow employee viewed by the project manager as not "pulling her or his weight" because the co-workers who are not managing a project are likely to have stronger ties to each other than to the manager, if they come from the same Department. The manager must, therefore, combine charismatic qualities with pragmatic ones in order to enlist the support of their team.

The bureaucratic organization of EDF R&D, therefore, is not at all typical of industrial or commercial bureaucracies in the sense of Max Weber's classic description (Weber, 1968) or Peter Blau's work in two governmental agencies (Blau, 1956). Professionals in Blau's research, for example, could occupy horizontal positions vis-a-vis their responsibilities but were accountable to and assessed by both supervisors and auditors. Here, the project manager must supervise the completion of "deliverables" (a report, software, new technology, graphic design, etc.) but cannot easily sanction a member of the team if he or she is not deemed to be achieving a "satisfactory" level of productivity for completing the deliverable.

The LDC is fairly new and was planned in order to improve the quality and efficiency of daily work settings by the design and introduction of new technology while maximizing the ability of researchers to observe routine meetings by personnel in the LDC as well as groups from other sections of the R&D Division. Cameras, for example, can be found attached to the ceilings in different parts of the laboratory, and portable video cameras are available for the routine recording of activities at the LDC as part of an application of its own research agenda. When meetings are held outside of the LDC lab but within the R&D campus, portable cameras are carried to the site. There are, therefore, several possibilities in which privacy and cognitive attractors interact because of the EDF and LDC management styles. For example:

LDC personnel are "true insiders" when only lab people are present.

LDC personnel who are consultants become "partial" insiders and are considered part of the team because they are in the Lab on a full-time basis, for years on.

The insider status of the LDC personnel is further diluted when outsiders are hired for brief or fairly long periods of time for a particular project or as consultants who come on a regular basis so long as funds are available.

Outsiders can also be student interns with a range of educational background and their relationship to the director of a project as their supervisor, as with some consultants and technical experts can mean a closer relationship to the project director than to other LDC personnel.

Finally, there are occasional visitors who may be involved with either an EDF sponsored research project or involved in a collaborative relationship between EDF, the LDC with both external funding and personnel from another company like France Telecom or IBM or a university inside or outside of France.

An outsider cannot function without the invitation, support and direction given to him or her by the project director. The long-term outsiders and visitors must negotiate their own use of attractors and presentations of self in order to avoid awkward relationships with LDC personnel on the interpersonal interaction of the project and director and his LDC colleagues.

All visitors must sign confidentiality statements that give EDF jurisdiction over all recorded materials and the intellectual property associated with the use of ideas associated with EDF and the use of its facility. In the open arena of the EDF setting, however, what counts as "confidential" information is not entirely a routine nor obvious matter. The fact that persons from different cultures and languages can be found in the LDC means that French and English in particular, become privileged regardless of the speaker's native language. The sociocultural issues associated with explaining the policy about privacy issues to participants appears straightforward but needs empirical attention. Privacy issues, therefore, are not self-evident, and can include a variety of unanticipated consequences. In the pages that follow, we try to identify some of the key issues and provide some documentary evidence from actual exchanges within the LDC.

4.Theoretical framework

The notion of privacy, at the outset, assumes that individual and collective properties and functions are associated with the control and dissemination of information.

Information, viewed as commodity, can take on different meanings within different communities, and is exchanged in ways that can mask the various possible intentions associated with interlocutors or the readers of a written document. Normative elements of polite discourse can vary across cultures, and it could be argued that certain elements of a "code of privacy" is always a tacit, built-in feature of many speech events despite the common possibility of lapses into a vernacular, especially when there is a break in a formal exchange. We assume that even intimate spousal family relations cannot avoid the concern with revealing different kinds of information, and "information" here can mean such subtleties as facial expressions, voice intonation and pitch, and gestures or bodily movements. Further, our different memory systems both store and produce elements relevant to privacy, because of being directly accessible (explicit or declarative memory), or indirectly accessible (implicit or non-declarative memory) sources of information. Communities, when viewed as systems of information distributed across its members (D'Andrade, 1995; Roberts, 1964; Schuetz, 1953), automatically means that group and individual conceptions of privacy will also be distributed accordingly.

Linguistic and non-linguistic memories interact in ways that are difficult to assess, but in both cases, the notion of meaning is assumed to be an emergent, locally constructed outcome that is always contingent on the existence of a socially organized environment of objects and mental spaces in which conceptual integration and compressed semantic meanings are often embedded but not always self-evident in speech events and speech acts. The notion of mental spaces is adapted from (Fauconnier, 1994), and conceptual integration and compressed semantic meanings ("blends") (e.g., metaphors, metonyms) can be found in (Fauconnier & Turner, 2002). The latter linguistic notions are useful tools for understanding the nature of privacy and CO displayed in connected speech or discourse.

The two work settings (the Lab and the Department) should be understood as the stage of what we have been calling "multiple life worlds" and of the display of different presentations of self. In the Lab, tasks are designed to be part of an "open" work environment in which all personnel are aware of the possibility that their actions will be recorded (as was true of the data cited below, extracted from the recordings routinely made in the Lab). The personnel also are aware of the organizational concern for privacy that pervades the work setting. Personnel are quite sensitive about official policies yet can be observed to flout them in practice while also engaging in their own personal retention of some emotions, feelings, knowledge vis-à-vis others in the Lab.

5.Cognitive overload, privacy and attractors

The problems stem from the fact that a given individual has multiple roles, and that the demands of these multiple roles exceed their work capacity. Many people and organizations feel entitled to ask the individual for some contribution, in the name of their role. In other words, the individual is taken into multiple social roles.

The role is the set of behaviours one is expected to perform, and the status is the set of behaviours that one can expect from others (Stoetzel, 1963). For example, as a member of the project, the subject is expected (role) to work for the project the amount of person-month agreed and follow the manager's instructions; conversely (status) they can expect the project manager to provide them usable instructions, adequate working conditions, and appropriate and polite feed-back.

But what if the various social contracts (with the Department, the Lab, with colleagues etc.) imply more than what one can actually do? And how do they receive a demand that is conflicting with their current role, e.g. when the department asks them to urgently do something, while they are fully occupied to deliver a task for the Lab? The problem would normally be solved by doing what the department wants but hiding that unfaithfulness from the Lab. But in the case of the LDC, where everything is recorded, that is apparently impossible.

An empirical issue is the extent to which a project manager and team member face a form of CO and a possible invasion of their work privacy and personal identity as responsible players of their role. The project manager, and ultimately the vertical manager, are responsible, respectively for the completion of deliverables and the management of human resources in the long term. Project managers faced with recalcitrant co-workers can encounter considerable frustration in moving a team to the completion of a deliverable and thereby may experience CO and a heavy after-hours work schedule.

The LDC setting is unusual because aspects of CO are often linked to the nature of the work environment, one committed to "openness" in both the physical ecological sense and vis-a-vis the fact that one's physical and verbal activity are both subject to being recorded at all times and hence available to possible scrutiny by others in the lab and outsiders in the form of a deliverable activity if the work is done in the lab. In other words, personnel must frequently expose their communicative and knowledge

competency to others. The "others," therefore, not only include LDC and possible other EDF personnel, but also visitors (including external consultants) who may remain for days, weeks, and even months.

One consequence of the constant exposure of persons to the observation of others (and not just the special circumstances of the LDC lab) is the fact that a person's choice of strategies for implementing various interpersonal and cognitive "circumstances," depends on the way a given meeting or task environment evolves. These strategies or cognitive attractors framed by the situation, therefore, are invariably linked to the notion of CO because of the kinds of annotations that may or may not be available over the course of pursuing a meeting or task. For example, the documents used in the course of a meeting may reveal that this specific member of the team did not do his job, and that is why such and such deliverable is not ready as planned. The presence of such recorded traces makes the situation more complicated to process for all participants, since in their absence the problem would simply not be so visible, and the faulty participant could likely get away with it and expect that under time pressure the problem will be solved by him or others, and finally not discussed since the problem was finally solved.

In practice, in the real world, many problems are not solved frontally but rather simply overlooked (with a lower quality as a result), or turned around, because solving problems often, involves a social cost (argument, blame, sanction etc.) that in periods of overload everyone prefers to avoid, as there are not enough time and emotional resources to engage in these fights. All these things that "go under the carpet" and stay there, suddenly are forced into the open and call for resolution when the information is publicly displayed.

This situation, interestingly, reveals an unexpected functions of privacy, which is avoiding making visible contradictions that would be costly to resolve. Even more interestingly, it turns out that while the information hidden by privacy may actually be known to the stakeholders. The fact it is not *public* enables pretending that the fact does not exist. So, the manager may very well know that there is slack, that such person is doing "perruque" (that is using company equipment for personal projects)a, but for various reasons prefers to ignore it. To take an example outside of the office, one may know that their partner is cheating on them, or secretly entertaining some silly hobby, but consider that raising the issue openly may not be a good idea, because no good solution is available.

The constant exposure of one's different communicative and knowledge competency means that aspects of the privacy of one's thoughts may be revealed by virtue of the fact that during "heated" or emotionally charged discourse may occur. There may also be a concern with revealing aspects of interpersonal identity and beliefs and opinions to persons who are not considered to be part of their strong personal ties or networks, especially if "permanent" consultants and long-term and short-term visitors are present. The presence of outsiders such the s latter makes the "open" environment more stressful. While if there were only team members aware of the issue that appears in full light, that could stay a family secret; but the presence of outsiders forces the acknowledgement of what has been disclosed.

So, the existence of an "open" privacy environment in the work setting (the case of the LDC) can exacerbate the CO that can occur and compromise one's skill in the implementation of a strategy when confronting interaction in the presence of outsiders.

In contrast, the medical setting is never as "open" because doctor-patient interaction occurs in a private room, yet the medical coordinator meets with patients in a space that is attached (but open) to the corridor along which the physicians have their offices. The coordinator's computer and telephone can be seen and heard by anyone passing by or who pauses near her workstation. There are also documents on the coordinator's desk that are confidential. The general assumption is that inasmuch as the corridor is part of a restricted space (it is necessary to pass through a door controlled by one or more of the secretarial personnel) and hence not a serious security problem since only other patients are likely to be admitted. The coordinator experiences CO during the morning hours and in the early afternoon, but can have periods of little or no contact with patients and physicians around 3:00 p.m. She must use such time periods to catch up on the enormous amount of paperwork that is always part of her work. The coordinator is faced with many types of cognitive attractors because of having to use different speech vernaculars and quickly use various types of artifacts.

The relationship between cognitive attractors and privacy, while not self-evident; poses the following question: to what extent are local conditions of variable privacy linked to the choice of attractors (the tasks, the speech acts and accompanying prosody, bodily movements and the way a task is chosen)? The choice of which task to pursue (one or more can come to mind or be thrust upon personnel at a given moment) means bringing a frame of reference into existence (Kahneman & Miller, 1986) that will enable a person

to orient his or her current thoughts to the demands or affordances of their auditory, visual and physical ecologies.

Consider the following conceptual and empirical issues: We can conceive of the notion of cognitive attractors -the behaviour into which one is channelled by the situation and their own propensions to act (Lahlou, 2000)- as simultaneously a question of privacy and CO because privacy can mean controlling information and one's presentation of self to others, and personal informational resources that can be both implicit (not subject to conscious control) and explicit (under normal conditions viewed as under conscious control). In both the LDC and the medical setting, confidentiality waivers must be signed by patients but implementing such conditions is never self-evident. In the LDC, one is required to sign waivers, but these must be interpreted by each individual and the social networks in which they "live" in terms of their own identity concerns and presentation of self. In other words, the on-line demands of choosing and pursing different tasks, sometimes in parallel, is inherently a concern with privacy issues because deciding the choice of a task invariably requires taking risks vis-à-vis what should or can be revealed about one's actions (communicative, interpersonal, and knowledge competencies) and their consequences for one's job security or career, personal identity, and interpersonal relations.

In the LDC waiver form, the term "agreement" is viewed as self-evident in the sense that statements that are contained therein are part of a kind of «contract» between LDC and a "visitor".

The term "confidential information" (Article 1 of the waiver form) includes a sweeping statement about what is being waived. This includes «all technical or commercial information or information of any other type relating to the Laboratory of Cognitive Design (LDC) projects and experimental building K1, including the technologies used therein and its fitting out, communicated by EDF to the VISITOR in whatever form, and whether directly or indirectly, through the handing over of documents or through the supplying of products, samples, equipment, materials or orally.»

We need to elaborate on this complex theoretical and empirical issue of cognitive attractors, privacy, and CO. For example, how is the notion of personal identity linked to the projection of self or the assessment of one's presentation of self, in terms of its use by (Goffman, 1959)? To what extent are we able to study the way persons are able to avoid revealing an "inner" sense of "self" or personal identity in different settings?

The latter issue remains a challenging empirical problem that is a problematic aspect of everyday social interaction and the ability of actors to manage their interpersonal emotions and relationships, especially under conditions in which both subtle and more obvious concerns with privacy and CO are involved relentlessly. The notion of privacy (reviewed next) will be extended to include the fact that elements of privacy are initially highly personal and interpersonal. The latter are affected by the way organizational or bureaucratic confidentiality is framed and implemented by individuals and the distributed cognitive activities of a group or larger collectivity.

Privacy is ubiquitous in bureaucratic offices, especially in public, political, industrial, and military settings. In recent years it has become especially pervasive because of the use of the internet and the burgeoning field of intellectual property. The unusual case of technology and privacy at the LDC consists of a kind of "fishbowl" effect in place because of the design and organization of the laboratory. Although individual privacy is assumed to be nonexistent inside the LDC, the implementation of the policy requires empirical clarification. For example, an unknown number of telephone calls seem to be of a personal nature, and this is based on the way some calls are of long duration and involve subdued voice levels and endearing language. During laboratory meetings, many lab personnel appear to be working on tasks that are not associated with the meeting. This other work is done by using laptop computers, which everyone uses. The cognitive demand of the workplace interacts continually with the social expectations associated with routine social interaction and polite talk among colleagues. Lab discussions often appear to be tense, and they sometimes come close to being shouting matches.

In the remaining sections of the paper, we discuss some general theoretical and methodological issues in order to create a frame of reference that includes both basic and practical concerns associated with technology and privacy. For example, the intellectual property rights and safeguards used or that are lacking when there are collaborative research projects, and the kinds of confidentiality concerns faced by both research personnel and subjects. We will mention, but not elaborate on, the many forms of privacy safeguards that should but do not exist for individuals and groups in which their use of credit cards or their individual or company or governmental agency's computer files are invaded by "hackers".

6. Variation in what is viewed as privacy concerns

Property rights in industrial or commercial settings often revolve around the secrecy surrounding the development and production of a new soap, pharmaceutical product, the design of a new car, and ideas about new products that may be pursued at a future time. The fact that ideas, their development, and possible subsequent products can mean considerable financial gain or loss for particular companies has long made industrial secrets a major concern of the world of industry and business. Individuals in private firms seldom if ever have the right to patents in their name. In university settings, intellectual property rights are a constant problem because of new inventions or discoveries that can seriously affect a university's finances. A person's academic career can be seriously affected by having authorship on an "important" paper and the order in which one's name appears.

The term "privacy" is polysemic; its meaning, as noted earlier, can vary because of relationships among participants, the nature of their interaction, and their understanding of the consequences of any waiver to privacy they may have signed. When asked to sign a statement giving an organization (hospital, dental office) or research group permission to use recorded or written materials or laboratory tests involving the signer mental and physical health and demographic information about such persons, many feel indifferent while other feel intimidated by the request because it is seldom possible to know what rights are being forfeited or waived. Signing, therefore, can be an awkward moment or simply a bureaucratic nuisance for different participants. Patients, for example, worried about their health status, seldom object to signing waivers that are not read by them and for which they are unclear as to the consequences of what they have done. In the case of asking patients to allow information about them to be used in a research project, they want to be diagnosed and treated and if the physician indicates her or his support for the project, are likely to sign with a minimal amount of explanation. The issue of trust is the core of such arrangements, and this illusive but essential notion is at the heart of all agreements to waive one's privacy.

A different sense of privacy can come from having your automobile stolen or having your house robbed by unknown persons and especially if the victim is present at the time. These latter events are a highly personal form of personal violations of privacy and perhaps we might view the extreme case as rape. The sense of being personally

"violated" can be quite traumatic and can be similar to being part of or witnessing a terrible accident (and fatal for some of those involved).

The advent and widespread use of the electronic transfer of funds and use of credit cards have resulted in what in American English is often called "stolen identity" that is, can mean having someone appropriating your credit card number, bank account numbers, one's social security number, and then making full use of these stolen sources of information (often as quickly as possible after an initial, subdued use in order not to arouse suspicion). In the United States (U.S.), "stolen identities" can be, at times, difficult to resolve and complicates the victim's life with no end.

Another invasion of privacy is the huge amount of "junk mail" that inundates the regular delivery of mail. The increasing use of the internet to pay electric or gas or water bills and other debts makes it easier for violators of privacy to wreak havoc with one's daily life activities. Computer hackers, therefore, can browse the internet in search of hapless users as well as break into governmental and private security systems and thus compromise an enormous number of people. Note that we do not address the general problem of computer viruses and the enormous damage

In the pages that follow, we will examine a somewhat different type of "intellectual property" and the rights associated with it. Namely, one involving privacy issues associated with being simultaneously an observer in a research project in your place of work and one of the research subjects. One's routine or "normal" behavior or demeanor can be subjected to scrutiny by one's colleagues, as well as persons unknown to some of the participants. In other words, personnel activity may be subjected to a type of examination and use that may not have been self-evident when permission was given at some point in time.

7. Some methodological comments: the LDC as an ethnographic urban setting

The pursuit of "urban" ethnography in densely populated western settings evolved in the twentieth century at a time when privacy issues associated with field research were largely a matter of interpersonal trust. The notion of "trust" remains the essential element of field and laboratory research today despite the sometimes-elaborate

precautions that are established. The relatively brief encounters required for survey research have contributed to it becoming a more routinized procedure after the end of World War II. Problems associated with research in one's native language are seldom examined because such communication is often viewed as self-evident. The circumstances change when one moves to a western country with a version of the same language (e.g. research in English when working in Australia, English-speaking Canada, Great Britain, Ireland, Jamaica, New Zealand, South Africa, and the United States). A parallel example is using versions of Castilian Spanish in Argentina, Bolivia, Chile, Spain, and so on. For example, cultural and language differences can emerge across former British, Spanish, and French colonies. Working in a different country with a distinct (but western) culture and language begins to pose problems that are somewhat similar to research in an exotic cultural setting. One of the present authors had to face nontrivial language problems which both constrained as well as enhanced his ability to assess and make inferences about the social interaction and speech events he witnessed and in which he participated.

When the language of field notes (in all field research) is other than the language use observed, there are various comprehension issues associated with oral and written communication in the foreign language. There can be routine loss of information when the researcher translates the foreign language into field notes in her or his native tongue. The literacy of the ethnographer becomes a key variable for what is observed and recorded as "data". The observer may not readily capture subtle cultural nuances embedded in gestures, facial expressions, and prosody, yet because of the rapidity of the speech events, this observer is forced to rely on other sources of information in order to assess the events in which he "participated" and observed. The observer constantly experiences "cognitive overload" (CO) and the quality of her or his notes will reflect this problem. This translation problem is difficult to address because it is seldom a topic of research by members of the same research team nor reported to readers of subsequent reports and publications.

It is difficult to keep track of the interplay between the observer's CO and the fact that the very environment that is being studied constitutes an obstacle to the observer's ability to process and record observations that are independent of an electronic recording device. The observer tends to attribute continuity to her or his understanding of the local setting and its participants in the same sense that one tends to view a recording and transcript as a faithful record of events described therein despite the fact that there are

many missing elements of information when the recording lacks independent observation of the setting.

The extensive use of audio and/or audiovisual materials creates burdensome problems of storage and retrieval and the cataloguing that is always inherent in all research. Creating an archive or databank is intimately associated with what constitutes privacy. Storage and retrieval problems are part of how materials are used and, thereby, what will be called "private". For example, at the LDC, the audio part of an audio or video tape is sent to a sub-contractor whose personnel transcribe the tapes. The sub-contractor must follow the same secrecy rules as those that are in place at EDF. The choice of what is to be transcribed sets in motion the exposure of possibly confidential material because of the activity associated with its transcription and viewing in the case of video tapes.

Privacy is tied closely to use by unknown persons, depending on the way unedited material is accessible to different personnel and the goals of their research. The "open" future horizon of the recorded materials, therefore, means that changes in personnel because of normal turnovers and organizational changes (common in organizations including LDC) can affect what constitutes private data and their access. Institutional memory is a short-hand expression for complex bureaucratic tensions among personnel and the extent to which they create a distributed cognitive system (Roberts, 1964) or dynamic community for dealing with privacy in a context of overlapping rules, regulations, and informal daily practices whose processes and content requires direct observation of daily life office practices.

Participants of recorded sessions may represent different sections within the larger organization and what they say may not always be compatible with the views of their colleagues and these colleagues may never have occasion to review such remarks before their use in a report or research document. The extent to which the voluminous material gathered at LDC (or any organization that routinely records their activities or the activities of others such as the United Nations, all intelligence agencies, airport controllers, to mention a few) becomes a huge logistic problem. Few organizations are able to cope with their organizational overload and the amount of personnel needed to address simply organizing information and attending to its significance. This leads to the more general problem of how do we as participants and as research analysts assign significance to what is said, especially spontaneously.

We often inadvertently express information related to personal privacy that may preoccupy participants after the fact, hence the concerted effort by workers in the same office or subdivision to be "on their guard" during meetings with long-time colleagues. What is viewed as "private" to participants can vary with their retrospective perception that they have controlled their expressions adequately. The extent to which participants of recorded interaction become preoccupied with their personal "transgression" is also unknown, but at the time of interaction, participants by-and-large tend to ignore them. When shown fragments of transcripts of their interviews with patients, physicians often expressed some concern about their discourse and its content despite assurances of anonymity (A. V. Cicourel, 1974, 1992).

Online communication and its bodily and facial expressions, and prosody invariably involve spontaneity, especially if they are carried out in the presence of familiar others with whom daily interaction is routine. Under such conditions, the way a local context evolves is contingent on past exchanges, how well the participants know each other, and the nature of the task environment. The discourse style employed by different participants and the extent to which they might reveal information or views that otherwise would not be expressed publicly is an unknown empirical issue. We seldom study individual differences in discourse styles under different interactional circumstances and most of our knowledge of discourse processes is based on fragments of interaction by persons whose background and familiarity with other participants is obscure.

8. Final comments by the second author

The draft ends abruptly here because the paper was never finished.

In the version that I share here, most of the text was written by Aaron, in his inimitable style. The draft I used contained in several instances the LEFT OFF mark that Aaron usually wrote on his manuscripts at the end of a writing session, to indicate where he should restart.

I hesitated between trying to finish the paper, which would have produced something more coherent, but that would have been an extremely difficult exercise, as I am not sure that Aaron would have agreed with all my edits. Furthermore, there would have been an interruption of over a decade, and the way we both thought about that material

had changed. Finally I did not have access any more to the original empirical material, or would have needed to ask permission from some participants, because one of the core transcriptions is about a heated exchange during one meeting.

I chose to do minimal edits, skipping some parts on identity theft, reordering some sections and adding some clarifications in various places. I think the interest of this paper is to show some of the work in progress as Aaron was building a paper. We can see a series of insights coming from observations and attempts to draw general conclusions from specific observations. What I find especially interesting, compared to the finished versions of Aaron's papers, is that this text lacks extracts or description of the empirical material (verbatim, etc.), apart from those I just added for clarification. This even though we had profusion of such material, since rarely in history a setting had been so documented. We had in the Lab two huge secure armored cabinets full of classified and indexed digital records, miles of transcription etc. This suggests that the first work of conceptualization was done using Aaron's memory rather than step by step analysis using formal techniques such as content analysis.

A lot of the ideas' maturation happened in conversations. Aaron was assembling and comparing a series of elements that were present in his mind at the time he wrote (I think can connect the rather odd section about identity theft to a personal incident that struck Aaron himself). The sections about cognitive attractors and cognitive overload are connected to work that we did together (and with David Kirsh) at UCSD. Cognitive overload was at the core of my own research at the time, and that became implicitly part of the intellectual context of our conversations, but in fact there was no natural reason to bring that in focus on a research on privacy, which was the purpose of Aaron's presence in the lab. But Aaron managed to merge these two aspects and to find a deep structure that connected them, this idea of uncontrolled intrusion in one's current activity by something else, an invasion that creates a mess and a feeling of being invaded.

Aaron once wrote that paper that I found especially remarkable regarding deep insight connecting two apparently different phenomena (A. V. Cicourel, 2013). There he compares the development of the child gradually expanding their competences by being scaffolded, in their proximal zone of development, by their caregiver, to the gradual decline of aging persons who gradually lose their cognitive capacities, but whose interactions with the world is scaffolded by their partner, as if there was, there too, a proximal zone of activity where one can, perform with help even if they could not

perform adequately alone, can perform with scaffolding. Again, we can see Aaron's capacity to connect phenomena that are very different (here phenomena that would rarely be observed in the same context) and to discover a deep mechanism behind. In this case, there is from the subject's perspective, I assume, a similar experience of being hampered to perform what one wants, and simultaneously the relief of being scaffolded by someone you trust.

It is interesting to note how Aaron paid attention to how the global situation was constructed (here, the arrangement of contracts, the hierarchical relations, the structure of the organization), to the whole system of actors and not just the phenomenon object of study. He was getting an in-depth understanding of the field. To get close to the perspective of an insider, he was trying to understand the motives and the constraints of an insider, and what type of relations, rules, and expectations were binding the insiders. This provided him with an insight into the strategic issues from the participants' perspective. I would call this strategic sympathy, the understanding of the strategies from the actor's perspective.

Note this approach as an insider, which requires a deep familiarity with the setting, creating bonds with the local participants, is not what is usually advised to qualitative researchers. Instead, they are recommended to keep a critical distance. But the later tends to keep them away from understanding; and often simply keeps them away from getting the basic information every insider knows, because they are not part of the game and therefore not trusted to be given the "secret" information. There is here a great divide between those who want to keep their distance in fear of "turning native", and those who decide to become a member of the community, even as a guest, to get access to insider knowledge. This is well described in Favret-Saada's research on sorcery, where it is only once the researcher is "taken" in the process that she gets access to the knowledge necessary to understand (Favret-Saada, 1977). The work of Ed Hutchins, a colleague of Aaron, benefits from a similar insider knowledge of the work of his observees, sailors or jet pilots (E. L. Hutchins, 1995, 1995), as he is himself a navigator and has a license to pilot big airliners (personal communication).

Everywhere Aaron did field work, he became, as I understand, part of the local community, from participating in police patrols (A. V. Cicourel, 1968) to contributing to the medical teams with his research. I think that for him that was an essential criterion of ecological validity and to get good quality data. Remember that Aaron would always ask in research discussions: "what is your empirical evidence?"

As he wrote ": "Ecological validity appears to be high when we can identify locally created and sanctioned participant frameworks of agency and authority."(A. V. Cicourel, 2007). In one of his first studies, where he was in charge of setting up a questionnaire survey, his insistence to use qualitative data to inform the questions directly in participant observation almost cost him his job. But he continued to do participant observation: "I devoted considerable time gaining daily access to a 'Senior Citizens Club'. I visited the club regularly, eating lunch with members, attending parties and dancing with my consultants. I also volunteered to organize a men's group for outings on Saturdays. The contacts acquired enabled me to interview individuals in their homes under informal conditions." (A. V. Cicourel, 2007)

Aaron had an amazing ability to blend in and become a welcome guest, or even a full member, of the communities he studied, whatever culture or social class. That is probably because his genuine interest in the community, and his natural tendency to be helpful, made the locals understand his desire to participate was sincere and not instrumental.

But how did he manage to be at the same time an insider and an outsider? I think that because of his keeping constant methodological attention in the background. This is visible in several sections of the draft above: the one on language, the notes on the status of the consultant and their relation to the project manager, the observer's cognitive overload, etc. This reflexivity helps to remain an outsider, because it reminds of the observation process which is research. And in our discussions, Aaron would usually, at some point, include methodological comments and advice.

Being able to see things and think strategically like an insider gave Aaron somewhat of an emic perspective. Remaining an outsider enabled him to translate his findings into an etic discourse. Considering the heated discussion on the emic/etic difference (Haskell et al., 1992; Headland, 1990), this is an amazing performance.

Nevertheless, being an outsider, however smart, one misses the experience of the past of the community before one's arrival, and inevitably gives a bias of ignorance. For example, in a case we both studied in parallel, the key to the dispute was an event that had happened in the past, at the very beginning of the LDC project, and that Aaron was not aware of because this had been kept a taboo topic. Conversely, being an insider comes with a social position, and forbids you to see, or accept, some facts, so comes with positional bias. Typically, I would tend to underestimate the tension and the

problems in the team that I was managing, because many of them were expressed in my absence or deliberately hidden from me, while Aaron would hear of them. In our discussions with Aaron, we finally agreed that the best was to work as a pair insider + outsider, so that these different perspectives tended to compensate each other's biases (A. V. Cicourel & Lahlou, 2005).

Nevertheless, some exceptional scientists manage to be both insider and outsider, as Aaron did. Why? My hunch is that Aaron had an extraordinary capacity of empathy and sympathy with his fellow humans, and a gift for projecting himself into the perspective of others, with benevolence but while keeping his critical and analytical skills.

It is this same extraordinary approach of human relations that made him also such a wonderful friend and mentor, whom we all sorely miss.

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