

**Broken *Premises*: Towards an
Intercultural Understanding of
Bilateral Co-operation in ICT for
Education in Burundi**

by

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To my beloved sister, Linda

Declaration of Authorship

I, Paolo Brunello, confirm that the work presented in this thesis is my own. Where information has been derived from other sources, I confirm this has been indicated in the thesis.

Date: 07.02.2015

Signed:

A handwritten signature in black ink, appearing to read 'Paolo Brunello', written in a cursive style.

Abstract

Despite their widely acknowledged potential, ICT for Education projects often fail to deliver on their promises. This thesis argues that such promises are based on a shared rhetoric, the *technological imperative*, that veils mismatching premises. It is an ethnographic case study concerning the introduction and use of computer laboratories in eight secondary vocational schools, within a five-year Belgo-Burundian cooperation project (2005-2010).

The epistemological approach is socio-constructionist. The theoretical perspective is *ecological*: it tackles both the relationship between stakeholders and between them and their habitat — physical and socio-cultural — especially at the school level (*micro*) and at the national level (*meso*), both conceptualised as *ecosystems*. This contrasts the dominant objectivist epistemology and technocentric approach pervading ICT for Development initiatives.

Data were co-generated through participant observation, ethnographic snapshots, interviews leveraging metaphorical thinking, and qualitative social network analysis (*Net-Map*). A Critical Incident Analysis (CIA) framework was developed to unearth the conflicting premises causing the incident and to spell out their consequences. This was extended in a second-order analysis developing the SBIZO (*Stop, Breathe In, Zoom Out*) interpretive framework, integrating the empirical work with Attribution Theory and studies of trust. It distinguishes between a *dispositional route* perpetuating the asymmetric co-dependency between *developers* and *developees*, and a *situational route* favouring intercultural understanding and trust by encompassing history, culture and the *developers-developees* relationship itself in its scope. It also suggests strategies to preserve or restore trust, such as pausing, meta-communicating, apologising and risk sharing.

This research shows that while Europeans intended computer labs only as a means to *do something*, Burundians privileged their value as a means to *become someone* — coherently with their distinct cultural matrices: *Ubuntu* and *Relatio*, both pivoted on *interconnectedness*. Ultimately, this research calls for greater consideration for the context and for enhanced intercultural communication awareness in ICTs for Development and Education initiatives.

Résumé

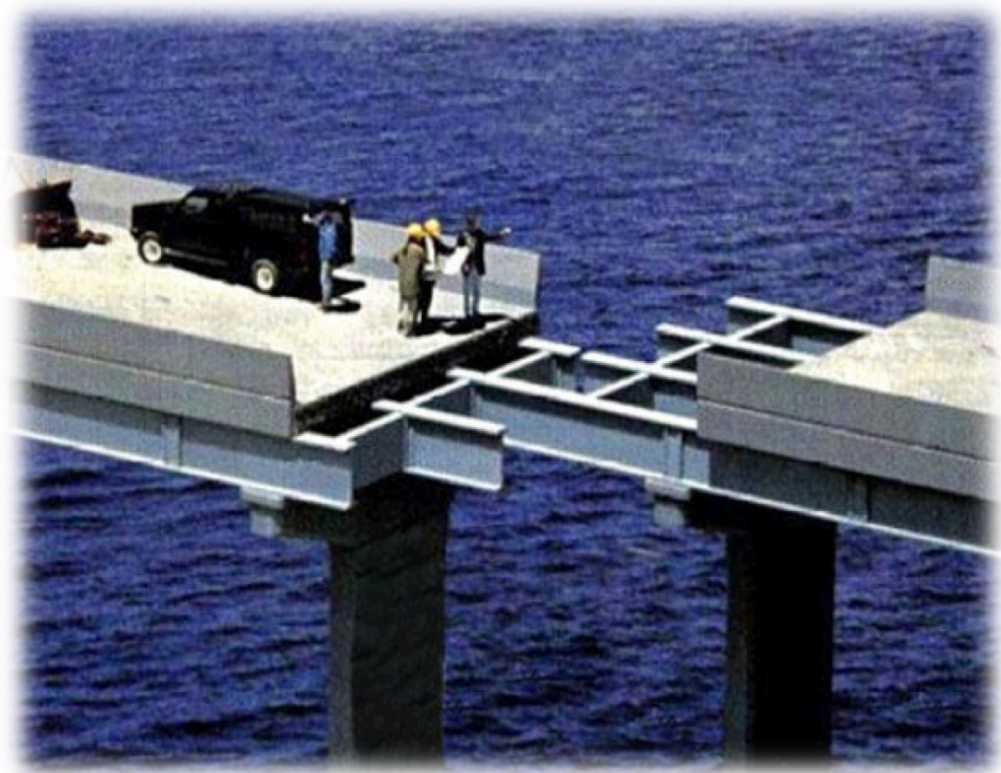
Malgré leur potentiel soit amplement reconnu, les projets d'utilisation des TIC pour l'éducation souvent faillent à maintenir leur promesses. Cette thèse argumente que telles promesses sont basées sur un rhétorique partagée, *l'impératif technologique*, qui voile des prémisses décalées. Un étude de cas ethnographique, cet ouvrage traite l'introduction et l'utilisation des salles multimédia dans huit écoles secondaires techniques et professionnelles, au sein d'un projet de coopération Belgo-Burundais de cinq ans (2005-2010).

L'approche épistémologique est socio-constructionniste. La perspective théorique est écologique : elle adresse les relations entre parties prenantes ainsi que celles entre ces-dernières et leur habitat, physique et socio-culturel, surtout au niveau des écoles (*micro*) et au niveau national (*meso*) — les deux conçus comme *écosystèmes*. Ceci contraste l'épistémologie objectiviste et l'approche technocentrique qui prédomine les initiatives des TIC pour le développement.

Les données ont été co-générées par l'observation participante, des instantanées ethnographiques (*ethnographic snapshots*), des interviews tirant parti de la pensée métaphorique, et par l'analyse de réseau social (*Social Network Analysis*) qualitative (*Net-Map*). Un cadre pour l'analyse des incidents critiques (CIA) a été développé afin de déterrer les prémisses conflictuelles causant l'incident et préciser leur conséquences. Cela a été étendu par une analyse de second niveau, en développant un cadre interprétatif appelé SBIZO (*Stop, Breathe In, Zoom Out*), en intégrant le travail empirique avec la Théorie de l'Attribution et les études sur la confiance. Il distingue entre une *voie tempéramentale* qui perpétue la co-dépendance asymétrique entre *développeurs* et *développants*, et une *voie situationnelle* favorisant l'entente interculturelle et la confiance par l'inclusion de l'histoire, de la culture et de la relation *développeurs-développants* dans son envergure. Il suggère aussi des stratégies pour préserver et restaurer la confiance, telles que marquer une pause de réflexion, meta-communiquer, faire ses excuses et partager le risque.

Cette recherche montre que alors que les Européens entendaient les salles multimédia seulement en tant que moyen pour *faire quelque chose*, les Burundais privilégiaient leur valeur comme moyen pour *devenir quelqu'un*. Ceci est cohérent avec leur matrices culturelles: *Ubuntu* et *Relatio*, les deux ancrées sur *l'interconnexion entre acteurs*. Finalement, cette recherche appelle à mieux considérer le contexte et à affiner la maîtrise de la communication interculturelle dans les initiatives des TIC pour le développement.

Visual Abstract

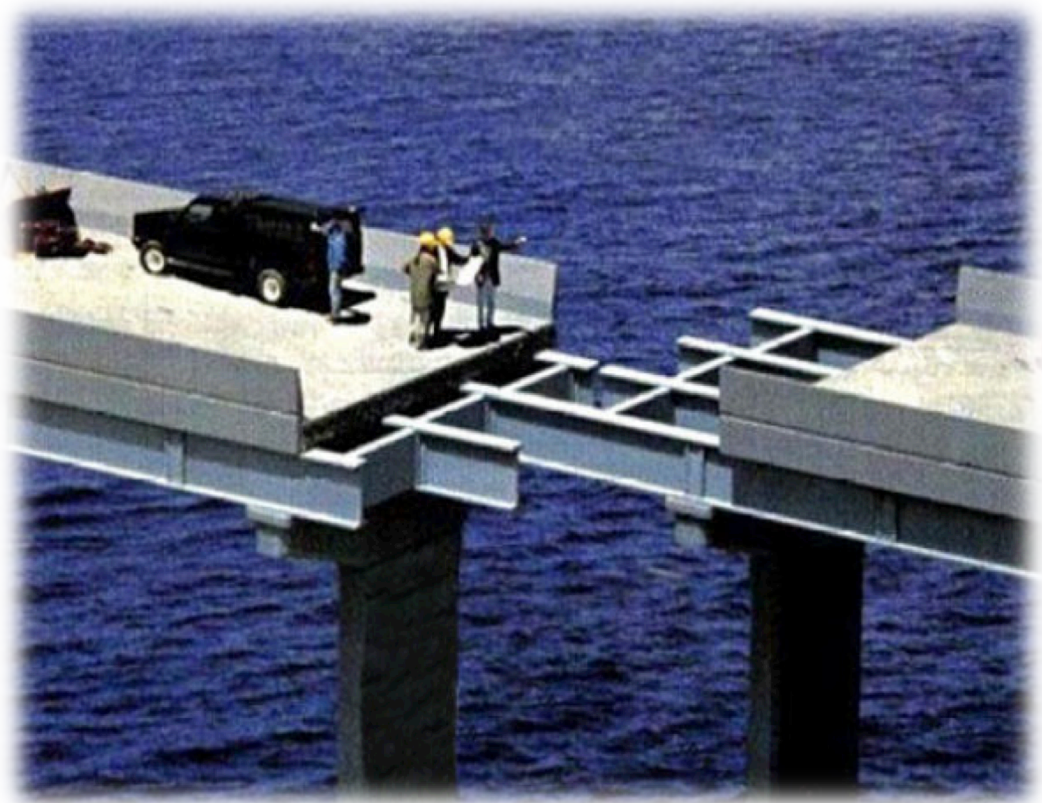


Source: <http://constructionpics.wordpress.com/>

If this dissertation were allowed to have a pictorial cover, it would be this picture, as it represents metaphorically the core issues researched, namely:

1. The risks inherent in relying too much on blueprints and planning, losing sight of the actual context and its evolution, day by day.
2. The difficulty of building a bridge between the universes of coherence inhabited by the actors on the two sides of a bilateral cooperation project, given their different culture, despite their physical proximity.
3. The gap between the great potential of technology to connect across large distances, despite the challenges posed by the local environment, vis-à-vis its level of mastery by human actors.
4. The slightest misalignment in the premises at the origin of a bilateral project may manifest itself as a critical incident only much later in the process, causing great dismay, frustration and disappointment which are likely to result in interpersonal and inter-institutional conflict.

Résumé Visuel



Source: <http://constructionpics.wordpress.com/>

Si cette thèse pouvait avoir une image en couverture, ce serait celle ci-dessus, car elle représente métaphoriquement les thèmes centraux de cette recherche, notamment :

1. Les risques liés à s'en rapporter trop à la planification et aux ozalids, en perdant de vue le contexte actuel et son évolution, au jour le jour.
2. La difficulté de construire un pont entre les universes de cohérence habités par les acteurs de deux cotés d'un projet de coopération bilatérale, en vue de leur différentes cultures, nonobstant leur proximité physique.
3. Le décalage entre l'énorme potentiel de la technologie de connecter par-delà de grandes distances, malgré les défis posés par l'environnement local, vis-à-vis de la maîtrise possédée par les acteurs humains impliqués.
4. Le moindre décalage dans les prémisses à l'origine d'un projet bilatéral peut se manifester comme un incident critique bien avant dans le processus, en causant consternation, frustration et déception, qui peuvent se traduire en conflits interpersonnels et inter-institutionnels.

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Abbreviations

AESTP	Appui à l'Enseignement Secondaire Technique et Professionnel
APEFE	Association pour la Promotion de l'Enseignement et de la Formation à l'Etranger.
BEET	Bureau d'Etudes de l'Enseignement Technique
BRICS	Brasil, Russia, India, China and South Africa
BTC	Belgian Technical Cooperation
CDMA	Code Division Multiple Access
CNDD-FDD	Comité National pour la Défense de la Démocratie
CSO	Civil Society Organisation
CTB	Coopération Technique Belge
DAC	Development Assistance Committee
DELCO	Délégué de Cogestion
DFID	Department for International Development
DI	Directeur d'Intervention
DLP	Digital Light Processing
ECOSOC	United Nations Economic and Social Council
EDGE	Enhanced Data rates for GSM Evolution
FOSS	Free and Open Source Software
GPRS	General Packet Radio Service
HDI	Human Development Index
ICTs	Information and Communication Technologies
IDI	ICTs Development Index
IMF	International Monetary Fund
ITU	International Telecommunications Union
MEdu	Ministère de l'Education National du Burundi (Burundian

	Ministry of Education)
MoU	Memorandum of Understanding
NEPAD	New Partnership for Africa's Development
NGO	Non-Governmental Organisation
NRI	Network Readiness Index
OECD	Organisation for Economic Cooperation and Development
OLPC	One Laptop Per Child
PEIBU	Promotion de l'Enseignement de l'Informatique au Burundi
RAID	Redundant Array of Independent Disks
SMCL	Structure Mixte de Concertation Locale (AESTP Supervisory Committee)
SNA	Social Network Analysis
UGP	Unité de Gestion de Projet (Project Management Unit)
UNDP	United Nations Development Program
UPS	Uninterrupted Power System

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¹ www.apefe.org

² www.btctb.org

³ www.zenokarlschindler-foundation.ch

⁴ www.usi.ch

⁵ www.volint.it

⁶ www.cisvto.org

⁷ www.adespes.org

⁸ www.avsi.org

⁹ www.stfoundation.org

¹⁰ www.newmine.org

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P. B., Pune, India, 5th February 2015 (Grazie noneti!)

¹¹ www.ict4dc.org

1 Introduction

1.1 Research origins

This research was born in Burundi, after I had worked there for four years (2004-2008) for non-profit organisations in the domain of ICT for Education (ICT4E). Subsequently, I was involved in a five-year bilateral cooperation project (2005-2010), run by the Belgian Technical Cooperation (CTB) agency in cooperation with APEFE, the Association for the Promotion of Education and Training Abroad⁹. My responsibility was to conceive and implement a project (henceforth called the Computer Labs sub-project) aimed at establishing computer laboratories in ten public vocational secondary schools, and to train local teachers to manage and maintain them. This project constitutes the core of my research, which is also intended to provide insights about this project that may be relevant for other people dealing with such initiatives elsewhere in the world, which were grouped into two categories:

1. Academics from different disciplines: development studies, information systems, organisational studies, education, and computing.
2. Development practitioners, both aid providers (particularly the staff of the bilateral cooperation agency I was working for) and recipients/beneficiaries (pupils, teachers, principals, and officers of ministries of education). NGOs, consultancy firms and education policy-makers are also included in this group.

The research explores the beliefs held by different stakeholders concerning their respective roles in the cooperation endeavour and the introduction and use of computer laboratories in ten Burundian vocational schools. This study is quite distinctive in the ICT for Education research stream (Farrell & Isaacs, 2007;

⁹ Association pour la Promotion de l'Education et de la Formation à l'Etranger (www.apefe.org).

Hosman, 2010; Jones, 2004; Law & Pelgrum, 2008; Selinger, 2009; Wagner *et al.*, 2005), in that it does not target the use of ICT *within* the classroom, nor its technological facets, nor the relative policy making process at governmental level. Rather, it started by asking a broad yet radical question: Why should Burundian teachers bother adopting ICTs?

In other words: “Are *we*, the *developers*, not merely imposing a new kind of *chalk* — the computer lab — which is electric, costly, fragile, cumbersome — just because *we* think it is better?”. These questions challenged squarely the dominant rhetoric: the *technological imperative*. Drawing on (Bates, 2000; 2012; Ellul, 1954; Feenberg, 2009; Leckie & Buschman, 2009), I define the technological imperative as the combination of three tenets:

1. *ICTs are fundamentally good and lead to progress;*
2. *ICTs are just a means, thus culturally neutral and universally applicable;*
3. *ICTs are indispensable, especially in education, otherwise one will be excluded from modernity and lose credibility.*

The analysis of this interrelationship between such powerful rhetoric and the implicit assumptions of ICTs is significant for researchers and practitioners alike. Indeed, project stakeholders more often than not are from differing cultural backgrounds and therefore inhabit very different ‘worlds’, despite sharing the same physical environment (Avgerou, 2000; Avgerou & Walsham, 2001; Krauss, 2012, 2013; Rogers & Williams, 2006; Walsham & Sahay, 1999; Westrup *et al.*, 2003). The recurrent hiccups, misunderstanding and breakdowns occurring during the project implementation led me to reorient my inquiry to investigate the numerous pitfalls of intercultural dealings in the context of a technology-intensive bilateral project, paying careful attention to the longstanding relationship between Belgian *developers* as the former colonisers, and Burundian *developees*, as ex-colonised. The use of such terminology is deliberately controversial and will be explained in Section 7.3. Thus my research has treated the organisational challenges of the Computer Labs sub-project as a ‘sonar’, in order to detect and distinguish the different cultural matrices underlying the reasoning of both *developers* and *developees*.

Inspired by an ethno-methodological approach (Coulon, 1987; Garfinkel, 1967), it leveraged *critical incidents* defined as *puzzling mismatches of expectations that have significant consequences for the relationships between stakeholders and ultimately,*

for the project outcomes. Through an analytical framework developed through engagement with the empirical evidence, I interpreted such incidents as manifestations of divergent implicit assumptions, which are otherwise camouflaged by the overarching rhetoric of the technological imperative. This analysis involved the development of a broader interpretive framework, named SBIZO (Stop, Breathe In, Zoom Out — see Figure 7.25), which is both a theoretical and pragmatic tool for development stakeholders to attain a better intercultural understanding and reinforce trust, thus possibly reducing the risk of project failures (Dodson *et al.*, 2012; Heeks, 2002), ultimately improving aid effectiveness (Booth, 2008; Easterly, 2007; Glennie, 2011; Riddell, 2007; Sachs, 2005).

1.2 Situating the research in the current ICT4D discourse

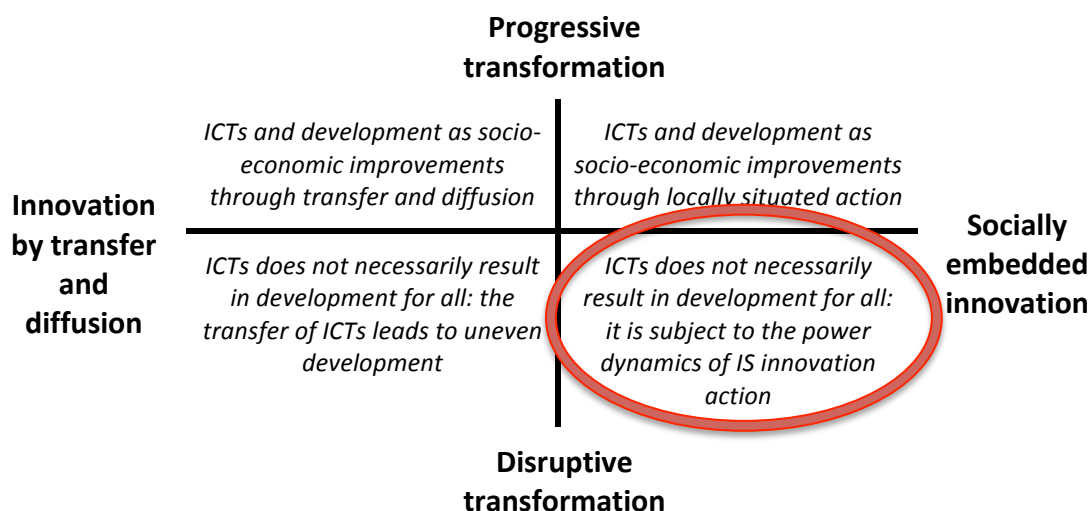
Avgerou (2010, p. 1) identifies two perspectives on the nature of ICTs innovation in so-called developing countries — transfer and diffusion, and socially embedded action — and two perspectives on the development transformation towards which ICTs is understood to contribute — progressive transformation and disruptive transformation (

Figure 1.1). According to this theoretical mapping, my research sits in the lower right quadrant. Rooted in a socio-constructionist epistemology (Berger & Luckmann, 1966; Crotty, 1998; Watzlawick, 2006), it postulates the inextricability of technological artefacts from the tangle of meanings human actors attribute to them (social embeddedness). It stresses the importance of the context in any ICT4D venture (Avgerou & Walsham, 2001; Krauss, 2013, p. 201; Walsham & Sahay, 1999) and focuses on the complexities of intercultural communication at the interpersonal level (Archer, 1986; Holliday *et al.*, 2004; Pedersen, 1995; Samovar *et al.*, 2011b; Sclavi, 2003; Spitzberg, 2011) linking them back to classic interactionist theories from sociology (Blumer, 1969; Coulon, 1987; Garfinkel, 1967; Goffman, 1959, 1974) and social psychology (Heider, 1958; Hewstone, 1989; Ross, 1977; Rotter, 1954).

On the vertical axis, my research implicitly questions the ‘Western’ concept and practice of Development on the grounds of ethnocentrism (Escobar, 1995; Nederveen Pieterse, 2009; Sachs, 1992; Sirolli, 1999) paying specific attention to the narratives around ICTs (Diaz Andrade & Urquhart, 2009, 2012; Thompson, 2004). Throughout the whole text I capitalise the words Development and Aid

to denote their reference to the specific practices and discourses occurring in the international cooperation arena, which are not necessarily coincident with the good-natured connotation the terms originally carry, as I argue henceforth (see Simon, 2007, p. 209, on mal-development).

Figure 1.1. ICTD discursive spaces.



Source: Avgerou (2010, p. 9).

Furthermore, my research explores the aspirational value of ICTs (Appadurai, 2004; Hollow, 2010; Pal, 2008, 2012; Pal *et al.*, 2009) in *thin-tech* countries. I prefer this term to *low-tech* to stress *distribution and availability* as pivotal characteristics. Indeed technology in these countries can often be very high-tech (i.e. WiMax or mobile infrastructures), but its distribution sparse or peppered. In opposition to *thick-tech* countries, *thin-tech* countries are characterised by low ranking on the official indexes produced by the International Telecommunication Union such as the ICTs Development Index (IDI) (ITU, 2013) and the World Economic Forum's Network Readiness Index (NRI) (Bilbao-Osorio *et al.*, 2013). Their exclusivity further enhances their modernity 'glamour'. This is linked back to the wider cultural matrices on both ends of a bilateral cooperation project — especially with regards to power and status ("disruptive transformation" — Long, 2001; Mosse, 2005; Thompson, 2008; Van Stam, 2013a; Van Stam & Van Oortmerssen, 2010). My research combines both academic and practitioner perspectives (Kealey, 2001; Kealey & Protheroe, 1995), showing how an insider's view 'from the trenches' in the form of an ethnographic study can contribute to the larger debates on Aid effectiveness (Booth, 2008, 2011; Easterly, 2007; Riddell, 2007; Sachs, 2005) and ICT4D (Dodson *et al.*, 2012; Heeks, 2002, 2008; Toyama, 2010a; Unwin, 2009), with a

specific attention to ICT4E (Farrell & Isaacs, 2007; Haddad & Draxler, 2002; Law & Pelgrum, 2008; Selinger, 2009; Trucano, 2009).

1.3 Rationale

“All too often, computer laboratories in educational institutions across Africa are underutilized.” (Unwin, 2005b, p. 117)

This thesis is an ethnographic journey. As such, the research questions were gradually narrowed down and refined along the way, until they eventually crystallised around the observation quote above, which is echoed by the bitter puzzlement captured in the following interview excerpt¹⁰ by Firmin, a prominent figure in the *developers’* camp:

Firmin (Assistant Technique APEFE): “Et partout, dans toutes les écoles, on me dit la même chose: «Je veux une deuxième salle multimédia, Kiremba veut une deuxième salle, ils savent déjà où il vont la mettre! (...). Pour quoi faire? Je ne sais pas. A l’ETP Gitega m’ont demandé la même chose et je lui ai dit: «Mais tu n’es pas honteux de me demander une deuxième salle alors qu’il n’y a rien: vous ne savez déjà vous occuper à entretenir une première salle et elle est entièrement vide en permanence, en plus vous demandez une deuxième... Vous êtes incohérents, incohérents!”

[Be2b, 23.11.2011]

Firmin (APEFE Technical Assistant): “And everywhere, in every school, they tell me the same thing: «I want a second computer lab.» Kiremba wants a second computer lab, they already know where to put it! (...) **To do what? I don’t know.** At ETP Gitega they asked me the same thing and I replied: «But aren’t you ashamed of asking me a second computer lab when there’s nothing: you don’t even know how to take care of the first one, which is entirely empty all the time, and on top you ask for a second one... **You are incoherent, incoherent!”**

[Be2b, 23.11.2011]

Firmin’s puzzlement, shared by most of us *developers*, was condensed in the following and final research question (see Figure 1.2):

RQ_{t4}: Why do school computer laboratories set up in the sub-project often remain unused, even though all stakeholders agree that they are indispensable?

This question is composed of two sub-questions, which have been analysed separately:

a. Why do computer labs often remain unused?

¹⁰ Throughout the whole thesis the original transcript and the transcription in English are presented side by side for greater transparency and closeness to the data.

b. Why does the demand for computer labs remains strong, especially amongst Burundians, despite their underuse?

It is this second question that makes this thesis distinct, in that it tackles an intriguing breach between *developers'* and *developees'* relationship to ICTs and ultimately between their epistemologies.

Rooted in social constructionism (Berger & Luckmann, 1966; Blumer, 1969; Bruner, 1990; Crotty, 1998; Latour, 1996; Long, 2001; Schmidt & Hauptmeier, 1984; Van Maanen, 1979; Watzlawick, 2006), this thesis frames reality as a contextually emergent process, stemming from the iterative negotiation of meaning occurring in the interactions between social beings. According to this view, objectivity is what is perceived by interactants as no longer needing to be debated and taken for granted. Berger and Luckmann's (1966) notion of *institutionalisation* is the process by which social practices 'sediment', thus becoming reified and resilient when the memory of the original negotiations around such practices is lost, as is the case when they are passed on from a generation to the next. Already in the 1930s, Vygotskji (2010) studied how humans learn to make sense of reality by being gradually socialised during their upbringing, and by mastering meaning-making-in-context through recognising context-marking cues. This process is fundamental in the construction of a shared reality and modern societies have largely entrusted school systems with this responsibility — although this is been increasingly challenged by the diffusion of ICTs (Petit & Santos, 2014; Langer *et al.*, 2014, p. 157). Most education initiatives in so-called developing countries are conceived and evaluated according to their degree of compliance with this particular mode of enculturation, school, to which they have been acculturated during colonialism and this is still largely modeled on a foreign worldview. This research explores how the enculturation and acculturation processes are manifested in Burundian vocational schools, and deciphers the role of ICTs in this process (Krauss, 2012, no pagination):

"All of these can be seen as forms of false ideologies and false beliefs that are potentially deeply entrenched in the worldviews of both the "developed" and "developing". It is a problem in need of critique. (...) In such cases a false consciousness may manifest in the assumption that you are "developed" and that those you are "helping" or researching are in need of development, that it is inherently better to be "developed", and that you know how to develop others. This is a repression-sustaining belief; one that keeps people in a state of non-emancipation and non-enlightenment, and which needs to be challenged."

The thesis aims to reveal the tensions between the emancipatory rhetoric often associated with digital technology (*technological imperative*) and the perpetuation of the ‘developed-developing’ power asymmetry by the acculturation to such technologies. Such acculturation is operationalized and measured by the IDI and NRI indexes mentioned above, which implicitly assume that “all countries modernize in similar fashion, and that particular innovations and adoptions serve as meaningful markers. This assumption is both conceptually and empirically flawed” (Simon, 2003, pp. 29–30) in that it dismisses the different forms innovations will take as meaningful markers, which is culture-specific. The insights drawn from this study could be relevant to other contexts across Africa. This would be particularly important in avoiding the “rusted computer syndrome” (Schiesaro, 2003), namely the waste of precious resources benefitting mainly the digital equipment suppliers (Hollow, 2010; Nederveen Pieterse, 2009, Ch. 10; Unwin, 2009).

In sum, this research offers a main theoretical contribution: a call for an *ecological* approach (see Section 2.4.2) substantiated in the SBIZO framework (see Sections 7.7 and 9.3.2), which makes it actionable. Methodologically, it presents three innovative ways to perform an *archaeology of premises*, by providing:

1. An analytical framework to reverse-engineer critical incidents (*CIA framework* – see Section 4.6.3).
2. A self-monitoring technique to explore and track the evolution of one’s own perceptions of the research setting in a more structured way than regular fieldnotes (*ethnographic snapshots* – see Section 4.5.1).
3. A showcase on how to leverage the so-called ‘*right brain*’ by stimulating analogical and metaphorical thinking (see Sections 7.3 and 7.4), as well as by making implicit, contextual knowledge visible and actionable through the use of Net-Map (see Sections 4.5.2 and 7.5).

1.4 Ethical concerns about names

In order to perform this ethnographic study, I negotiated a Memorandum of Understanding with all of my institutional partners, namely the Belgian Technical Cooperation’s AESTP project, the Association for the Promotion of

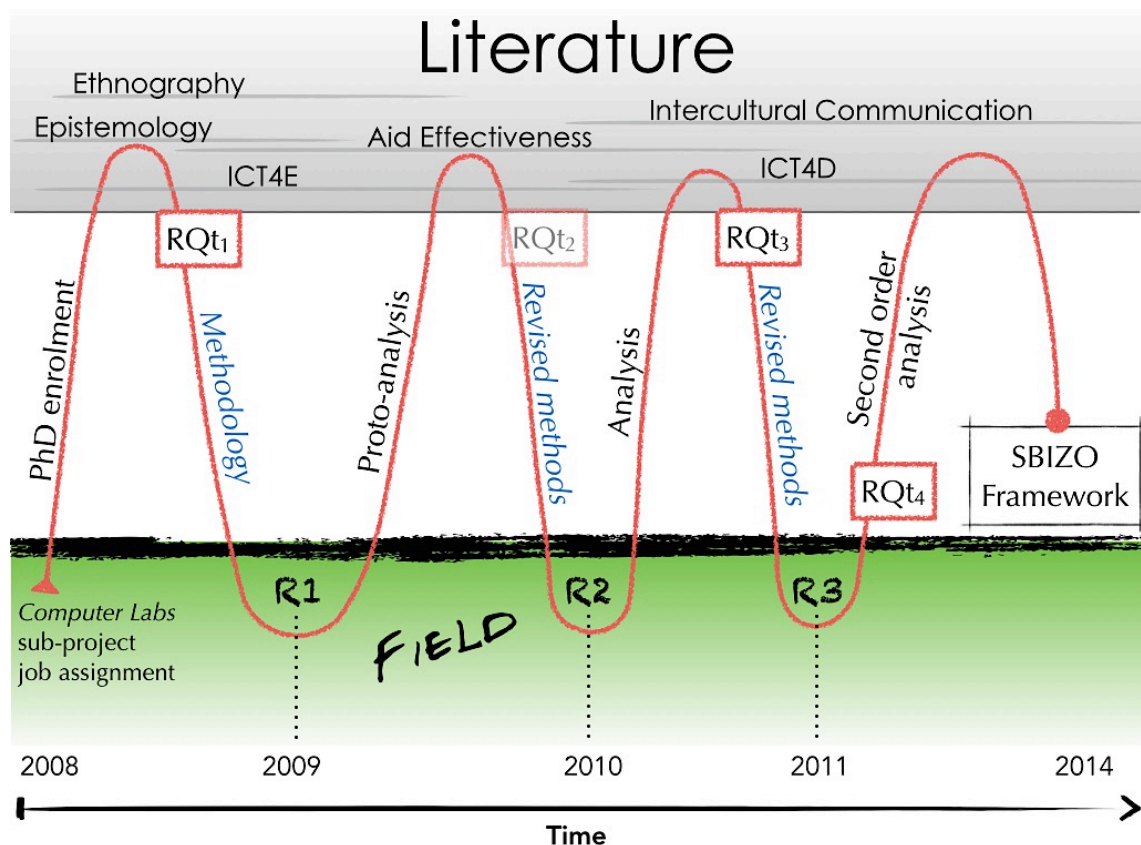
Education and Training Abroad (APEFE) (see Annex 1), the Burundian Ministry of Education (see Annex 2) and the ST Foundation (see Annex 3). Each signatory organisation chose whether to be mentioned or whether they would prefer me to use pseudonyms. The same liberty was offered to each interviewee, who could choose anonymity in the informed consent form s/he signed (See Annex 4). While in that occasion the majority of them chose to be mentioned with their real names, eventually I decided nonetheless to use pseudonyms for everyone. Indeed, even though I provided key informants with the quotations I had inserted in the thesis draft for validation and none objected, I deemed that given the sensitivity of the issues emerged in the interviews, pseudonyms would better protect both their reputation, their interpersonal relationships with other interviewees and also my liberty to publish. Moreover, one key argument of the thesis is the importance of the context in shaping actors' behaviours, therefore it would have been unfair to expose some interviewees to potential criticism for their declarations and/or actions if excerpted from the wider narrative. According to Barnes (1979, p. 39) data should be presented in such a way that respondents should be able to recognise themselves, while the reader should not be able to identify them. To this aim, organisational roles' names have been translated into English, yet the acronyms have been kept in the French form to maintain the correspondence between some of the data (net-maps — see Chapter 4 and 7) and to facilitate research participants to understand those references. Other ethical issues pertaining these aspects of my research are set out in Chapter 4 on Methodology.

1.5 Thesis Outline

1.5.1 Part I: Setting the stage

The distinctive structure of this thesis seeks to reconcile the typical sequence — literature review, theoretical framework, methodology, data analysis, conclusions — with the actual unravelling of the research as an ethnographic study with multiple cycles of data generation and analysis during which both the research questions and the methods evolved (Figure 1.2). This research journey and its rationale are described in detail in Chapter 4, which builds on Chapters 2 and 3 that provide the theoretical and contextual grounding respectively.

Figure 1.2. My research journey.



Key: $RQt_{\#}$ = Research Question(s) at different times.

$R_{\#}$ = Field Research round (the timeline scale is merely indicative).

Source: Author.

Chapter 2 presents the theoretical framework of the thesis and explores two main bodies of literature:

1. The longstanding discussion on the Development venture, paying special attention to the Aid effectiveness debate.
2. The literature on ICT for Education, within the wider framework of ICT for Development, yet with specific attention to the institutional issues that arise at school administration level.

It advances an epistemological critique of the Development mainstream approach (Riddell, 2007; Sachs, 2005), and draws a parallel with research on the critical theory of technology (Feenberg, 2009; Leckie & Buschman, 2009), which questions its mechanistic worldview. In particular it focuses on the symbolic and aspirational values of ICTs (Appadurai, 2004; Hollow, 2010; Mercer, 2006; Pal, 2008, 2012; Pal *et al.*, 2009), thus highlighting how the relationship with

technology is shaped by the hosting culture. It calls for an *ecological* perspective, both for ICTs and Development at large: one that frames the hosting environment as a complex socio-cultural *ecosystem* inhabited by *actors*, and focuses on their interrelationships as well as on their relationships with their *habitat* — ICTs included. Finally, it suggests that an *intercultural communication* lens may prove helpful to study such ecosystems.

Chapter 3 focuses on my practitioner's perspective to situate the research in context, both geographically and historically, delineating the specific case study, its rationale and relevant technical details. It then clarifies the four analytical layers adopted with respect to the institutional context, namely:

1. *Nano* (within the computer labs).
2. *Micro* (within the school, but outside the computer lab).
3. *Meso* (within the Computer Labs sub-project and its follow-up).
4. *Macro* (within the wider bilateral cooperation project involving the Belgian Technical Cooperation and the Burundian Ministry of Education and the broader Aid context).

It illustrates my multiple roles as project manager, information systems designer and teachers trainer in computer lab management, thus explaining why the empirical evidence presented revolves around the *micro* and *meso* layers are central to the research, while the *nano* and *macro* levels are ancillary. Finally, it characterises the Computer Labs sub-project within the teacher training in ICT and school management literatures.

Chapter 4 adopts the researcher's perspective: it describes the research design, epistemologically and methodologically, in terms of data generation and analytical strategy. It analyses the issue of *positionality* across the three rounds of field research (December 2008 — July 2009; February — March 2010; and November 2011) and illustrates the five main methods adopted during the research: *ethnographic snapshots*, *Net-Map* (Schiffer, 2007; Schiffer *et al.*, 2010; Schiffer & Hauck, 2010), *interviews* (Soss, 2006; Yanow & Schwartz-Shea, 2006), *critical incidents inventory* (Long, 2001, p. 53; Pedersen, 1995) and *handwritten essays* (see Section 4.5). These comprise the analytical tactic adopted throughout

the research process, which entails the Critical Incident Analysis (CIA) framework.

1.5.2 Part II: Disentangling intricacies

Chapter 5, 6, 7 and 8 are explicitly analytical, rooted in the empirical evidence I co-generated with my research interlocutors. The narrative movement is from observations about the state of *things* (Chapter 5), to the characterisation of the *relationships* between stakeholders (Chapter 6 and 7), to the deep seated *cultural matrices* underlying *developers'* and *developees'* mindsets (Chapter 7), and finally to the crosscutting role of the *technological imperative* throughout (Chapter 8).

Chapter 5 provides an overview of the situation observed or reported by the interviewees throughout the different phases of field research. More specifically, it investigates the facilitating factors as well as the barriers to the uptake of the ICTs in the different schools, case by case, mainly at the *micro, and meso* analytical levels. These factors are compared with the relevant literature on ICT for Education in *thin-tech countries*. This is followed by an analysis of a selection of *critical incidents*. The various uses of the newly established computer laboratories are illustrated and classified as *uses, misuses* and *underuses*, according to the degree of alignment (Rega, 2010) with stakeholders' expectations, and are linked back to the relevant literature in ICT4E.

Chapter 6 builds on this analysis to map out the different sentiments elicited by critical incidents, and explores the attitudes of the main decision makers. It draws on the long tradition of Attribution Theory (Heider, 1958; Weiner, 1986), to build a binary pragmatic framework, named *SBIZO* — *Stop, Breath in, Zoom out*. The framework distinguishes a *dispositional route*, when the counterpart's puzzling behaviour is explained in terms internal traits, from a *situational route*, when the contextual factors are taken in due consideration to extend the interpretive grid in order to restore coherence and understanding. When applied in organisational settings, this distinction has significant effects on *trust* building, maintaining, damaging and repairing (Mayer *et al.*, 1995; Tomlinson & Mayer, 2009). More specifically, it investigates the interpersonal dynamics

occurring between the Belgian aid workers and their Burundian counterparts. It explores the *paternalist* and *patronising* attitudes (Sirolli, 1999) exhibited by the Belgians and the complacent, submissive, manoeuvring, boycotting and conspiratorial meta-reactions by the Burundians, as emerging from the field data.

Chapter 7 completes the SBIZO framework by integrating the *situational route*, which emphasises the role of history and culture as keys to overcome the puzzlement and disappointment engendered by critical incidents and turn them into occasions for mutual learning and better understanding. It analyses the different perceptions of the relationships between the Belgian Technical Cooperation agency and their Burundian counterparts as analogies proposed by the stakeholders themselves. Through this analysis, two deep-seated *cultural matrices* are analysed: *Ubuntu* (Kamwangamalu, 2004; Mthembu, 1996, p. 216) and *Relatio* (Sheneberger & Van Stam, 2011; Van Stam & Van Oortmerssen, 2010). These imply an emphasis on people and their interpersonal relationships versus a focus on instrumentality of ‘things’ and tasks (Chambers, 1997, pp. 36-38; Heeks, 2002; Krauss, 2012). The analysis of some of the net-maps produced during the field research is presented as supporting evidence.

Chapter 8 overlays the *technological imperative* onto the reflection expounded in Chapter 6 and 7, grounding it idiographically. It delves into the different narratives around computer laboratories produced by the Belgians and the Burundians, both *before* and *after* their installation. Specific discrepancies are highlighted, especially with regards to the symbolic value of ICTs (Van Zyl, 2013) in terms of aspiration and status enhancers (Appadurai, 2004; Hollow, 2010; Mercer, 2006; Pal, 2012; Pal *et al.*, 2009). The chapter consolidates the results of the previous analyses so as squarely to tackle the key research question:

RQt₄: Why do school computer laboratories set up in the sub-project often remain unused, even though all stakeholders agree that they are indispensable?

It suggests moving beyond the dominant ‘Western’ narrative on computer labs

as *means to do something*, carefully to consider the local ‘universe of coherence’ in which they come to be embedded as *means to be someone*.

Chapter 9 relates these findings back to the conceptual framework and in so doing highlights the original contributions of this research, namely the *ecological* approach, substantiated in the *SBIZO framework*, as well as its methodological contributions, enabling an *archaeology of premises*: the Critical Incident Analysis (CIA) framework; the ethnographic snapshots and the leveraging of the so-called ‘right brain’ (McGilchrist, 2009, 2011) using analogies and net-maps. It also presents a critical evaluation of Net-Map as a method in its different variations. It then applies such contributions to the Development practice, especially to the debate around Aid effectiveness and ICT for Education calling for a transposition of the SBIZO framework to other analogous contexts as a practical tool for enhancing self-reflection and intercultural sensitivity in ICT4D research and practice. Finally, it addresses the limits of the research and suggests new directions for further investigation, to conclude with an ambitious proposal: moving from *bilateral* to *reciprocal* cooperation, in the name of cultural equality.

Part I: Setting the stage

2 Aid, ICTs and education: a problematic nexus

2.1 Introduction

“Imagine yourself suddenly set down surrounded by all your gear, alone on a tropical beach close to a native village, while the launch or dinghy which has brought you sails away out of sight.” (Malinowski, 1922, p. 4)

Friday, 5.12.2008, Bujumbura, Burundi.

This Sunday I will have to officially kick off the training of 28 people: 21 teachers, 2 lab managers, and 5 pedagogical advisors working for the BEET [Bureau d'Études de l'Enseignement Technique — the Burundian office of the Ministry of Education in charge of the pedagogical supervision of teachers nationwide]. I'm nervous: it has been months of hard work to get to this moment, having selected all these people one by one through a thorough recruitment process in each of the 10 technical high schools in which the AESTP project has decided to install a new computer lab. As a trainer, I know that it is absolutely key that the first meeting runs smoothly, creating an harmonious atmosphere, such that all trainees feel at ease with each other since their first encounter, despite their different geographical origin and/or status. Exceptionally, Cédric [my boss] accepted to let me start the training on a Sunday, as I want to make sure to have the main meeting room available for the whole day and a quiet environment all around. Yet, when handing me the key to the meeting room, he warns me that in order to have access to the restrooms I will have to ask M. Dieudonné [BEET's director and his local interlocutor] for the keys. So I go there, and M. Dieudonné bluntly denies me the permission to access the restrooms, redirecting me to the director of the neighbour office, whom I don't know. I'm quite puzzled by such a dry reaction, but I'm new here, so I comply and go check out the other office's toilet to quickly realise that it does not fit the purpose: it is an outdoor toilet, located in a small ad hoc building in the office garden, about 100 m away from the meeting room, and it is in dreadful conditions (no water and very dirty): “They'll feel insulted if I ask them to come here!” — I tell myself — so I decide to go back and try to persuade M. Dieudonné to grant me access to the usual office restrooms. I defend my case until he finally declares: “Ok, but Cédric has to pay for the toilet paper!”

(Fieldnotes, 05.12.2008)

This thesis is an ethnographic study. It aims to understand *why* things play out in a certain way and it weaves together experiences, practices and interpretations by the people under study with those of the ethnographer (Coffey, 1999; Hammersley & Atkinson, 2007; Lofland & Lofland, 1994; Madden, 2010; Piccardo & Benozzo, 1996; Van Maanen, 2011). It aims to build a tentative bridge of meaning between cultures: the observer's, the observed's and the reader's (Van Maanen, 2011, p. XV).

Consistent with the epistemological approach sketched in Chapter 1, I avoid the usual split between literature review and fieldwork, between theory and practice, and interweave them, because this is the way the research actually developed: it started in the field, not in a library. This tension between my practitioner and academic personas is a valuable subject of exploration in its own right.

So, what made M. Dieudonné so upset with Cédric even to cross swords over a toilet paper roll? And why is this so relevant? M. Dieudonné is Burundian and at the time of the event he was serving as director of BEET for a few months. According to office rumours, on both the Belgian and the Burundian side, he had been appointed director for political reasons despite his lack of experience and competence. Cédric is Belgian and he was de facto the leader of AESTP¹¹, a €14M (≈ £11,5M) bilateral project between the Belgian cooperation agency (CTB) and the Burundian Ministry of Education aimed at restructuring the Burundian vocational education over five years (2005-2010). He had established close cooperation with M. Dieudonné's predecessor and was very disappointed when the Ministry unilaterally decided to replace him with M. Dieudonné, as he found him not nearly as responsive. Thus, Cédric regarded the weekly office meeting as an occasion to complain about the ineptitude of M. Dieudonné in a condescending tone. Occasionally, Cédric ridiculed M. Dieudonné in front of the four European technical assistants hired by the project, myself included, and in front of his Burundian colleagues. To retaliate, M. Dieudonné used his power to resist initiatives promoted by Cédric, no matter their merit. His reluctance to grant me the use of the office toilets for the first session of the training made me grasp the intensity of this tension. To a certain extent, this conflict represented a latter-day enactment of historical colonial dominance of

11 AESTP stands for Appui à l'Enseignement Secondaire Technique et Professionnel.

the Belgians over Burundi. It was about confirming or resisting a certain mode of Development — Eurocentric, top-down and white-driven, to the point that even a petty toilet paper roll could be charged with symbolic importance in an ongoing struggle for respect.

Donors and recipients, funders and beneficiaries, colonisers and colonised, expatriates and locals, outsiders and natives, guests and hosts: labels may vary according to the jargon of choice. Yet, this class of binary relationships has long been acknowledged to be problematic in questioning both the *effectiveness* of Aid and the *legitimacy* of Development (Riddell, 2007; Sachs, 1992). Thus, in this chapter, I first present an overall critique of the wider debate on Development, with attention to the perspective of *modernisation-as-development* and critical anti- and post-development stances. Then I focus on the Aid effectiveness debate occurring between Aid providers and Aid recipients at the global institutional level by analysing its evolution since the Pearson's Commission report (1969) until the recent High Level Forum on Aid Effectiveness in Busan, South Korea (2011). Furthermore, I draw a parallel between such debates and those that consider the effectiveness of ICT4D initiatives, known to have high rates of failure (Dodson *et al.*, 2012; Heeks, 2002). Finally, I focus on the specific issues that hamper the potential of ICTs in education in Africa. I explore the *technological imperative* rhetoric, namely the belief that:

1. ICTs are fundamentally good; they lead to progress (Ellul, 1954; Feenberg, 2009; Leckie & Buschman, 2009; Van Zyl, 2013);
2. ICTs are a means, thus culturally neutral and universally applicable (Hollow, 2010; Hutchins, 1995);
3. ICTs are indispensable, especially in education, otherwise one will be excluded from modernity and lose credibility (Bates, 2000; Trucano, 2009).

I draw attention to the neglected intercultural complexities observed in much bilateral cooperation and to the crucial importance of the context in order to show how this relates to the effectiveness debates (Avgerou, 2000; Avgerou & Walsham, 2001; Walsham & Sahay, 1999).

2.2 Aid for Development: a controversial venture

The debate around Aid-for-Development arose with the inauguration speech of

President Truman (1949):

“We must embark on a bold new program for making the benefits of our scientific advances and industrial progress available for the improvement and growth of underdeveloped areas. Greater production is the key to prosperity and peace. And the key to greater production is a wider and more vigorous application of modern scientific and technical knowledge... I believe that we should make available to peace-loving peoples the benefits of our stores of technical knowledge in order to help them realize their aspirations for a better life.”

Truman’s ideas echoed Rostow’s (1959) modernization theory of a universal ladder of development stages to be climbed through economic growth. Implicitly though, it promoted the American lifestyle and capitalism as ‘The’ model for progress and became the grand narrative of Development. In opposition, some Marxist and neo-Marxist perspectives envisioned Development as the emancipation of the poor and marginalised created by capitalism. Among those, Dependency Theory asserted that the living standards enjoyed in the North are made possible at the expenses of the South, and therefore rich countries have an interest in keeping this development asymmetry in place (Amin, 1976; Cardoso & Faletto, 1979; Guevara, 1964; Prebisch, 1950). This tied Aid-for-Development to the geopolitics of the Cold War during the decolonisation era, with the US and the USSR employing it as a means for extending their political influence (Simon, 2003, p. 12; Simon & Dodds, 1998). In the 1980s and the 1990s, this was reflected in the top-down, macro-economic, and outsider approaches of the World Bank (WB) and International Monetary Fund (IMF). These organisations instituted Structural Adjustment Programmes (SAPs) under the slogan of “Trade, not aid”. Hence, conventional Development came to be challenged in some quarters as “constituting little more than a self-interested Northern capitalist and geopolitical industry seeking to extend markets and perpetuate spheres of influence in a manner redolent of the colonial era” (Simon, 2003, p. 7). Prominent critics were Sachs (1992), Esteva (1992), Escobar (1992, 1995), and Ferguson (1990) who deconstructed Development as a hegemonic discourse, constituting a radical anti-development front:

“...development has been successful to the extent that it has been able to integrate, manage and control countries and populations in increasingly detailed and encompassing ways. If it has failed to solve the basic problems of underdevelopment, it can be said (...) that it has succeeded well in creating a type of underdevelopment that has been for the most part, politically and technically manageable.” (Escobar, 1995, p. 47)

In the first Human Development Report (UNDP, 1990) Development was

conceptualised in terms of freedom of choice, drawing on the theoretical work of Indian economist Amartya Sen (Sen, 1999, p. 18):

“the expansion of the ‘capabilities’ of people to lead the kind of lives they value—and have reason to value”.

However, Sen’s capabilities approach does not include environmental sustainability as a key dimension to Development. Four decades after *The Limits to Growth* (Meadows *et al.*, 1972), which first warned about the impossibility of indefinite economic growth on a finite planet, the 2013 UNDP’s Human Development Report (UNDP, 2013, p. 36) officially states that all the countries ranking very high in the Human Development Index have an unsustainable ecological footprint (Wackernagel & Rees, 1996).

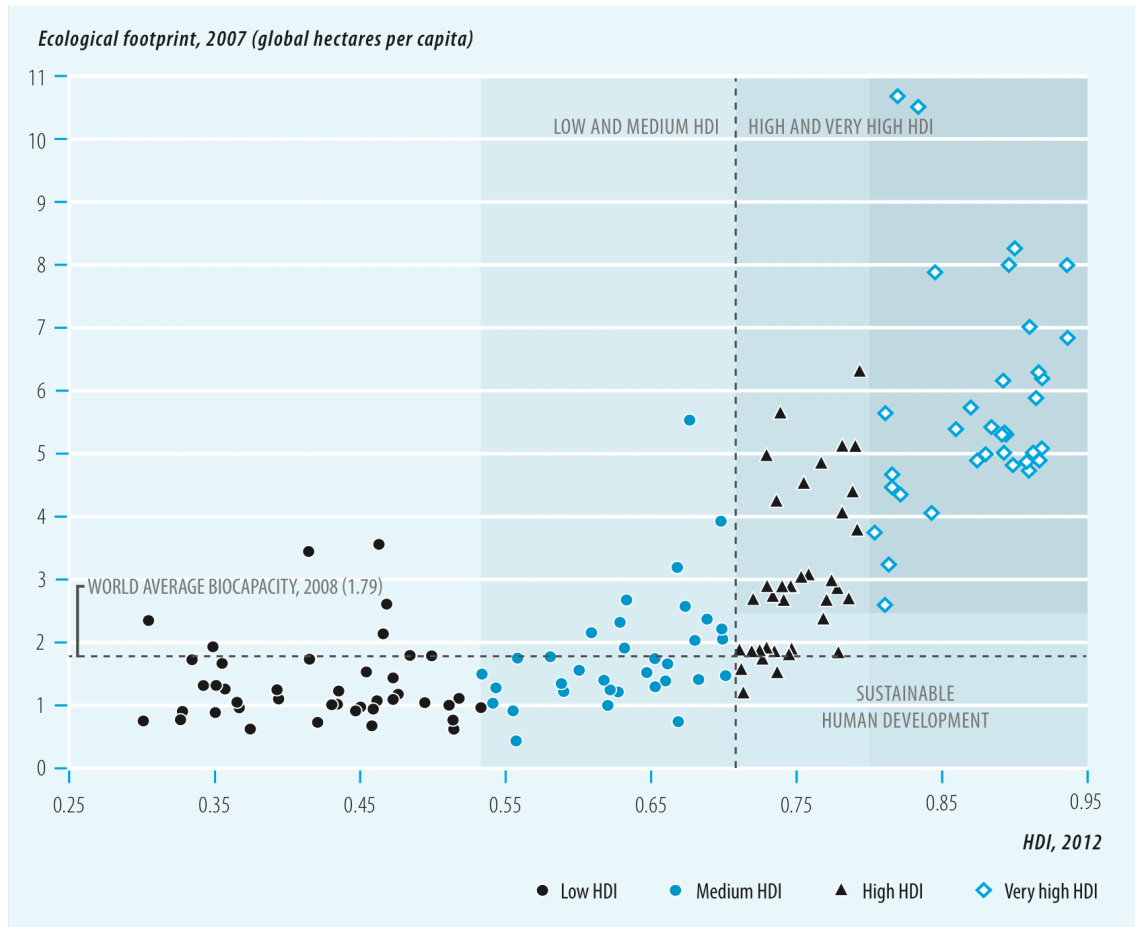
Figure 2.1 shows that richer economies are environmentally not sustainable. This argument challenges squarely the assumption of many Development economists that the recipe to ‘lift the poor of the world out of poverty’ is their inclusion in a global economy (Easterly, 2007; Hubbard & Duggan, 2009; Sachs, 2005) as it is based on an unsustainable, linear model of economic growth (Malighetti, 2008, pp. 34–38; Jackson, 2009; Latouche, 2003):

“The classic aim of development, modernization or catching up with advanced countries, is in question because modernization is no longer an obvious ambition. Modernity no longer seems so attractive in view of ecological problems, the consequences of technological change and many other problems.” (Nederveen Pieterse, 2009, p. 1)

An *ecological* perspective reverses the traditional hierarchy between economics and the environment. Under environmental sustainability criteria, self-appointed Developed Countries’ with their dominant consumerism could be legitimately considered *overdeveloped* — with a negative connotation homologous to that normally associated to *underdeveloped*. From this perspective their dominant Development rhetoric is ‘smuggling’ overdevelopment as development to so-called Developing Countries, most of which are still environmentally sustainable, precisely because they have not yet being englobed in the global economy nor acculturated to consumerism and therefore they still have not compromised the relationship with their natural life support system (Latouche, 2004).

Figure 2.1. Ratio between environmental sustainability measured in Ecological Footprint and Human Development Index, indicating that all very high HDI countries are beyond global biocapacity.

Few countries show both the high HDI and low ecological footprint required for sustainable human development



Note: Ecological footprint is a measure of the biocapacity of the earth and the demand on biocapacity. It depends on the average productivity of biologically productive land and water in a given year.

Source: HDRO calculations and Global Footprint Network (2011).

This is not to discount the many advantages that high-HDI ranking countries enjoy (Sachs, 2005; Simon, 2003, p. 14; Zupi, 2007) nor “to dismiss the many genuinely progressive initiatives in the same terms as harmful or inappropriate development assistance” (Simon, 2003, p. 16) by reducing the debate solely to the environmental sustainability variable. Nevertheless, with Bateson (1972):

“Our conscious sampling of data will not disclose whole circuits but only arcs of circuits, cut off from their matrix by our selective attention. Specifically, the attempt to achieve a change in a given variable, located either in self or environment, is likely to be undertaken without comprehension of the homeostatic network surrounding that variable. (...) It may be essential for *wisdom* that the narrow purposive view be somehow corrected (pp. 444-445) [otherwise] (...) The environment will seem to be yours to exploit. Your survival unit will be you and your folks or conspecifics against the environment of other social units, other races and the brutes and vegetables. If this is your estimate of your relation to nature *and you have an advanced technology*, your likelihood of survival will be that of a snowball in hell.” (p. 462 - emphasis in the original).

Seconding Bateson, my critique is eminently *epistemological* as it challenges the very idea of modernisation-as-development, which is pivoted on technological advancement (see Section 2.3). Indeed, the modernist answer to the sustainability problem is the green economy: solving environmental degradation through greener technologies (Gore, 2009). Whether or not this will be successful is beyond the scope of this work. Yet this argument raises three main controversies:

1. This same modernisation approach has been largely applied to improve Aid effectiveness as well as to education: striving to solve a systemic, political and cultural problem by means of an ensemble of technical and technological solutions.
2. The same approach applies for many ICT for Development initiatives and in particular ICT4E projects, in which ICTs are often considered as the silver bullet to improve education in the 'global South' (see Section 2.4)
3. Underlying this faith in technical solutions is a *hubris* by Development agents in 'OCs — Overdeveloped Countries':

"Usually, and especially in conventional institutional or governmental terms, this has involved making 'them' more like 'us', in other words spreading 'our' (i.e., donors') technologies, ways of doing things, cultural accoutrements, etc. Almost invariably, there is an implicit underlying assumption of a civilizational, technological or political-economic hierarchy, with the donors at the summit, and the objective of development assistance being to 'uplift' the recipients." (Simon, 2003, p. 17).

This was the dominant mindset in the project that constitutes this case-study. When I started my research in 2008, I had been in Burundi since 2004, and had grown fairly critical of mainstream Development practice, yet as a practitioner, I still acted in accordance to it. I was ethnocentrically proud of my values and technological knowledge, rooted in science. My research journey along the ridge between practice and academia illustrates the evolution of my worldview and of my tentative understanding of my interlocutors, both Europeans and Burundians, through self-reflective inquiry on their collisions (see also Krauss, 2013).

2.2.1 The debate on Aid Effectiveness

This section explores the effectiveness of Development from within the modernist discourse inscribed in some of the relevant literature. This literature

is very substantial, and any overview here can only be partial. It therefore begins by using Riddell's (2007) *Does Foreign Aid Really Work?* as its basis, and draws on official documents produced by large institutional actors — the OECD's Development Assistance Committee (DAC), UN agencies and commissions, and multilateral financial institutions, namely the World Bank and the IMF. The Belgium Aid agency is a DAC member and therefore its governmental interventions and policies undergo the rhetoric promoted by these international institutions. Figure 2.3 provides an historical overview of the main institutional documents comprising the official discourse on Aid effectiveness. Such institutional discourse was shaped and led by OECD countries through their Development Assistance Committee (DAC)¹² until the early 2000s (Glennie, 2011; Riddell, 2007). Its landmark report, *Shaping the 21st Century: the contribution of Development Co-operation* (1996), initiated the Development agenda later to be consolidated in the Millennium Development Goals (Booth, 2008; Glennie, 2011; Hulme, 2007). Echoing Pearson (1969, p. 127), the report posits that such Development “must be locally owned” in that:

“In a partnership, development co-operation does not try to do things for developing countries and their people, but with them. It must be seen as a collaborative effort to help them increase their capacities to do things for themselves. Paternalistic approaches have no place in this framework. In a true partnership, local actors should progressively take the lead while external partners back their efforts to assume greater responsibility for their own development.” (DAC, 1996, p. 13)

This emphasis on local ownership of Development policies as the keystone of Aid effectiveness is found on the recommendation lists of all the Aid effectiveness documents listed in Figure 2.3. Yet, as Glennie (Glennie, 2011, p. 2) points out, “The irony is that recipient countries do not own the process that is meant to ensure their ownership”. Indeed, the same document reads that the first responsibility for developing countries is to “adhere to appropriate macroeconomic policies”: appropriate according to whom? Citing Van de Walle, Easterly (2007, p. 146) denounces a similar attitude by the International Financial Institutions and terms it “ventriloquism”:

“The Planners¹³ tie themselves up in rhetorical knots as they try to resolve the unresolvable contradiction between conditions and sovereignty. (...) So the poor-country governments, instead of being told what to do, are now trying to guess what the international agencies will approve their doing.”

¹² Not all the OECD members countries are DAC members: in 2012, only 24 out of 34.

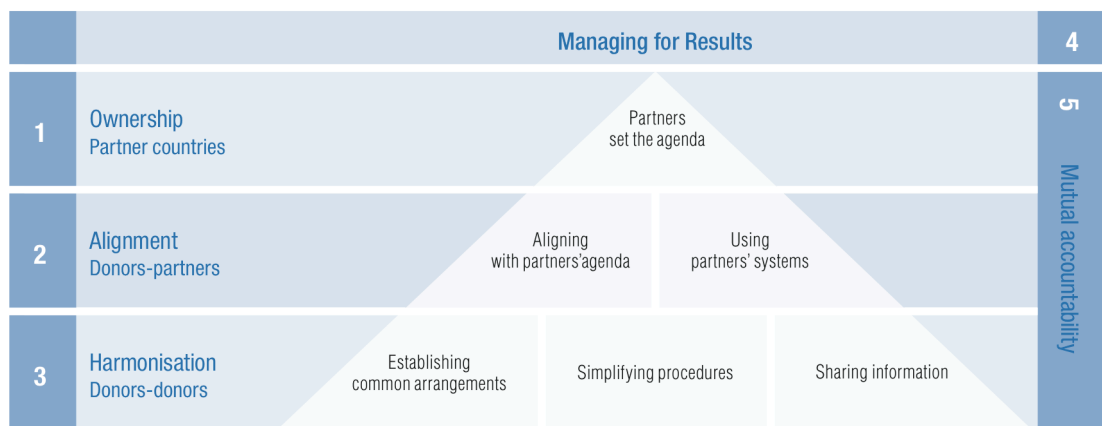
¹³ Easterly's term to refer to ODA providers.

This paradox survives in all the subsequent documents and declarations about Aid effectiveness (DAC, 2005, 2011; UN, 2008) and empirical evidence of its manifestation in this case study is illustrated in Section 6.4.3. While there seems to be consensus on the importance of local ownership, it appears to be based on two questionable premises:

1. Aid recipient governments agree with, embrace and are committed to implement Development policies in their countries;
2. They also endorse the ways in which these policies should be implemented according to their proponents.

The entire pyramid of Aid effectiveness formalised in the Paris Declaration (DAC, 2005) is pivoted on local ownership and will collapse without it (Figure 2.2).

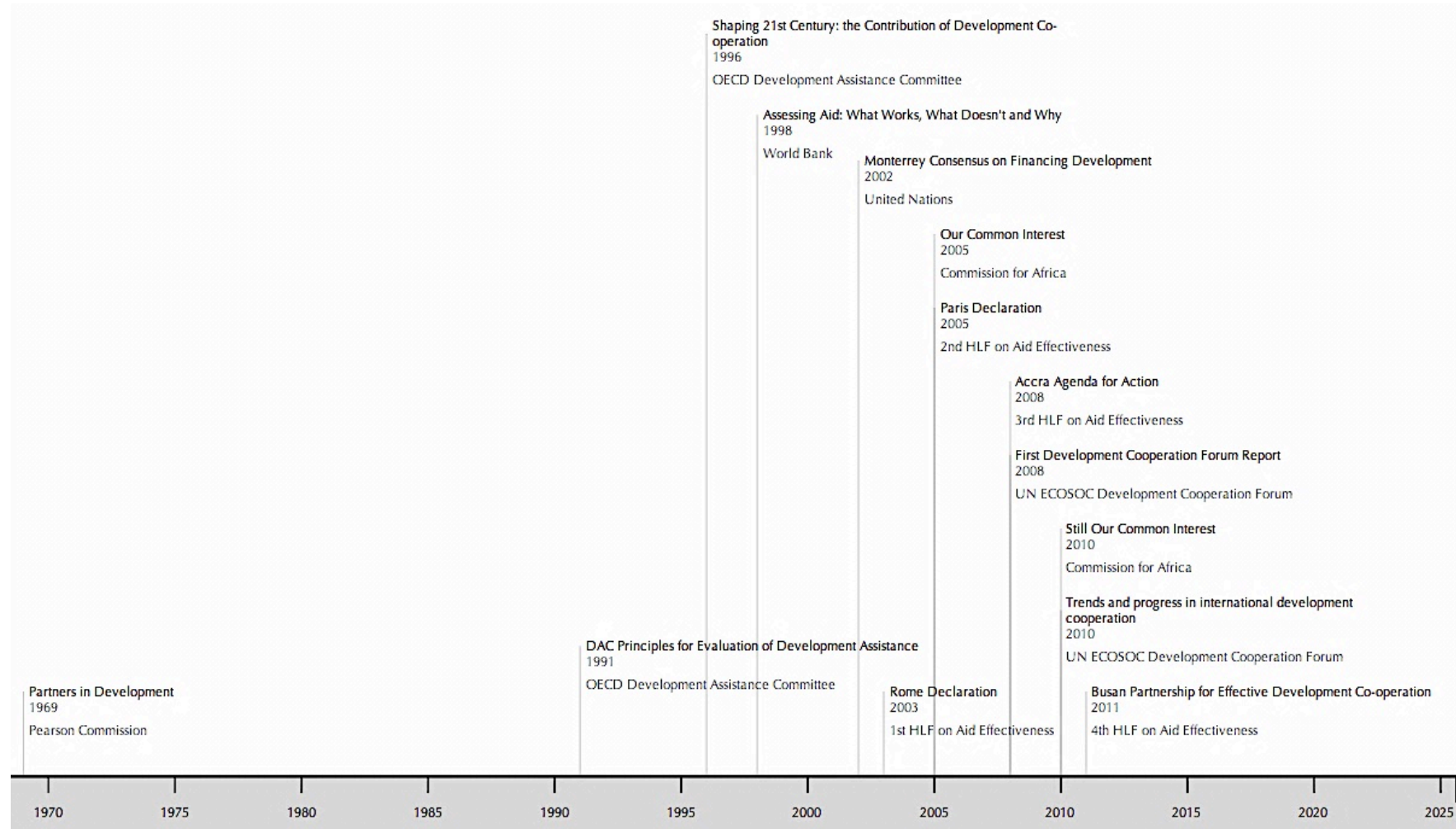
Figure 2.2. Five shared principles with actions to make aid more effective.



Source: OECD, 2011, p. 18

The Paris Declaration was the outcome of the Second High Level Forum on Aid Effectiveness held in 2005, and according to Glennie (2011, p. 2), the last “in which the OECD led the debate”.

Figure 2.3. Timeline of key Aid Effectiveness documents released between 1969 and 2012.



Source: Author.

Restating and systematising the core principles expressed in previous documents on Aid effectiveness (DAC, 1991, 1996, 2003; UN, 2002), it conceptualised this complex matter in the pyramid depicted above: (1) foreign Aid is effective in bringing about Development when the Aid recipient government — Partner — owns the Development agenda; (2) providers — Donors — align their effort and support to it without imposing their foreign procedures; and (3) without overloading the recipient country system with competing or overlapping requests; (4) relying on sound monitoring and evaluation frameworks to assess progress; and (5) holding each other accountable for the results of the process. Both Glennie (2011) and Booth (2011) agree that the Paris Declaration focused on Aid efficiency, rather than effectiveness, from a markedly DAC bureaucratic perspective. Chambers (2012, no pagination) provocatively made up a sentence with all the most recurrent words in the Declaration:

“To monitor indicators for effective performance for Aid Donors and Partners need the capacity to manage the mutual harmonisation of programs to assess, measure and report on results.”

He also proposes another sentence containing the words that were never used in the Declaration:

“To negotiate and evolve agreements that optimise outcomes for poor, vulnerable and marginalised people, requires compromises and trade-offs based on personal convictions, interactions and relationships that nurture and trust and reflective appreciation to pare off conflicts.” (Chambers, 2012, no pagination)

Further elaborating on the DAC view, at least two other flaws affect its framework. First, it heavily underestimates the role of contextual differences between the funders and the funded: *it presupposes an aspiration to democracy on the Aid recipient side*. It seems forgetful of the lengthy, grievous and unfinished historical process that led most OECD countries to hold democracy as the best available form of government. It assumes that such a realisation is sufficiently self-evident to be shared by everyone else. In so doing, it promotes institutional arrangements that may be ideologically well-suited to their domestic taxpayers yet not fitting the remote context (Putzel, 2010). Ake, one of Africa’s foremost political scientists, is radical:

“The problem is not so much that development has failed as that it was never really on the agenda in the first place. By all indications, political conditions in Africa are the greatest impediment to development.” (Ake, 1996, p. 1; cited in Simon, 2007, p. 7)

Moreover, the Paris Declaration glosses over the remarkably different concepts of power common to many African societies, which are still essentially clannish and oligarchic, centred around the figure of a chief (see Chapter 7 and Section 9.5.1):

“[In sub-Saharan Africa] public policies are largely driven by short-run political considerations, and these usually dictate a clientelistic mode of political legitimation, not one based on performance in the delivery of the public goods required for economic and social transformation.” (Booth, 2011, p. 3)

This heavily affects *accountability*. Burundi for example, was ranked 172nd out of 183 countries in the Transparency International Corruption Perception Index 2011 (http://www.transparency.org/research/cpi/cpi_2011 — accessed 28.04.14). The practice of attributing offices on the precondition of being a member of the ruling party is pervasive and capillary. The frailty of the young media sector together with the low levels of literacy and high levels of poverty severely hinder a cultural change in the direction of greater accountability to the citizens. Furthermore, since the supposed beneficiaries in the Aid recipient countries are neither voters nor taxpayers in the Aid providing countries, they have no or little advantage to hold them accountable:

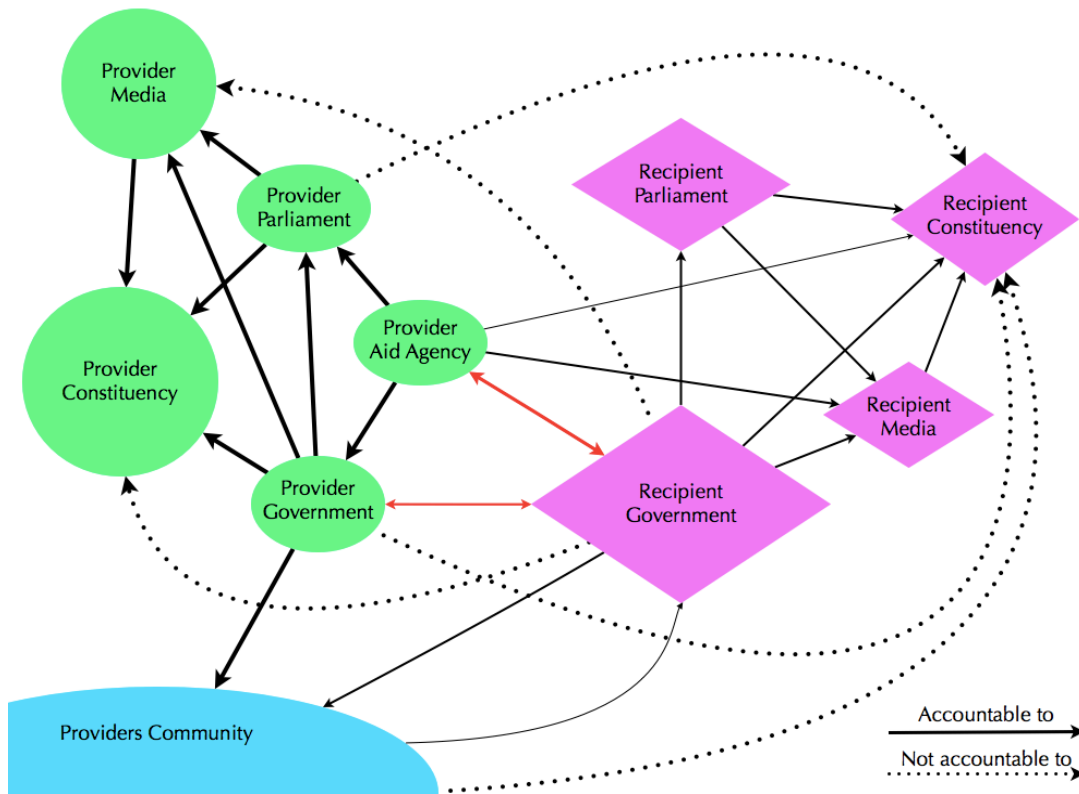
“The foreign aid bureaucracy has never quite gotten it—its central problem is that the poor are orphans: they have no money or political voice to communicate their needs or motivate other to meet those needs.” (Easterly, 2007, p. 167)

The problem is compounded by the multiplicity of providers. Aid providers tend to be more accountable to each other than to the needs of the recipient country population (Easterly, 2007). Figure 2.4 captures some of the complexity of this system by examining the different degrees of accountability between parties.

The Aid effectiveness debate has tended to focus narrowly on the relationships between the provider’s government and Aid agency and recipient government (indicated by red arrows). Less attention has been placed on the wider and complex network of stakeholders illustrated in Figure 2.4.

Another controversial point of the Paris Declaration framework is connected to the second premise cited earlier: *Aid recipient governments will abide by the modus operandi suggested by Aid providers*. If one accepts the Aid recipients’ lack of voice in the Paris Declaration, to address the accountability issue, eminently political, through bureaucratic solutions appears questionable, to say the least.

Figure 2.4. Accountability dynamics in the Aid stakeholders network, where the thickness of the arrow symbolises the relative degree of accountability, and the size of the shape the relative importance of each actor.



For the sake of clarity, I deliberately left out other important players in this network, such as private foundations, CSOs and NGOs — although the latter are often funded by Aid providers' agencies.

Source: Author.

Enforcing greater transparency by way of sophisticated statistical accounting and formal procedures — namely, *managing by results* (see Figure 2.2) — may indeed allow for a finer scrutiny of the activities by the media and constituencies from both sides. Paradoxically though, this can further reduce mutual accountability as the application of these procedures may overburden administrative staff and infrastructure in the recipient country (Booth, 2011, p. 5). More importantly, it could amplify the existing flexibility gap between the administrations of providers and recipients. In other words, such bureaucratic requirements are likely to stiffen the decision-making process on the side of the provider much more than they do for the recipient's administration. Since the former presents itself as an exemplar of good governance, it is expected to fully conform to these requirements. The latter instead can easily justify its lacking compliance with them on the grounds of contextual constraints: lack of electricity, connectivity, computer viruses, toner, paper, training, and strikes — to name a few. In the everyday dealing of project implementation this asymmetry lends power to the Aid recipient's administrator who is not

pressured by its constituencies as its provider's homologue is. Thus s/he may use this difference as a subtle blackmailing strategy to gain personal or institutional advantages, leveraging the provider's administrator urge to fulfil her duties and save face with her superiors (Borner & Brunetti, 1995). Ultimately, what was born as a means to fight corruption may transform into its fertiliser.

In summary, the theoretical relevance of this review is twofold:

1. It reinforces the centrality of context, considering the Aid-for-Development system as a complex *ecosystem* (see Section 2.4.2), where the relationships between actors shape the universe of possibles and in which ICT4D projects constitute a subclass (see Section 2.3) and ICT4E projects a sub-subclass (see Section 2.4).
2. It foreshadows some structural paradoxes to which ICT4D projects are particularly vulnerable: the bureaucratic approach to address accountability and transparency through technical solutions is similar to the attempt to attain sustainability by means of the green economy, and better education by means of ICTs.

The following section further explores these claims by inflecting them in the ICT4D discourse, first focusing on the powerful role of technology in shaping the dominant mentality and practice.

2.3 Problematic assumptions of ICT4D

In this section I situate my research within the wider stream of ICT4D literature and present a brief overview of the evolution of ICT4D policies as a subset of Development initiatives.

The institutional acknowledgement of the potential of ICTs as a means to promote development in poor countries is usually seen as having been first formally expressed in the Maitland Commission Report (1984), which studied the strikingly uneven distribution of telecommunications services in the world (Unwin, 2009, p. 127). However, it was after the advent and the rapid growth of the World Wide Web in the 1990s that the value of access and information sharing in the Development context and beyond, became evident. The point-and-click graphical interface increased the accessibility to the Internet, which

was no longer confined to scientists and engineers, and helped international bodies ranging from the World Bank to the World Economic Forum, the G8, the ITU, and the UN, to realise its development potential. Development stakeholders differed in their attitude towards ICTs:

“Development and technology enjoy an uneasy relationship: within development circles there is a suspicion of technology-booster as too often people promoting expensive, inappropriate fixes that take no account of development realities. Indeed, the belief that there is a technological silver bullet that can “solve” illiteracy, ill health or economic failure reflects scant understanding of real poverty.

Yet if the development community turns its back on the explosion of technological innovation in food, medicine and information, it risks marginalizing itself and denying developing countries opportunities that, if harnessed effectively, could transform the lives of poor people and offer breakthrough development opportunities to poor countries.” (UNDP, 2001, p. iii)

The discourse emerging from the documents and events listed in Figure 2.5 appears to swing along these poles, but one overarching belief seems to be prevalent: *Information and Communication Technologies are good enough for access to them to be fostered* (Kleine & Unwin, 2009, p. 1045; Wade, 2002, p. 460). Yet, the reasons behind this belief are diverse, ranging from ICTs perceived economic value for businesses to their potential benefits for the poorest and most marginalised people of the world.

Many of the problematic effects of technology have already been studied extensively and such research reflected five main types of controversy:

1. The reinforcement of existing power hierarchies (Feenberg, 2009; McDermott, 1969), the Digital Divide being one instantiation (Warschauer, 2004);
2. The dependence from technology versus the enhancement of freedom thanks to technology (Ellul, 1988; Son, 2004; Turkle, 2011);
3. Increased surveillance and violation of privacy (Marx, 2009);
4. Incessant innovation leading to consumerism and (e)waste-pollution (Iles, 2004, p. 94; Kuhn, 2009; Leonard & Conrad, 2010).
5. Cultural homogenisation due to the set of values inscribed in technology versus and empowerment of cultural minorities multiplying voices (Dreher *et al.*, 2008; Lange & Meier, 2009; Rojas *et al.*, 2004).

WG 9.4 - Social Implications of Computers in Developing Countries

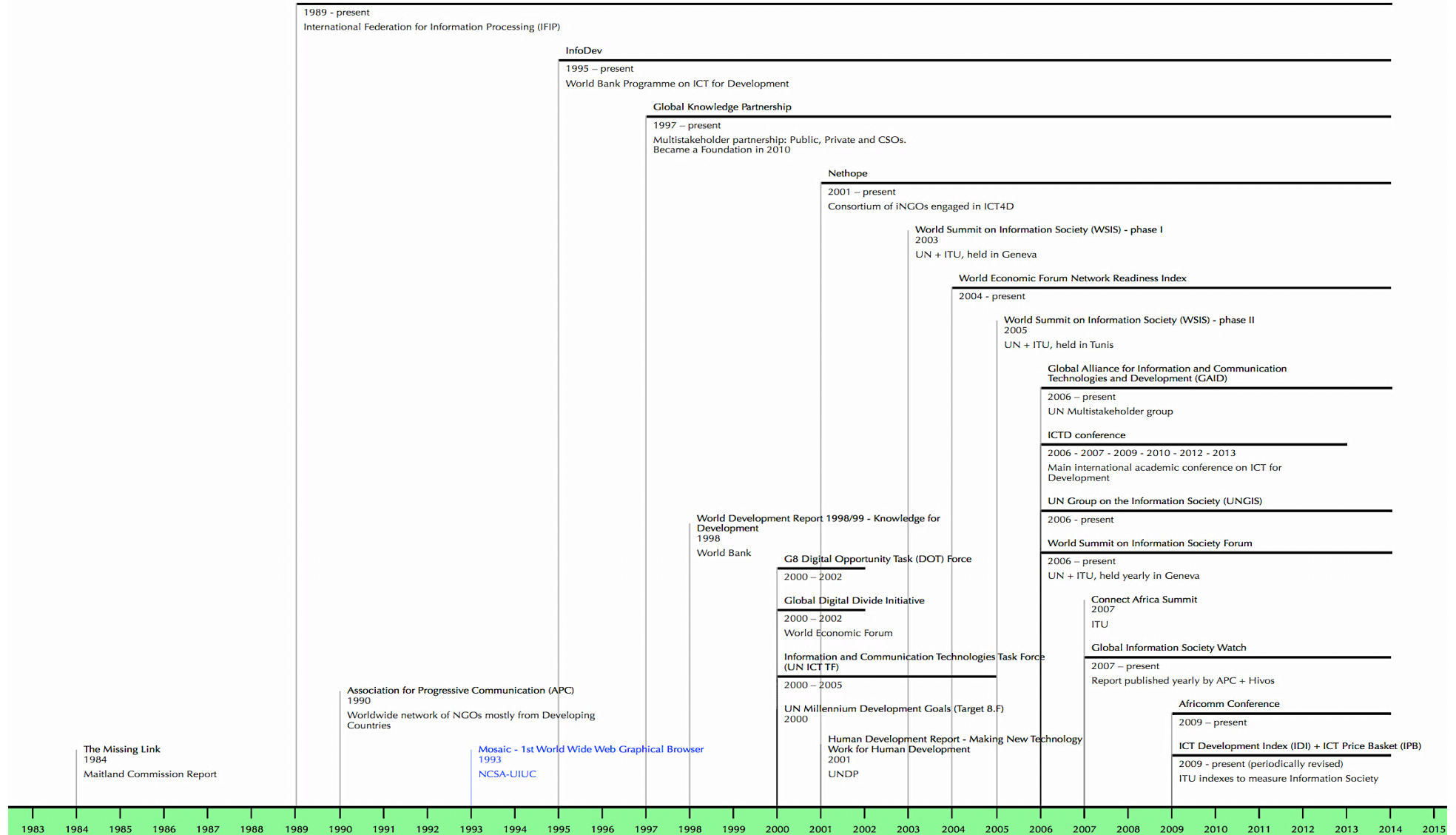


Figure 2.5. Landmark events and documents in the history of ICT4D.

Source: Author.

Undeterred by these controversies, the “juggernaut of technology has in no way been halted: (...) newer forms of technology have become so saturated into wealthy cultures that their existence has become quite naturalized” (Leckie & Buschman, 2009, p. 2, see p. 3-14 for a detailed review). This is underpinned by the belief that “high tech will make [us] healthier, happier, more efficient, more productive, and more democratic than ever before” (Segal, 2005, p. 173, cited in Leckie & Buschman, 2009, p. 11). Calls for caution are often labeled neo-Luddite (Winner, 2004).

This very optimistic (Avgerou, 2008, p. 137) view of technology threads the ICT4D discourse and finds prominent champions in people such as Jeffrey Sachs (2005), director of the Earth Institute and driving force behind the Millennium Villages project (www.millenniumvillages.org — accessed 05.08.2014) and Nicholas Negroponte (1996), charismatic founder of the One Laptop Per Child Association (see Section 2.4).

While there is sufficient evidence that “ICTs can make a significant difference in the lives of poor and marginalised communities” (Unwin, 2009, p. 26; see also Weigel & Waldburger, 2004), success stories — such as the use of mobile phones by Indian fishermen for better market prices (Jensen, 2007; see also Srinivasan & Burrell, 2013 for a different narrative) — are reiterated as exemplars of ICT4D, fuelling the hype and eclipsing the many failures (Dodson *et al.*, 2012; Heeks, 2002). According to some scholars, these stories seem to serve as a rhetorical mantra to fend off critical remarks and propose an easily digestible narrative to convince decision makers to fund ICT4D initiatives benefitting the digital capitalism more than the alleged beneficiaries:

“There are economic interests, political prestige, international structures and ongoing techno-optimistic discourses in place to buttress the mainstream ICT4D field within development work. However, it needs to be recognised that technology and ideology are closely intertwined, and that much of the high-profile ICT4D rhetoric has championed initiatives that view development in ways that are in line with the understanding of key international donors, governments and technology companies.” (Kleine & Unwin, 2009, p. 1049; see also Mercer, 2006, p. 245; Nederveen Pieterse, 2009, Ch. 10; Unwin, 2009; Wade, 2002)

Indeed the technological dependence from the technology-bearer characterising these so-called beneficiaries is not limited to the training and use of ICTs, but most often consolidates through the procurement of supplies necessary to operate, maintain and repair the new technological artefacts, the cost and availability of which may be beyond the capacities of the recipients (see

Sections 5.2.2). Without an adequate understanding of the inner workings of such devices, their recipients are likely to remain also psychologically dependent from the “missionaries of ICTs”, unless they proactively strive to conquer that knowledge, like Japan and Taiwan did since the 1960s and more recently South Korea, India and China (see Wade, 2002, pp. 450–451).

There seems to be something pseudo-religious (Son, 2004, p. 522) in the ironing out of such cognitive dissonances for preserving an idolised view of Technology, daughter of Science and grandchild of Reason — a *soteriology* (Ellul & Bromiley, 1990, p. 182). Indeed, this “*imperialism of instrumental reason*” (Weizenbaum, 1976, p. 259), so engrained in professed secularised societies, cannot be taken for granted in most instances where ICT4D projects are carried out: cultures shaped by different reasoning, with much less secularised worldviews (Avgerou, 2000; Van Stam, 2012b; Walsham & Sahay, 1999, pp. 49–51) — notwithstanding an increasing penetration of the technocratic mentality in these societies. In contrast, an intercultural approach encourages to question the deepest premises of this hegemonic mentality in order to understand the many failures in ICT4D (see Chapter 7). As an example, one of my first *culture bumps* (Archer, 1986, p. 171) when I arrived in Burundi was the realisation that the very perception of perpendicularity is contextual and cultural: if I can spot the slightest misalignment in my environment, it is because I was raised in an urban context, I live in a house full of square angles, and I was educated in geometry. Had I lived in rural Africa, my exposure to right angles would have been sparse and my perception of misalignment would be different. Conversely, I would probably have a better sense of direction even without a map or road signal (cf. Hutchins, 1995, pp. 65–93). Yet, this was not an immediate insight: instead, my instinctive reflex when recurrently faced with such ‘goofy’ misalignments, say in carpentry artefacts, was to think: “Poor Burundians, they’re so retarded: they can’t even build a proper square angle!”. Hutchins’ (1995) ethnography demonstrates how *cognition is a cultural process distributed across artefacts*. It is historically inscribed in them (Feenberg, 2009; Latour & Woolgar, 1979) and mediated by them (Cole, 1998; Mantovani, 1995, 2000, pp. 197–201) when performing *practices* (Bourdieu, 1990; Nicolini, 2009; Wenger, 1998) which are *situated*, that is contextually emergent (Irani *et al.*, 2010; Suchman, 1987, 2002). This social embeddedness perspective (Avgerou, 2008) collides squarely with an objectivist and instrumental view of technology that “*deworlds*” artefacts (Feenberg, 2009), abstracting them from their original

context. assuming that technological affordances remain the same across different contexts, almost independently of users. However, stripping the socio-technical complexity off a given artefact, such as ICTs, may speed up its installation, not its uptake (Heeks & Molla, 2009, p. 3; Peña-López, 2009). This often results in a lack of adoption, which in turn may lead to disappointment and consequently to negative judgements of the Other like in the perpendicularity example above.

When adopting an instrumental view of technology, related decisions are ruled by the supreme principle of technical efficiency perceived as universal and necessary, since it is rooted in a physicalist worldview. This approach not only undermines contextual sensitivity (Avgerou, 2008; Avgerou & Walsham, 2001; Van Stam, 2012a), but ends up subsuming human beings: “Modern societies are unique in deworlding human beings in order to subject them to technical action” (Feenberg, 2009, p. 33). However, “Human nature being what it is, while everyone likes to be a social engineer, few like to be the objects of social engineering” (Nandy, 1989a, p. 271), and ICT4D projects are no exception, as ComputerAid¹⁴ founder Tony Roberts (Roberts, 2012, no pagination) testified:

“In Zambia, as elsewhere in Africa, development is often done “at” rather than “with” local people by external “experts”. This technocratic approach to development often meets user resistance, and sometimes plain indifference, that ultimately compromises the success or “sustainability” of the project. In the face of such resistance external “experts” are often quite incredulous at the ingratitude of intended “beneficiaries” who they believe have failed to appreciate the enormous opportunity that they are missing.”

Besides the author’s call for a participatory approach, I wish to highlight the voluminous yet elusive load that a technology-moulded mindset is likely to carry and that is often taken for granted by their proponents, posing a serious ethical problem:

“It is an approach that elevates a particular, narrow, and partial perspective to a position of central importance, and then reframes other perspectives in relation to the dominant view. It is an approach that marginalizes alternative voices, that denies the agency and independent rationality of others, and that is blind to its own blinders.” (Dourish & Mainwaring, 2012, p. 139)

Indeed, in an exercise of symmetrical anthropology *à la* Latour (Latour & Muecke, 2007), Toyama (2010a, no pagination) points out that

“In the last four decades, the United States has undergone a boom in information and communication technology. The PC and cell phone were

¹⁴ Established in 1998, ComputerAid is a UK NGO that at the moment of writing had shipped more than 200.000 refurbished computers to underserved communities across the world — www.computeraid.org

invented; the Internet stormed onto the stage; and corporations such as Apple, Microsoft, Google, and Facebook penetrated every corner of our lives. If technology cured social ills, then we'd hope that during the golden age of innovation in a technologically advanced country, there would be some dip in the poverty rate. Yet in the same four decades, the rate of poverty in the United States stagnated at around 13 percent, embarrassingly high for the world's richest country. Either today's Americans have not prioritized poverty reduction, or the world's best technology is running as fast as it can just to keep us in place. If so much technology didn't dent poverty in America on its own, why do we expect anything more in countries with far less ability to capitalize on it?"

In summary, this section has illustrated a paradox in the mainstream ICT4D discourse: on the one hand *tech-idolatry* — a fetishist's trust (Best, 2010; Latour, 1996) in technology as having its proper power and agency magically to solve problems; on the other hand, soulless *technological determinism* (Chandler, 2002) — a tireless effort to craft the perfect algorithm to handle development issues by means of technical solutions. It is a paradox in that the physicalist worldview upon which technological determinism rests, holds perpetual motion as a myth, and yet tech-idolatry seems to entail precisely one such expectation: once installed, it will work forever, by itself, *stand-alone*. Thus ironically, tech-idolatry becomes the ultimate expression of technological determinism, on the very same continuum that has the human factor at the other extreme. This study investigates why this is so, focusing on the issues around the management of technology (maintenance, amortization, training) within the specific role-play enacted in a bilateral project. The following section elaborates on such issues in other ICT for Education initiatives.

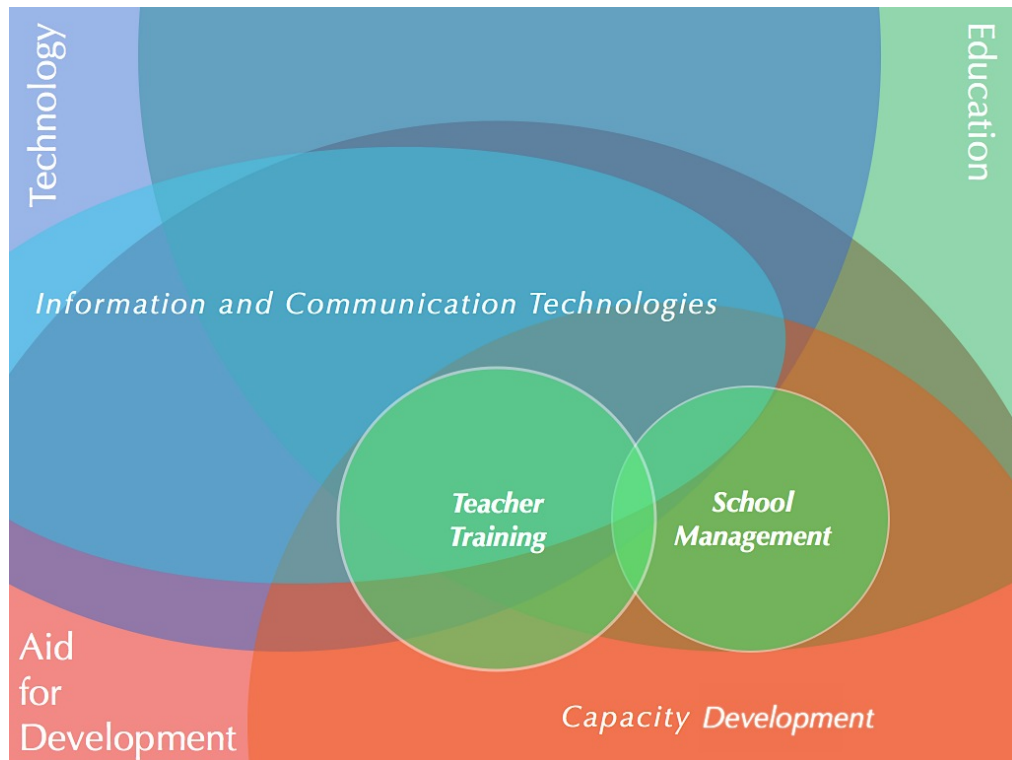
2.4 Close-up on ICT for Education (ICT4E)

This section addresses the issue of ICTs-related capacity development in the context of school education, examining the tensions arising when a mechanistic and an ecological worldviews come together.

Broadly speaking, my research is situated at the intersection between three themes: *Aid-for-Development*, *Technology* and *Education* (Figure 2.6). More specifically, it concerns a capacity development project aimed at enabling school teachers and administrators to set up and manage new ICTs facilities in the form of computer labs. The project does not involve mobile learning (via

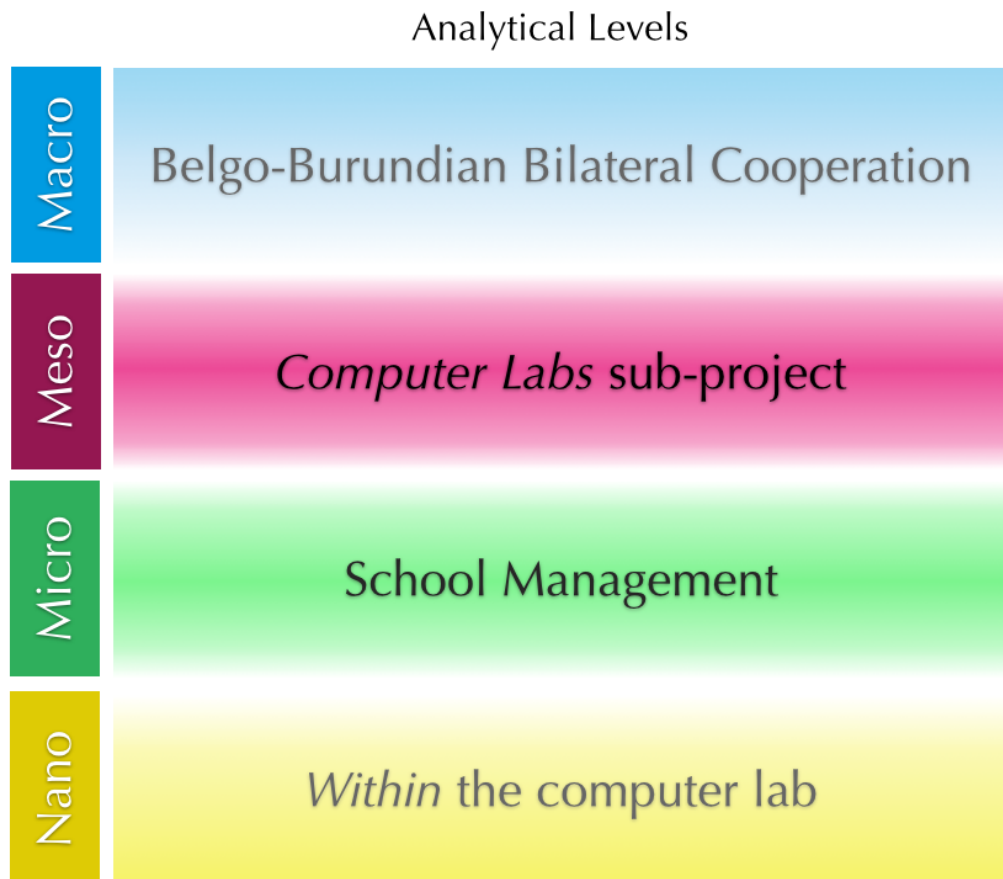
laptops, tablets or smartphones), distance learning, e-learning or Open Educational Resources (OER). Indeed, one of its fundamental challenges was that it dealt only briefly with the educational use of computer labs in class interactions (defined as nano level). This level thus remains tangential to the overall analysis. Predominantly, this study analyses the larger organisational context preceding and surrounding the educational practices occurring in the computer lab, within a given school ecosystem (micro level), and within the Computer Labs sub-project context at the national level (meso level). The context of bilateral cooperation between Belgium and Burundi (macro level) completes the analytical framework, yet it remains ancillary to the previous two levels, since I could not access stakeholders at that institutional level to co-generate significant data (Figure 2.7). Thus the choice of focusing my analysis on the *micro* and *meso* levels was largely opportunistic, given my organisational position as sub-project manager. However, the choice was also deliberate to the extent that most of the research in ICT for Education focuses on in-class use of technology (Dillenbourg, 2013; Goktas *et al.*, 2009; Nussbaum, 2011; Pawar *et al.*, 2006; Slay *et al.*, 2008). Less attention is given to consequences outside the classroom (Bills & Stanley, 2001; Cuban, 2001; Hawkins, 2002; Hollow, 2010; Li, 2007; Unwin, 2005b). Figure 2.8 presents a timeline that illustrates a selection of initiatives and institutional documents that I deemed particularly relevant to the *micro* and *meso* levels, as representatives of the mainstream institutional discourse of ICT for Education. Most of them share a large scale approach, however, such approaches are not necessarily systemic, nor *ecological*. A large scale approach tend to hold quantities in great consideration, but may incarnate a narrow, technocentric perspective, as illustrated in the following section.

Figure 2.6. Delimiting the scope of my research: an infographic of the relevant domains.



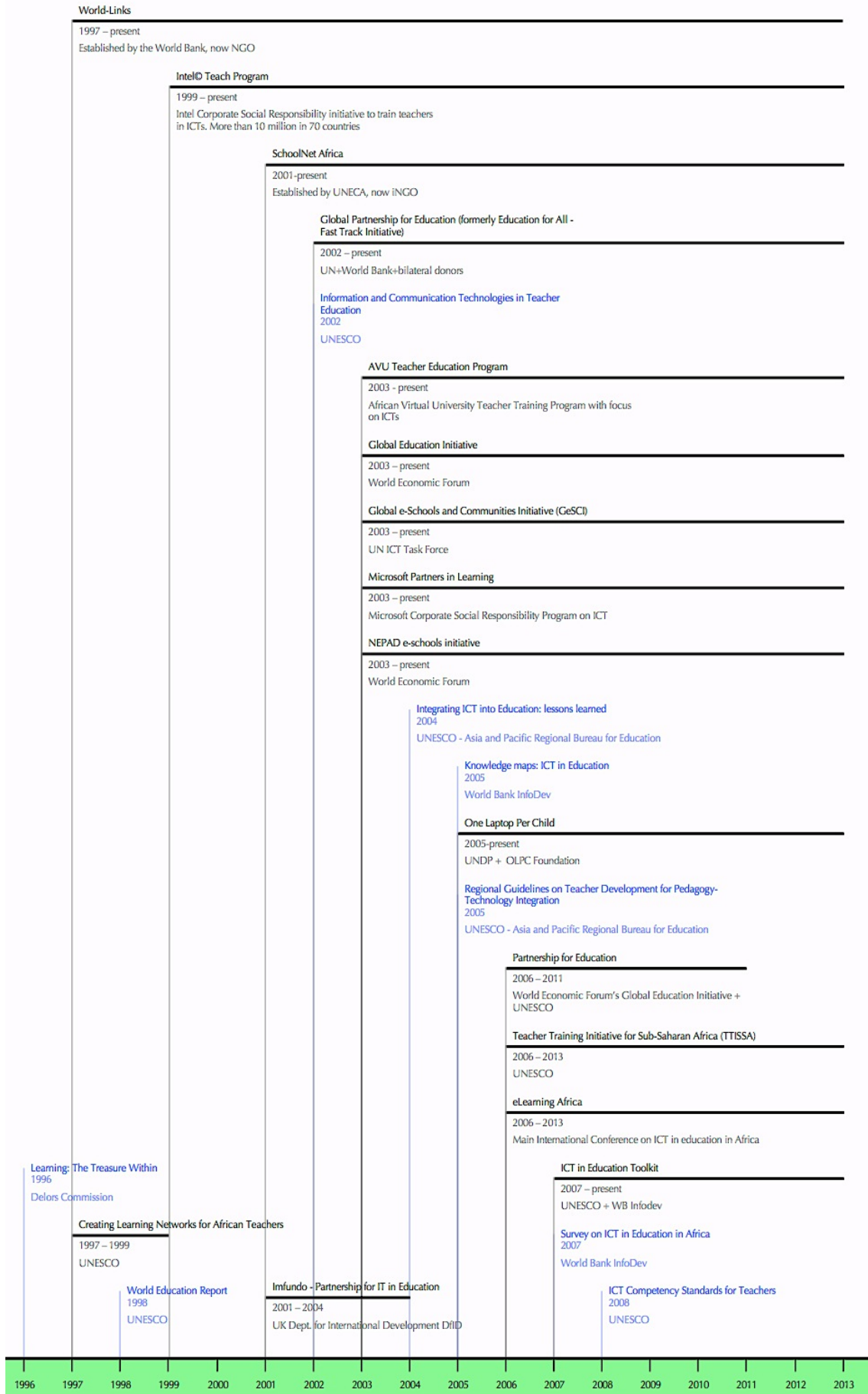
Source: Author.

Figure 2.7. Analytical levels adopted in this research.



Source: Author.

Figure 2.8. Landmark documents (blue) and main initiatives (black) related to ICTs and /in/ for Education.



Source: Author.

2.4.1 The *technological imperative* in education

In 2007 UNESCO, InfoDev and the Academy for Educational Development (AED) published the ICTs in Education Toolkit (<http://www.ictinedtoolkit.org/> — accessed 26.04.2014). Its curator stated the following (Haddad, 2007, no pagination):

“...educational authorities are under tremendous pressure to provide every classroom (if not every student) with technologies, including computers and their accessories and connectivity to the Internet. The pressures are coming from *vendors* who wish to sell the most advanced technologies, from parents who want to ensure that their children are not left behind in the technological revolution, businesses who want to replicate in schools the dramatic impact that ICTs have had in the worlds of commerce, business and entertainment, and from technology advocates who see ICTs as the latest hope to reform education.” (Italics mine)

Yet, as InfoDev's leading specialist in ICTs in Education Trucano (2009) explains:

“While impact on student achievement is still a matter of reasonable debate, a consensus seems to have formed that the introduction and use of ICTs in education can help promote and enable educational reform, and that ICTs is a useful tool to both motivate learning and promote greater efficiencies in education systems and practices.” (p. 63)

“Despite a lack of reliable impact evidence, recent infoDev surveys of ... ICTs use in education in Africa and the Caribbean, document tremendous growth in the use of — and demand for — ICTs in the education sector.” (p. 61)

Trucano's words capture the power of the *technological imperative* in education as a technocentric discourse revolving around the quest for best possible technological apparatus. The 100\$ XO laptop¹⁵, developed by the One Laptop Per Child (OLPC) association, is often seen as the most renowned icon of tech-idolatry in ICT4E. Since its launch in 2005, 3 million XO laptops units have been sold in 40 countries, mainly to ministries of education (Negroponte, 2014 — accessed 26.04.2014). The following statement supports this trend in technology acquisition:

“African Ministers of Education, meeting at the first African ministerial round table on ICTs for education, training, and development in Nairobi on June 1, 2007, stated in their communiqué that: “*ICTs are seen as one key solution that will allow African countries to meet the needs in rural and underserved areas and **bring education to their citizens rapidly and cost efficiently.***” They **also** resolved that hundreds of thousands of teachers require ICTs skills **to help achieve** this goal.” (Farrell & Isaacs, 2007a, p. 4) — emphasis in original, bold mine)

Central to this statement is a belief in the utility of ICTs as solutions that can

¹⁵ Which eventually costed \$490 according to the calculations made by OLPC News (http://www.olpcnews.com/sales_talk/price/490_per_xo_laptop_the_real_cos.html — accessed 25.07.2012)

bring education rapidly and cost efficiently, with the help of teachers instead of conceiving ICTs as part of an *emergent process* that is *brought about* by teachers with the help of technology (Unwin, 2005b). The emphasis is on speed and efficiency, and not on suitability for quality teaching and learning. In the same document, Ghana's Minister of Education declared at the opening of the first New Partnership for Africa's Development (NEPAD) *e-school* in Ghana that:

“The computer should no longer be seen as a glorified typewriter, but as a *tutor*, an organiser, a presentation *agent*, a search *agent*, a data processor, a remedial and e-learning interactive *agent*” (Farrell & Isaacs, 2007, p. 3, emphasis mine).

This notion is well beyond Actor-Network theorists' claim that everything that changes the state of affairs is an *actant*, be it human or non-human (Latour, 2005). *Tutor* and *agent* are anthropomorphic terms (Turkle, 2011), as if computers had an agency of their own, being so 'smart' that they could take care of themselves and of others. This resonates with Pal *et al.*'s (2009, p. 137) arguments where they reported a widespread belief among rural Indian parents that computers could autonomously *teach* their children.

2.4.2 An *ecological* approach to ICT4D/E

Both deterministic and anthropomorphic conceptions of computers are in stark contrast to an *ecological* approach. For example, the NEPAD e-schools (2003 - present¹⁶) started as a public-private partnership between 16 African governments and five consortia led by digital industry champions, namely Microsoft, Cisco, AMD, HP, and Oracle (<http://www.eafricacommission.org/projects/127/nepad-e-schools-initiative#4> — accessed 20.08.2014). Their main aim was “to equip more than 550,000 African schools with ICTs and connect them to the Internet by 2020.” (Farrell *et al.*, 2007, p. V). However, “The failure to actively include civil society organisations that have experience in introducing ICT in schools in Africa deprived the project of valuable support and resources in its initial phases.” (Farrell *et al.*, 2007, p. 2). Questioned about it, Isaacs (personal communication, 22.08.2014) explained:

“*Alas, the NEPAD e-Schools have been lying low for a while. Technically they still exist and operate from South Africa but nothing has been done since the*

¹⁶ Accessed on 20.08.2014, the NEPAD e-school most recent webpage dated 26.10.2010 (<http://www.nepad.org/video-gallery/nepad-e-school-initiative>). Similarly there is no trace of this initiative in the NEPAD 2013 annual report despite no official communication of its termination could be found.

Demo Project in 2007/8. (...) The South African government hosted the initiative but when a different group took political power in 2009, the initiative got less support. Short-termist thinking with no planning beyond the pilot\demo phase, and poor stakeholder and partner management, among others, are key influencing factors. (...) There was an element of commitment to partnership by the IT companies but they relied on stronger leadership by NEPAD which wasn't forthcoming. The IT companies also competed with each other and the role of national governments were erratic across the 16 countries. A complex partnership to manage and lead."

Her testimony stresses the crucial importance of an holistic approach, encompassing all stakeholders in a multi-stakeholder partnership with a strong leadership (Hosman, 2010; Unwin, 2005a).

Similarly, the OLPC initiative was pivoted around the provision of a technologically advanced device developed in the US, the XO laptop, to *pupils* in schools across the world. However there was with insufficient consideration for the complex interpersonal and institutional context surrounding them: teachers, schools administrators, superintendents, ministry officers, and also parents, technicians, suppliers, all higher than pupils in status and all interlinked by a set of established practices (Hollow, 2010; Vota, 2014).

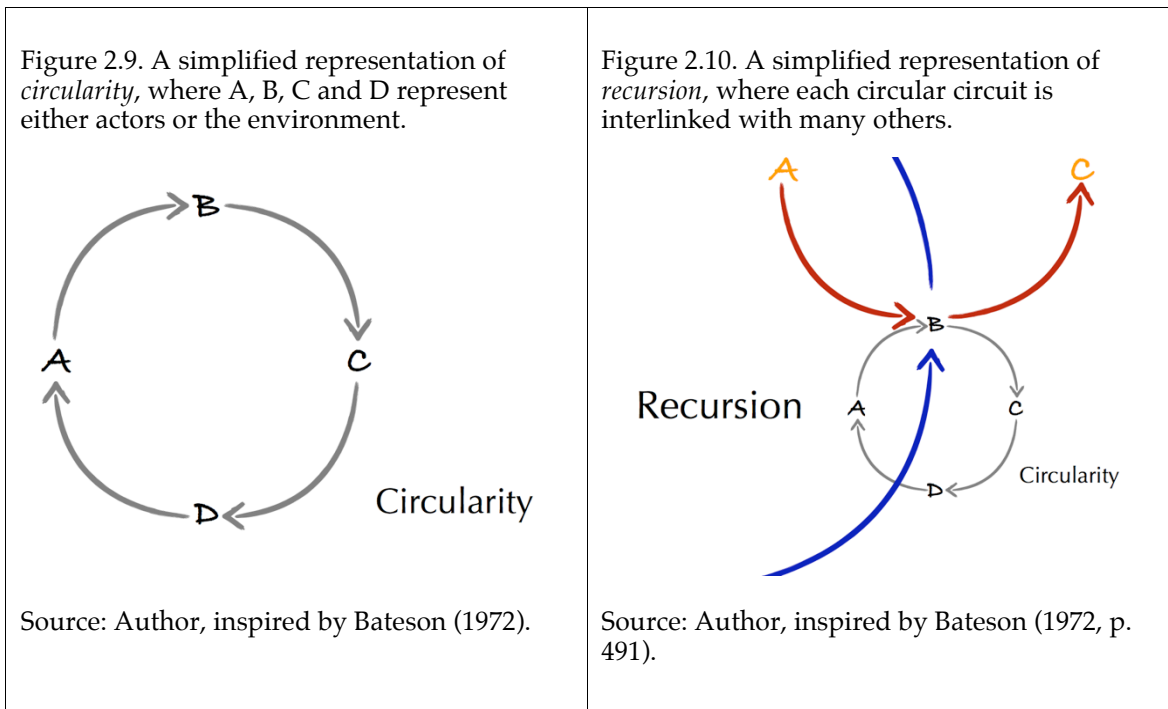
"Experience is proving, however, that acquiring the technologies themselves, no matter how hard and expensive, may be the easiest and cheapest element in a series of elements that ultimately could make these technologies sustainable or beneficial. Effectively integrating technology into educational systems is much more complicated. It involves a rigorous analysis of educational objectives and changes, a realistic understanding of the potential of technologies, a purposeful consideration of the pre- and co-requisites of effectiveness of ICTs for education, and the prospects of this process within the dynamics of educational change and reform." (Haddad, 2007, no pagination).

In opposition to the technological imperative mindset, my research espouses a *social embeddedness* approach (Avgerou, 2008, 2010; Latour, 2005; Mantovani, 1995) which I define *ecological* in that it strives to embed all stakeholders in their environment, conceived as an *ecosystem*. The increasing popularity of the term *ecosystem* associated with ICTs testifies a greater awareness of the systemic interrelationships that connect actors (citizens, companies, governments) and technological artefacts in complex networks (Open ePolicy Group, 2010). However, if fully embraced, the ecosystem metaphor implies a radical shift in the way technology is traditionally conceived, by implicitly rooting it in the world of the living — *creatura* — rather than in the mechanistic world of inanimate objects — *pleroma* — and brings their interconnectedness to the fore (Bateson, 1972, pp. 456–458). An ecological perspective implies the primacy of

two classes of relationships:

1. **The relationships between stakeholders**
2. **The relationships between them and their environment.**

According to so-called *second cybernetics* theorists (Bateson, 1972, 1979; Bateson & Donaldson, 1991; Manghi, 2004; Maturana & Varela, 1980; Watzlawick *et al.*, 1967), these two classes are separable only in abstraction, since the tangle of relationships connecting every element is characterised by *circularity* and *recursion*. Circularity in that any stakeholder's interaction with other stakeholders or with the environment will eventually influence back the initial actor (Figure 2.9). Recursion refers to the interconnectedness of a system with its subsystems, which also work circularly, influencing each other (Figure 2.10), so that each element is affecting the whole system in which is embedded.

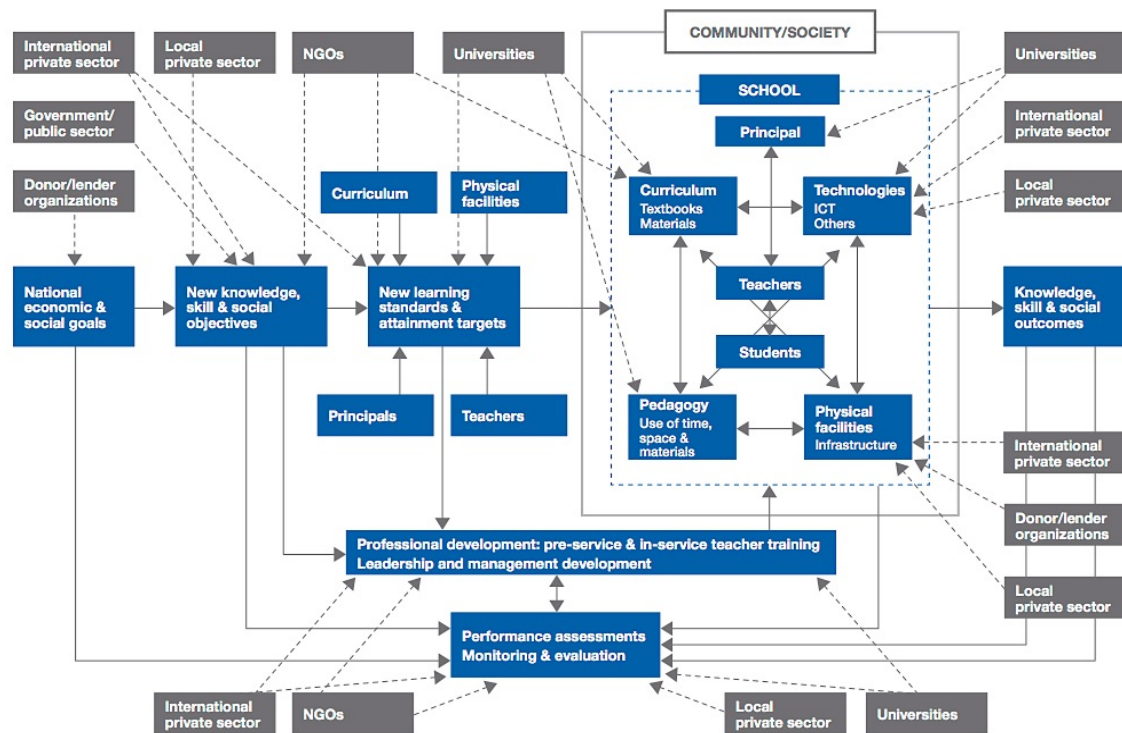


With an analogy, the meaning of a word is defined by its use in a specific sentence and vice versa: the meaning of that sentence is defined by the meaning of the single words it entails, circularly, emerging from the virtual interaction between the author, the intended audience and the actual reader. Yet the same applies recursively to sections, chapters, books, disciplines and ultimately the use of the word in that specific sentence contributes to redefine its shared meaning in the language thus influencing culture as well, however minimally.

For example, Cassidy's (Cassidy & Paksima, 2007, p. 23) analysis of the World Economic Forum's Global Education Initiative model of multi-stakeholder

partnership for education approximates this approach and depicts the remarkable complexity of an education system — or *ecosystem* in my terms (Figure 2.11). It indicates how each institutional stakeholder could contribute to its systemic change, and posits that a systemic approach is an indispensable success factor in any such reform (see also Haddad & Draxler, 2002; Jhurree, 2005).

Figure 2.11. Global Education Initiative model for a standards-based educational system change.



Source: (Cassidy & Paksima, 2007, p. 23).

I use the term *ecosystem* and not simply *system* for three reasons. First, *system* is a very generic term which can be referred to both inanimate objects and living beings, while *ecosystem* immediately evokes their interrelationship as *intrinsic* (Bateson, 1972, 1979; Manghi, 2004).

Second, technocentric, positivist, mechanistic epistemologies seem to be prevalent in the ICT4D discourse (Gomez, 2013) and ICT4E is no exception (Negroponte, 2007; Tinio, 2003; World Bank, 1998). In contrast, an ecological approach invokes a more *organic* view of ICTs (Brunello, 2010; Hosman, 2010; Marais, 2011) and of education (Robinson, 2009): to some extent, this is reminiscent of Chambers' (1995, p. 14, 2012, see Section 2.3) distinction of

“things versus people” approaches in Development interventions. These authors suggest to conceive stakeholders not as boxes in a squared model rooted in physicalism, but rather as *actors*, political beings striving for power and prestige or even for survival, exploiting the affordances available *in their context* — physical, socio-economic and cultural — thus leveraging or resisting ICTs as a way to preserve or gain status and agency (see Mansell, 2014). Indeed, much of the debate around ICTs in education revolves around teachers’ attitudes and motivations concerning their use (Avidov-Ungar & Eshet-Alkabay, 2011; Cantrell & Visser, 2011; Chigona *et al.*, 2010; Hennessy *et al.*, 2010; Li, 2007; Teo, 2009). South African scholars working in the field revealed the disparity between individual beliefs toward computer use and its *actual* use. Bladergroen *et al.* (2012, p. 112) report:

“The general view of the educators on ICTs was that it was beneficial; it makes their job easier, and eases access of knowledge to both learners and educators. Educators believed that ICTs will advance the literacy levels of their learners, allowing them to become independent thinkers.”

Despite such perceived enthusiasm, the actual use of ICTs was reported to be limited in these examples. Context-wise, the authors pointed to deficiencies such as lacking maintenance and technical support, strict managerial policies, lacking training and skills development, lack of funds and infrastructure (especially bandwidth), as well as frequent technical disruptions. In addition, the researchers suggested that openly to express “negativity regarding ICTs is perceived to be associated with ignorance and backwardness” (Brown, 2011, p. 197; cited in Bladergroen *et al.*, 2012, p. 116), thus shifting the focus onto the *symbolic value* of ICTs.

This introduces the third point: the word *ecosystem* brings to mind two key concepts: *sustainability* and *resilience*. The term sustainability has long become polysemic, exceeding *environmental* sustainability (Brundtland, 1987). In the Development context sustainability can be defined as *the continuation of the flow of benefits after the exogenous input of resources has ceased* (Unwin, 2009, p. 365; Mansell, 2014) — as it tends to happen after Aid projects close. However, tracing the boundary between endogenous and exogenous is in a very arbitrary exercise in an hyperconnected world (Van Zyl, 2013) which therefore calls for a *ecological* approach:

“Sustainability is the outcome of a mixture of endogenous and exogenous factors. When project sustainability is being considered the unit of analysis is always greater than the project itself and the actual scope and extent of the

system that is relevant to sustainability needs to be analysed.” (Marais, 2011, p. 109)

Similarly, in ecology resilience has been defined as “the persistence of relationships within a system” (Holling, 1973, p. 17) or more recently:

“The capacity of a system to absorb disturbance and reorganize while undergoing change so as to still retain essentially the same function, structure, identity, and feedbacks.” (Walker *et al.*, 2004, no pagination, first page)

This ‘roll-back effect’ occurs very often after Development projects officially end (Heeks, 2002, 2005b; Mosse, 2005). As Bladergroen and colleagues (2012) noted, resilience may indicate both a generalised lack of facilitating conditions at the infrastructural and organisational level, as well as a psychological tendency to deny such lack for cultural reasons:

“Ultimately, in the study of systems of social relations, and of meaning, we observe the emergence of a complex ecology. This is shaped both by technology and by diverse ‘cultures of use’ (Rantanen, 2006). This ecology is not reducible to binary human-computer interactions, but rather determined through intersecting practices (identities, culture, objects, actions, meanings). A complex ecology is then a fluid convergence of two intersecting systems: social relations, in which we detect interactive domains, individual ‘selves’, and interlinked actions; and social meanings, in which we detect culture, and evocative encounters. These are arranged along macro, meso, and micro contexts.” (Van Zyl, 2013, p. 154)

My research investigated further in this direction, adopting the term ecology *sensu lato* in virtue of such a semantic potency. It includes social relations and social meanings, and enquired into the gaps between the shared aspiration to have a computer laboratory installed in the schools (*ex ante*), the frequent underuse of such a facility once actually installed, and the apparently paradoxical demand for more facilities (*ex post*). This is condensed in the final research question:

***RQt₄*: Why do school computer laboratories set up in the sub-project often remain unused, even though all stakeholders agree that they are indispensable?**

This question can be split into two sub-questions:

1. *Why do school computer labs often remain unused?*
2. *Why does the demand for computer labs remains strong, especially amongst Burundians, despite their underuse?*

2.4.3 Why do school computer laboratories often remain unused?

“All too often, computer laboratories in educational institutions across Africa are underutilized.” (Unwin, 2005b, p. 127)

Several scholars have grappled with this issue, both in *thick-tech* (Bingimlas, 2009; Cuban, 1986, 2001; Jones, 2004; Law & Pelgrum, 2008) and *thin-tech* countries (Cantrell & Visser, 2011; Chigona *et al.*, 2010; Cossa & Cronjé, 2004; Hennessy *et al.*, 2010; Hollow, 2010; Hosman, 2010; Mbangwana, 2008; Shields, 2011; Touré *et al.*, 2008). The large-scale Second International Information Technology in Education Study (SITES 2006) on pedagogy and ICTs use across 22 countries (Law & Pelgrum, 2008, p. 276) identified three key factors for the effective integration of ICTs at the school level, namely *institutional, technical and pedagogical support*:

“The most important school-level factors influencing teachers ICTs-use for lifelong-learning practices are the **vision** that principals have in regard to ICTs-use supportive of lifelong-learning pedagogy and the **technical and pedagogical support** available to teachers and students.” (bold mine)

However, none of the 22 countries in this study ranked very low in the HDI and NRI indices, while in 2013, Burundi was ranked 178th and last (144th) respectively (UNDP, 2013; Bilbao-Osorio *et al.*, 2013). Bingimlas’ (2009, p. 243) recent meta-analysis is particularly relevant as it distilled widely acknowledged barriers and made recommendations both at the *teacher* and *school* level. The study mirrors the *nano/micro* distinction adopted here. It was therefore selected as a comparative framework to address the research sub-question in point. Table 2.1 summarises his reflections. Bingimlas (2009, p. 242) underlines that

“(…) there are complex relationships among the barriers. For example, lack of technical support, time, and training can lead to technical problems, which can in turn lead to a lack of access to ICTs resources and a lack of teachers' competence. This can lead to teachers lacking confidence and influence their motivation.”

He stresses the *interconnectedness* of such barriers and the need for a systemic approach. Though rich, Bingimlas’ meta-analysis was based on literature in technologically advanced countries and therefore leaves out many of the problems that surfaced in my own case study. Indeed these barriers apply to African education systems as well, yet most often they are even more defiant (Cantrell & Visser, 2011; Cossa & Cronjé, 2004; Mbangwana, 2008).

Table 2.1. Possible implications for schools and teachers for the integration of ICTs in Education.

Barriers	For schools	For teachers
<i>Lack of access</i>	- Providing ICTs resources, including hardware and software	- Taking advantage of resources offered at schools - Access to ICTs resources at home
<i>Resistance to change</i>	- Training on new pedagogical approaches	- Being open minded towards new ways of teaching
<i>Lack of time</i>	- Providing sufficient time: reducing the number of teacher lessons or increasing the daily lesson time	- Acquiring skills of self-organisation and time management
<i>Lack of training</i>	- Providing training courses in dealing with new devices, modern technologies, and pedagogical approaches	- Preparing themselves (pre-service) by self- training - Taking up opportunities for training offered at schools - Knowing how to access resources
<i>Lack of technical support</i>	- Providing continued technical support	- Relying on themselves to be able to solve problems in their use of ICTs - Accessing available support

Source: Bingimlas, 2009, p. 243.

Kozma and Vota (2014, p. 889) list six key challenges to ICTs implementation in schools in so-called developing countries:

- “Deploying ICT infrastructure
- Maintaining systems at the school level
- Training teachers on the usage of ICT in the classroom
- Developing relevant content
- **Leveraging community inclusion to expand impact and sustainability** (bold mine)
- Covering the total cost of ownership of ICTs.”

These authors enlarged the scope of analysis by including the community (see also Ale & Chib, 2011), however most African schools face even wider systemic issues (Cossa & Cronjé, 2004; Mulkeen *et al.*, 2007), such as :

1. Poor infrastructure — ICTs being but one kind: e.g. decaying buildings, lack of clean running water, overcrowded dormitories, sudden power cuts, unreliable Internet connection, computer laboratories composed of different models of refurbished computers.
2. Overcrowded classrooms.
3. Low salaries for teachers, absenteeism and bribery (Cossa & Cronjé, 2004).

4. Lack of professional development initiatives for teachers and school administrators.

From an ecological perspective, these contextual factors are crucial and cannot be left out of the picture, as it often occurs in the literature on ICT4E, which is still very technology-centred, with much of the debate revolving around the pupil-to-device ratio (see Kozma & Vota, 2014; Trucano, 2014a; Vota, 2014), mobiles and smartphones for Development (Trucano, 2014b; Wicander, 2011; Winters, 2013; Winters *et al.*, 2010). These are technical concerns addressing but a fraction of a systemic problem (Laurillard, 2008, p. 139):

“Education has problems. Technology has solutions looking for problems. The two should fit...but the solutions technology brings...are solutions to problems education does not have.”

Thus, there are mismatches between ICTs proponents' priorities and expectations and the ecosystem in which they are supposed to be integrated. In this study, the barriers to ICTs uptake are conceptualised through an *archaeology of critical incidents*, that is by 'reverse engineering' such puzzling mismatches so has to unearth their implicit premises, in ethnomethodological fashion (Coulon, 1987; Garfinkel, 1967). They are used as a stepping stone to address the second sub-question (b.).

2.4.4 Why does the demand for computer labs remains strong, especially amongst Burundians, despite their underuse?

By unearthing the varying premises held by different stakeholders, this study aims to unveil the symbolic dimension of ICTs, beyond their instrumental value. This dimension is inherently cultural. An ethnographic approach frames the inclination to use ICTs not in terms of internal dispositions of the person (*variables*), but as a function of the changes ICTs provoke within the school ecosystem. It considers how self-perception is affected by the use or non-use of ICTs with respect to the main interlocutors in the social network of individuals. For example, much research on barriers to ICTs uptake in education in technologically advanced countries report the anxiogenic effect of computers on teachers' self-confidence. This is because pupils tend to be quicker to learn and often become more proficient than them. They also live under the constant threat that technical glitches could compromise the lesson and embarrass them in front of their pupils, diminishing their social status (Cuban, 2001; Dillenbourg *et al.*, 2013, p. 2; Li, 2007).

The aspirational value of ICTs

The symbolic value of ICTs is ambivalent: while it may be perceived as threatening to one's status, it can also boost it. ICTs exhibit a halo of modernity, and become a "marker of modernity", or of "being developed" (Mercer, 2006, p. 245). Appadurai (2004) defines aspiration as a *capacity*, that is, the capability to project oneself in a better future and to identify the pathways towards it. Drawing on this premise, Ray and Kuryian (2010) suggest that ICTs can enhance such capacity and, if properly operationalized, could be used as a prospective Development indicator for thin-tech countries. In contrast, Hollow (2010) and Pal (2012; Pal *et al.*, 2009) contested that a wide gap could persist between the mere aspiration to a better life by means of ICTs, and the actual effort to identify those pathways by learning how to use ICTs:

"Appadurai's (2004) assertion that the ability to aspire is an inherent good because it is synonymous with the ability to make things happen seems to be misplaced. Aspiration does not necessarily translate into an increased ability to instigate change. In fact, within the context of ICTs, the aspiration could be viewed as potentially delusional because the symbol enables people to believe that they are connecting with the development they desire, without necessarily understanding the underlying substance that sustains it [introducing capitalism]." (Hollow, 2010, p. 336)

Using the OLPC project as an example, Hollow (2010) showed that such beliefs "can lead swiftly to marginalising reflection, self-criticism and ultimately monitoring and evaluation" (p. 337). Chapter 8 explores these concepts of modernity and their association to upward mobility (Kuriyan & Kitner, 2009, p. 25; Pal, 2008). In their study of pre-service South African teachers, Sabiescu *et al.* (2013) identified four overlapping meanings attached to ICTs:

1. A tool
2. An empowering tool
3. A status symbol
4. A marker of innovation.

However, respondents in their research were trainees who voluntarily participated in a digital story telling workshop and were therefore considered ICTs 'partisans'. In contrast, Medhi *et al.* (2006) acknowledge that computers can generate fear and mistrust in novice users and be experienced as *disempowering* (Bladergroen *et al.*, 2012). This tension between the perceptions of Europeans and Burundians involved in the Computer Labs sub-project was explored by taking into account their different cultural backgrounds (see

Chapter 7).

The following section frames the issues related to intercultural communication in Development, and in particular ICT4E projects.

2.5 Developing an intercultural approach

This chapter has thus far stressed the remarkable potential of an idiographic approach to understanding the roles of technology in education that considers the contexts of interventions (Pettigrew, 1990, p. 78), beyond *technocentrism* (Avgerou, 2000; Avgerou & Walsham, 2001; Chandler, 2002; Feenberg, 2009). The following section clarifies the relationship between context and culture as a necessary step towards an intercultural approach.

2.5.1 On culture

““Culture” is certainly one of the more contentious and complex words in our lexicon. Like the term “force” to a physicist or “life” to a biologist, or even “god” to a theologian, “culture” to the ethnographer is multivocal, highly ambiguous, shape-shifting, and difficult if not impossible to pin down. When put into use, contradictions abound. (...) Certainly the view of culture as an integrated, shared system of interlocking ideas, routines, signs, and values passed on more or less seamlessly from generation to generation has withered away (thankfully) as have most notions of communities, states, villages, organizations, or social groups generally as tightly bound “cultural islands” and the evolutionary theories of culture generated by such notions. But (...) In terms of understanding how things get done by people on the ground in the social worlds we are — or become — familiar with, culture and the meaning-making and remaking processes associated with the concept, however trimmed down and inevitably flawed, still seem to me indispensable. (Van Maanen, 2011, p. 154).

This definition of culture as elusive, fluid and never fully graspable resonates with Geertz’s (1973, p. 4) concept:

“The concept of culture I espouse (...) is essentially a semiotic one. Believing, with Max Weber, that man is an animal suspended in webs of significance he himself has spun, I take culture to be those webs, and the analysis of it to be therefore not *an experimental science* in search of law but an interpretive one in search of meaning.” [italic mine]

Both authors offer a semiotic definition of culture, inherently open and contextually emergent. Many cross-cultural psychologists attempted to build “an experimental science”. Hofstede’s (1980) seminal *Culture’s consequences: International differences in work-related values* distilled a set of four cultural dimensions: *power distance, uncertainty avoidance, collectivism versus individualism, feminine versus masculine societies*. Later, a fifth dimension was added: *long term*

versus short term orientation (Hofstede, 1991). Though very popular, his approach has been criticised to be overly simplistic since it assumes that:

1. Cultures are bounded to national frontiers while globalisation has long trespassed them resulting in pervasive cultural hybridisation, much quicker than the static idea of cultures evoked by Hofstede's dimensions. Therefore cultures cannot be classifiable as a function of nationality (Saint-Jacques, 2011).
2. These cultural dimensions prime over individuals' inclinations when it comes to explaining behaviour, thus underestimating the contextuality of action (Kim *et al.*, 1996).
3. Culture can be 'captured' by surveying individuals, whereas "culture is not an attribute of a person, nor the mean value of an aggregate of individuals" (Chirkov *et al.*, 2005, p. 473).
4. Cross-cultural studies using questionnaires more often than not are based on college students, thus questioning their representativeness (Visser *et al.*, 2000; cited in Saint-Jacques, 2011, p. 47).
5. Surveys and Likert scales like those used to preform the said inquiry, are culturally neutral as if the inquirer could act from a culture-less standpoint (Mantovani, 2000, 2007).

Triandis (2000, p. 146) defines culture as "a shared meaning system, found among those who speak a particular language dialect, during a specific historic period, and in a definable geographic region" and similar to Hofstede, adopted an objectivist methodology to study culture, aimed at identifying and measuring its dimensions. Epistemologically, these approaches are radically different: ethnographers like Van Maanen and Geertz espouse a constructionist epistemology and use qualitative methods, whereas scholars like Hofstede and Triandis lean towards objectivism and use quantitative methods (see Chapter 4). However, social studies of science (Kuhn, 1962; Latour, 1987; Latour & Woolgar, 1979) have long contested positivists' aspirations for an ahistorical, acontextual and acultural epistemology (see also Pettigrew, 1990, p. 78 for a similar critique in organisation sciences). Thus, if one adopts a constructionist stance, positivism is but one (*trans*)culture shared by a bounded, though transnational, community of scholars to make sense of the flow of experience (*reality*). Therefore, if one discounts its hegemonic claim of universality, its

semiotic and pragmatic values for that community are preserved. Seconding Goles and Hirschheim (2000, p. 261) and Van Zyl (Submitted, under review), I suggest that instead of engaging in a war of paradigms, it may be more fruitful to place scholars studying culture on a continuum according to their preference for an *idiographic* approach, focussing on specificities versus a *nomothetic* approach, emphasising on the common denominators. Their insights could be then reconciled pragmatically by considering the *level of granularity* adopted by the enquirer and her/his intention. In this research, I moved my lens across these levels in order to account for the specific organisational culture of the AESTP project (idiographically) as well as for the larger intercultural matrix embedding it (nomothetically) (Lincoln & Guba, 1985). Theoretically, these levels can be intended as a hierarchy of contexts and meta-contexts. Human beings segment the flow of experience by activating different interactional repertoires as a function of the *context markers* (Bateson, 1972, p. 287; see also Watzlawick *et al.*, 1967) they detected and selected in order to perform an appropriate interaction. With Gumperz (Gumperz, 1992a, p. 230), *contextualisation* refers

“...to speakers' and listeners' use of verbal and nonverbal signs to relate what is said at any one time and in anyone place to knowledge acquired through past experience, in order to retrieve the presuppositions they must rely on to maintain conversational involvement and assess what is intended.”

In addition, Harré (1993, p. 67), drawing on Grice (1989), further stressed the recursive nature of sense making in interaction:

“The meaning of your action for me is what I believe you intend by it.

The meaning of your action for you is not only what you intend by it but what you believe I will believe you intend by it.”

This echoes Goffman's (1974) conceptualisation of *frame*, as the contingent *world of reference* interactants tacitly agree upon to *perform* together. In light of these concepts, intercultural relationships are problematic precisely because people from different cultural backgrounds during their upbringing have developed different ways of contextualising (Vygotskij, 2010) to preserve interactional coherence. On these grounds, I define *culture as contexts that travel*: we carry with us our distinct way of segmenting and structuring the flow of experience in contexts and meta-contexts so as to orient ourselves through them and interact appropriately, since it is the *context* that makes the *content* of an interaction meaningful (Watzlawick *et al.*, 1967).

The greater the differences in cultural background, the higher the risk of

rupture of the interactional frame, leading to misunderstanding, clumsy interaction, embarrassment, disappointment or even resentment (Sclavi, 2003). According to Bakhtin (cited in Morson & Emerson, 1990, p. 283; see also Ghilardi, 2012, pp. 97–102) it is precisely at the encounter with the Other, *on the boundaries*, that culture manifests itself as *difference*:

“One must not imagine the realm of culture as some sort of spatial whole having boundaries but also having internal territory. The realm of culture has no internal territory: it is entirely distributed along the boundaries. Boundaries pass everywhere, through its every aspect. Every cultural act lives essentially on the boundaries: in this is its seriousness and significance. Abstracted from boundaries it loses its soil, it becomes empty, arrogant, it degenerates and dies.”

The next section problematizes the complexity of intercultural encounters, drawing on the research of intercultural communication, later to apply it to Development interventions, which are almost invariably intercultural.

2.6 Applied intercultural communication

According to Samovar *et al.* (2011a, p. 8) a core interest of intercultural communication research is to understand how people can perform a coordinated interaction and develop satisfying collaboration even when they *do not* share the same cultural background. As Goffman (1959, 1974 ch. 10) has eloquently illustrated using the dramaturgical metaphor, people go to great lengths in everyday life to avoid the anxiety caused by interactional anomie: as soon as the shared frame breaks, actors attempt to restore coherence by drawing on their repertoire of frames and roles. Similarly, researchers in social psychology have shown that the less people know about a new situation and/or an unknown interlocutor, the more they tend to rely on *heuristics* to compensate for their lack of knowledge, as the best available option to behave appropriately (Gilbert & Malone, 1995; Hewstone, 1989; Kahneman *et al.*, 1982; Navarro & Lopez De Arechavaleta, 2010; Zamperini, 1993). Common heuristics are *stereotypes* and *prejudices*. Holliday *et al.* (2004, p. 24) defines stereotypes as oversimplified characterisations of the foreign ‘Other’. Martin and Nakayama (2010, p. 207) define prejudice as the moral judgement attached to stereotypes, often based on little or no experience. Psychologically, such heuristics are considered cognitive shortcuts to ‘fill the blanks’ and reduce interaction anxiety (Sclavi, 2003, pp. 42–50), prevent embarrassment and save face (Beach, 1990; Ting-Toomey, 2005). Indeed, the need to avoid embarrassment and save face has been observed across cultures (Martin & Nakayama, 2010, p. 436).

According to Gudykunst's (1985, 2005) Anxiety and Uncertainty Management (AUM) theory, the reduction of uncertainty is interactants' main concern in intercultural encounters. For heuristics to work against interactional anxiety though, their users must remain unaware that they are but *guesswork*; thus, they tend to be overconfident about their reliability (Navarro & Lopez De Arechavaleta, 2010). If such a frame crystallises over time becoming a bias, it will hinder honest self-expression and recognition of each other's humanity for the sake of interactional predictability. In Holliday *et al.*'s term (2004, p. 24), "Otherization [is] the reduction of the foreign Other to less than what they are". This will distort the interpersonal relationship and collaboration will suffer (Kealey, 1990, 2001; Kealey & Protheroe, 1995). Furthermore, according to AUM theorists, if intercultural anxiety is too high, interaction avoidance is the most likely strategy (Duronto *et al.*, 2005, p. 551). If avoidance is not possible, interaction and communication will be minimised (*ibidem*, 557). In contrast, "Attributional confidence, as the opposite of uncertainty, leads to feelings of trust and predictability, which enhance the motivation to communicate" (*ibidem*, 551). Positivist in its approach, AUM theory is based on the reduction of the complexity of an intercultural dealing to few key variables analysed through questionnaires. However, the need to reduce uncertainty and embarrassment has also been explored in ethnographic accounts (Sclavi, 2003, p. 47) and where possible in my data as well. Out of this constant interplay between my experience, my observations, and perspectives in the academic literature, my theoretical framework evolved to explore these dynamics in the context of Development initiatives.

2.6.1 Intercultural issues in Development practice

According to Ward *et al.* (2001, p. 245),

"There is now sufficient evidence, accumulated over several decades, to suggest that most people who cross cultures would benefit from some kind of systematic preparation and training to assist them in coping with culture-contact induced stress. Simply dropping culture travellers in at the deep end after some limited introductory information sessions can be costly, both in financial and personal terms."

Yet, expatriates working in cooperation projects are often deployed with little or no preparation and support to develop intercultural communication competencies beyond self-directed trial and **error** (although this varies across Development agencies and projects). They muddle through *culture shock*:

“(…) a set of emotional reactions to the loss of perceptual reinforcements from one's own culture, to new cultural stimuli which have little or no meaning, and to the misunderstanding of new and diverse experiences” (Adler, 1975, p. 13).

Studies on culture shock abound (see Table 2.2 — (see also Furnham & Bochner, 1986; Furnham, 2010; Archer, 1986), but have focused on international student exchanges (House, 2003; Pedersen, 1995), overseas business executives (Shapiro *et al.*, 2008), and immigrants and refugees (Martin & Nakayama, 2010; Ward *et al.*, 2001). There seems to be a paucity of research on Development expatriates (Kealey, 1989, 1990, 2001).

Table 2.2. Stages of cultural adjustment.

Author	Stage 1	Stage 2	Stage 3	Stage 4
<i>Oberg 1954, 1960</i>	Incubation	Crisis	Recovery	Full Recovery
<i>Lysgaard 1955</i>	Spectator	Crisis	Coming to Terms	Regained Adjustment
<i>Smalley 1963</i>	Fascination	Hostility/Frustration	Adjustment	Biculturalism
<i>Gullahom and Gullahom 1963</i>	Excitement	Disillusionment	Confusion	Positive Adjustment
<i>Ex 1966</i>	Uprooting	Frustration	Habituation	Restoration
<i>Lifton 1969</i>	Confrontation	Emptying	Reordering	Renewal
<i>Rhinesmith and Hoopes 1970</i>	Arrival	Unfreezing	Moving	Refreezing
<i>Pfister-Ammende 1973</i>	Transplantation	Uprooting	Resettlement	Adjustment
<i>Curle 1973</i>	Separation	Trauma/Shock	Reconnection	Adjustment
<i>Richardson 1974</i>	Elation	Depression	Recovery	Acculturation
<i>Adler 1975</i>	Contact	Disintegration	Reintegration	Autonomy
<i>Klein 1977</i>	Spectator	Stress	Coming to Terms	Decision
<i>Kealey 1978</i>	Exploration	Frustration	Coping	Adjustment
<i>Harris and Moran 1979</i>	Awareness	Rage	Introspection	Integration
<i>Kohls 1979</i>	Initial Euphoria	Hostility	Gradual Adjustment	Adaptation
<i>Hertz 1981</i>	Arrival	Impact	Rebound	Coping
<i>Furnham and Bochner 1982</i>	Elation/Optimism	Frustration	Confusion	Confidence/Satisfaction
<i>Zwinghamm and Gunn 1983</i>	Impact/Uprooting	Loss	Recovery	Reaction
<i>Berry 1985, 1985b</i>	Honeymoon/Contact	Conflict	Identity Crisis	Adaptations

Source: Zapf (1991, p. 108).

My research contributes to fill this gap between the literature of intercultural communication and Development studies. Development *expatriates* are distinct in that they hold an explicit mandate to intervene and change their hosts' mentality for the better: to get them out of poverty, to educate them, to heal them, to put them on the 'Progress escalator' using technology — such is the dominant mindset among *developers* (Apthorpe, 2011, p. 205). They constitute an foreign elite striving to convert the indigenous majority to their credo (Rist,

2009; Simon, 2003, p. 17). Consequently, they are exposed to culture shock stress:

“Without the normal props of one’s own culture there is unpredictability, helplessness, a threat to self-esteem, and a general feeling of “walking on ice” — all of which are stress producing.” (Barna, 1983, pp. 42-43).

For Development expatriates, acculturation (Berry & Sam, 1997, pp. 293–294) is unappealing. In order to step across their cultural web and become entangled in their interlocutors’, they must first accept relinquish their privileged position, at least for a while. This implies:

1. Trading their luxurious leisure for the lifestyle constraints of their local counterparts.
2. Renouncing to their missionary-like mandate, assuming an attitude of mutual learning, of exchange between peers.
3. Putting the relationship with their fellow expatriates at stake, as Kealey’s (2001, p. 22) extensive research on Canadian Development workers reports:

“Faced with these difficulties, many advisors shrink from the task [of intercultural integration], seeking solace in the company of other Canadians and the “expatriate ghetto.” Those who do accept the challenge are often faced with the additional obstacle of alienation from the Canadian community, which may see the effective advisor as a reproach to their own lack of involvement.”

According to Kealey’s study, cultural *separation* appears to be the most common reaction (Duronto *et al.*, 2005; p. 28 - see also Giordano, 2008, pp. 166–167). Ethnographic accounts from Development professionals confirm this kind of parochialism (Harper, 2011; Mosse, 2011; Rajak & Stirrat, 2011). Separation is a self-defensive coping strategy, based on discomfort avoidance. One leaves in the morning for a day at work on the slippery and treacherous ice of intercultural communication, to retreat in the evening to the safe shores of one’s own culture, to find peer solidarity, reinforcement, and support for *postjudices* (*postjugés*) — the otherising beliefs originated by the illusion of knowing the Other well, by cherry-picking prejudice-confirming evidence from experience (Demorgon *et al.*, 2010, pp. 3–4). Furthermore, a colonial past offers a rich repertoire for such narratives and thus may well strengthen this cultural polarisation (Rajak & Stirrat, 2011, p. 172):

“The expatriates experience the world they live in as a world of confusion (or of complex hybridity) where there are no dear lines of demarcation between us and them or, more importantly perhaps, between modernity and tradition.

Given that to a great extent the development industry is premised on a distinction between the 'developed' and the 'underdeveloped', anything that threatens this distinction threatens the position of the development professional."

2.6.2 Critical incidents

Thus far, I have problematized the use of heuristics (stereotypes, prejudice and generalisation) in intercultural encounters. I argued that the physical proximity between European Development workers and Burundians does not imply any intercultural integration. In light of these arguments, I now turn to *critical incidents*, which are the keystone of my analytical chapters (5, 6, 7 and 8).

The critical incident construct I adopt is inspired by Pedersen's (1995, pp. 15–16) who referred to situations perceived as extraordinary and therefore surprising by American exchange students dealing with their foreign hosts. His definition resonates with Archer's (1986, p. 171) *culture bump*:

"A culture bump occurs when an individual has expectations of one behavior and gets something completely different. The unexpected behaviour can be negative (...) or neutral (...) or positive (...). Unlike culture shock, which extends over an extended period of time, culture bumps are instantaneous, usually over within minutes or even seconds, though the effect can be long-lasting, and can occur any time one is in contact with another culture."

My definition draws on both these authors: *a critical incident is a puzzling mismatch of expectations that has significant consequences on interpersonal relationships, and ultimately on the project outcomes*. Thus, a critical incident is not an accident 'in the world' (e.g. A PC hard drive suddenly fails), but the subjective psychological experience of puzzlement that occurs when an interactional frame breaks – in other words, when 'I' realise that what 'I' was taking for granted (e.g. when a hard drive fails it must be replaced) is not shared by my interactant (e.g. when a hard drive fails we stop using that PC) and therefore cannot be taken for granted (Agar, 1994, p. 232; Goffman, 1974). This implies that 'I' can no longer assume that 'we' are playing the same game (Bateson, 1956; Watzlawick *et al.*, 1967; Wittgenstein, 1953). This mismatch of expectations questions not only my worldview, but also my capacity to judge whether 'we' share the same worldview. It challenges my self-confidence concerning my relationship with 'the world' and most importantly my trust in the type of relationship 'I' share with my interlocutor. Furthermore, the more 'I' rely on my spontaneous frame, the stronger these effects. More uncertainty equals less predictability. Thus, the more one relies on planning as a management strategy, as is the case in most 'Western'er-led Development

initiatives (Easterly, 2007; Heeks, 2002; Walton & Heeks, 2011), the more vulnerable one is likely to be to this interactional anxiety. In his research in a South African village, Krauss (2013, p. 9) reported an African informant's sharp comment:

“(...) what ‘Western’ers do not understand is often considered a problem by ‘Western’ers”.

Thus, at the other hand of the cooperation relationship, African interlocutors are less likely to hold predictability and planning in such high consideration. While this is a general observation that applies across all intercultural Development interventions, those embedding a strong technological component, like this case study, are even more exposed to such misalignments since the command-and-control logic is *inscribed* in technological artefacts, and therefore it intensifies puzzlement when they do not work as expected (see Section 2.3). Moreover, in thin-tech countries digital technologies are rare and hardly accessible, therefore unfamiliar and often fantasised. This widens the *fault* across the supposedly common ground implied by the *technological imperative* rhetoric. Through this research I first developed an interpretive framework to reverse-engineer critical incidents so as to discover their implicit premises (Sections 4.6.3 and 5.3). Building on the outcomes of its application, I then conceived another interpretive framework, called SBIZO (Stop, Breathe In, Zoom Out), to account for the different strategies adopted by European and African stakeholders to cope with critical incidents, and for their consequences. Such framework and its theoretical underpinnings are presented in Chapters 6 and 7.

Discussion

These reflections support Berry's (1992) model of migrant-host relationships, which predicts that whenever migrants value their own culture and devalue that of their hosts, they tend to separate (Table 2.3).

Table 2.3. Migrant-host relationship.

	Migrants value host/ majority culture	Migrants devalue host/ majority culture
Migrants devalue own/minority culture	Assimilation	Marginalization
Migrants value own/ minority culture	Integration	<i>Separation</i>

Source: adapted from Berry (1992, p. 238).

This model fits Kealey's (2001, p. IV) findings: his study concludes that such isolation acts as a barrier to establishing cooperative and effective working relationships with local counterparts. This can impede skills and knowledge transfer:

“Although one's intercultural skills do not in themselves guarantee success in a global venture, without them success working in another culture is virtually impossible.”

The theoretical relevance of intercultural dynamics in the Development context is twofold:

1. They severely affect Aid effectiveness and yet they seem but ripples in the broader institutional debates, which are conducted in a apparently neutral rhetoric, supposedly out of respect for a 'UNnish' impartiality principle (Macamo & Esperia, 2013; Phillipson, 1997, p. 244).
2. They illustrate the invisible psychological challenges faced by Development expatriates: the intercultural stress, the strong peer pressure to join the 'ghetto' and stay loyal to its elitist condition, which inhibits individuals' outreach and agency (Harper, 2011; Mosse, 2011; Rajak & Stirrat, 2011).

2.7 Conclusion

To summarise, this chapter stressed the opaqueness of intercultural communication and calls for a thorough examination of its complexity. These “non-technical aspects” (Kempainen *et al.*, 2014; see also Krauss, 2013) are not ICT4D/E specific, yet they need proper attention. ICT4D/E research necessitates to widen its scope to reach a better understanding of contextual constraints beyond visible ones, such as infrastructural and financial issues. In particular, I second these authors' call for an increased awareness, both of the high level debates on Development and Aid effectiveness (e.g. UN, G8, DAC, World Economic Forum) and of grassroots development activities. This awareness seems to be lacking in the recent ICT4D literature, in which a positivist epistemology and a technocentric approach are still prevalent despite a increasing attention to the social aspects of ICTs (Gomez, 2013). Indeed, even the term *socio-technical* carries the legacy of a Cartesian dualism which I deem inadequate to grasp the interconnectedness of actors, artefacts and environment

in interaction. Therefore I propose an *ecological* approach pivoted on interconnectedness and interaction *in context*. Next chapter illustrates the context of my case study from my practitioner's perspective, which I consider indispensable to understand my research design (see Chapter 4).

3 Situating the research in time and space

3.1 Introduction

The previous chapter stressed the importance of local context from a theoretical perspective. This chapter instantiates the argument by progressively zooming in from the wider historical and geographical context (Figure 3.1 and Figure 3.2), to the specific bilateral cooperation project that forms the focus of this research, moving through the *macro* and *meso* analytical layers (see Figure 2.7). It then illustrates the rationale of the ICT for Education sub-project by showcasing my practitioner's thinking — as project manager, lab manager trainer and system designer — at the time of its conception. This is relevant to understanding the methodology that was developed (see Chapter 4) and scaffolds the subsequent analysis of the *technological imperative* in action (Chapters 5, 6 and 7).

3.2 Historical and political context

Populated by three Bantu ethnic groups, the Hutu ($\approx 80\%$) the Tutsi ($\approx 20\%$) and the Twa ($\approx 1\%$), the territory now known as Burundi (formerly named Ruanda-Urundi, and including the current Rwandan territory) became a German protectorate in 1899 until it came under Belgian control in 1919 by mandate of the League of Nations. The mandate was renewed by the UN at the end of WWII and lasted until 1962, when Burundi declared its independence. Officially, the mandate entrusted to Belgium was inspired by a paternalistic attitude: to provide a tutor to those autochthonous uncivilised peoples who were judged unable of self-governance (Gahama, 1983, p. 40). While the terminology has changed throughout times, this attitude is still recognisable in much of the contemporary Development initiatives (Rist, 2009; Sirolli, 1999). This issue is analysed thoroughly in Section 6.3.1, so as to understand how it played out in everyday life within the context of the bilateral project of this case-study.

Figure 3.1. Map of Burundi (2004).



Figure 3.2. A fairly typical Burundian landscape.

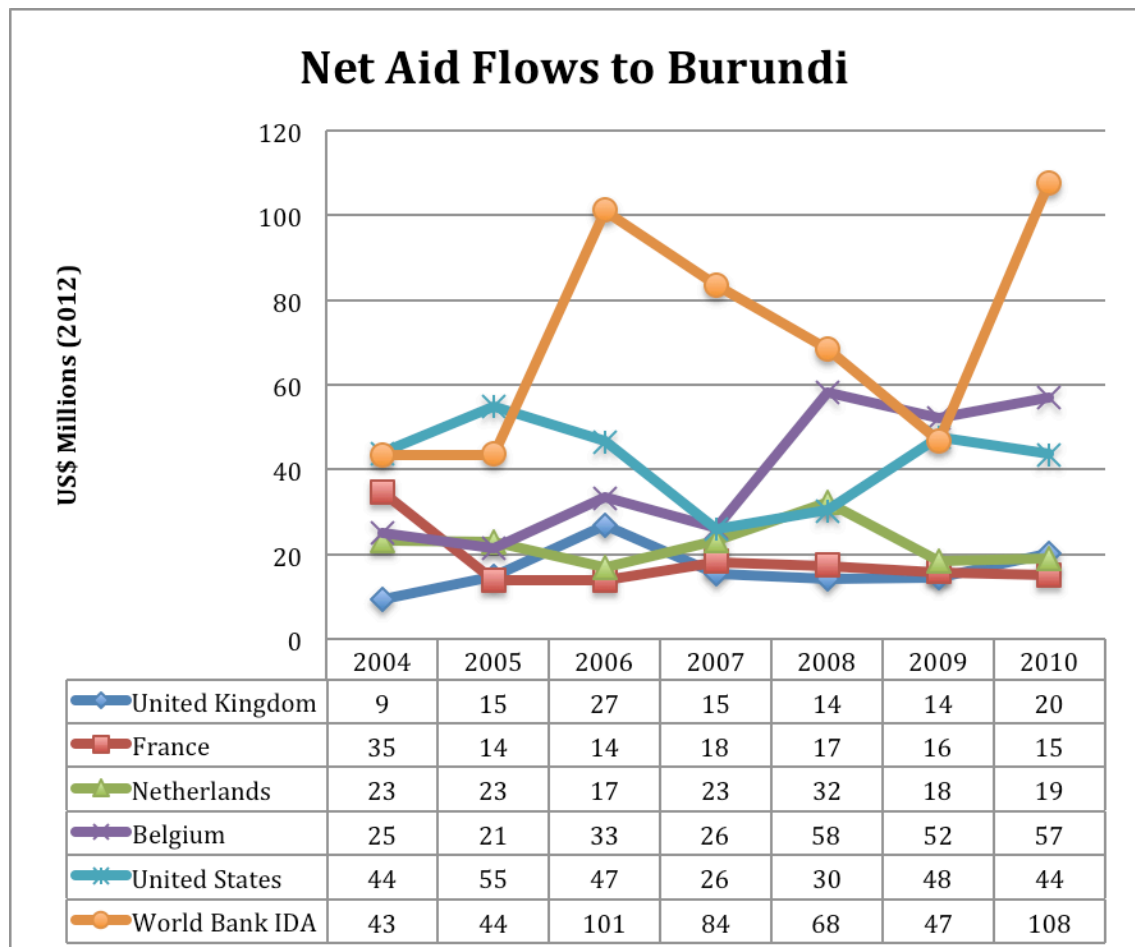


Source: Author (23.05.2004).

Source: UN Department of Peacekeeping Operations, Geographic Section.

The Belgian influence on Burundi did not vanish with the end of its colonial mandate, in 1962. At the moment of writing, Belgians are still the most numerous European presence in the country, owning many of its top companies, and since 2007 they are the major bilateral Aid provider, topped only by the multilateral International Development Association of the World Bank (Figure 3.3).

Figure 3.3. Net Aid flows from top foreign Aid providers (2004-2010).



Source: World Bank (<http://databank.worldbank.org>) and OECD DAC (<http://stats.oecd.org/qwids>) databases.

In Section 2.5.1 I defined *culture as contexts that travel*, implying that whenever someone moves to a very different context, she will inevitably carry a lot of implicit expectations, much more than what would be appropriate (Heeks, 2002, p. 107 — see Section 2.3). Thus, having sketched the historical evolution of the relationship between the two countries, I compare them on a set of key indicators to illustrate their remarkable differences today.

3.3 Belgium and Burundi: a comparison

A key argument in my research is that awareness of the differences between one own original context and 'the field' is key to Aid effectiveness (Avgerou & Walsham, 2001; Pettigrew, 1990; Walsham & Sahay, 1999). Table 3.1 presents some key indicators to enable a comparison between the two countries.

Table 3.1. A comparison between Belgium and Burundi based on seven key indicators.

Code	Indicator	Belgium	Burundi
a.	Life expectancy [a, 2009]	80	49
b.	Population under poverty line [a, 2010]	8,8% ($< 930\$/\text{month}$)	81,3% ($1,25\$/\text{day PPP}$)
c.	Adult illiteracy [a, 2009]	1%	33%
d.	School enrolment, secondary (% net) [a, 2007]	88,2%	9,3%
e.	Pupils to teacher ratio, secondary [a, 2008]	9,8	29,5
f.	Human Development Index (HDI) ranking [b, 2013]	17/186	178/186
g.	Ecological debt (Biocapacity-Ecological Footprint) [c, 2010]	$7,11 - 1,33 = 5,78$ gha per capita	$0,85 - 0,45 = 0,40$ gha per capita

Sources: [a] World Bank www.databank.worldbank.org. [b] UNDP. [c] WWF Living Planet Report 2012.

In sum, the Burundian population is (a) much younger than the Belgian, (b) economically much poorer and (c, d) much less educated, also due to (e) a glaring disproportion between the teaching workforce and the demand. Consequently (f) in 2013 Burundi ranked only 178th while Belgium 17th out 186 countries included in the Human Development Index (UNDP, 2013). However, when one computes (g) ecological footprint in the equation, it appears that Belgium's living standards are not environmentally sustainable, while Burundian still are, despite the two countries being comparable in extension and population (see Annex 5 for thorougher comparison). These disparities had significant reflections in the mentalities of the two parties in the project, in terms of risk propension/aversion, attitude towards experimenting and change, as limited resources, both material and immaterial (knowledge) tend to hinder innovation (de Waal, 1989; Wood, 2003).

With regards to technology, Burundi is not even included in the 157 economies

in the ITU's (2013) ICTs Diffusion Index (IDI) nor Internet Price Basket (IPB) with an Internet penetration estimated at 1.2%, and it is ranked 137 out of 142 in the World Economic Forum's Network Readiness Index (NRI) (Bilbao-Osorio *et al.*, 2013). Yet it would be misleading to equate this absence of official statistical data with a lack of technology. The increase of ICTs penetration in Burundi has been dramatic in the interval of this research (2008-2011). As a proxy value, the total international download bandwidth of the major Burundian mobile operator, LEO, went from 11Mb in 2008 to 155Mb in 2011. Poor electrification constitutes a major hindrance: where available, electricity is not reliable both in quality (voltage and frequency) and provision: during my research black outs were occurring on a weekly basis in most of the schools included in the project.

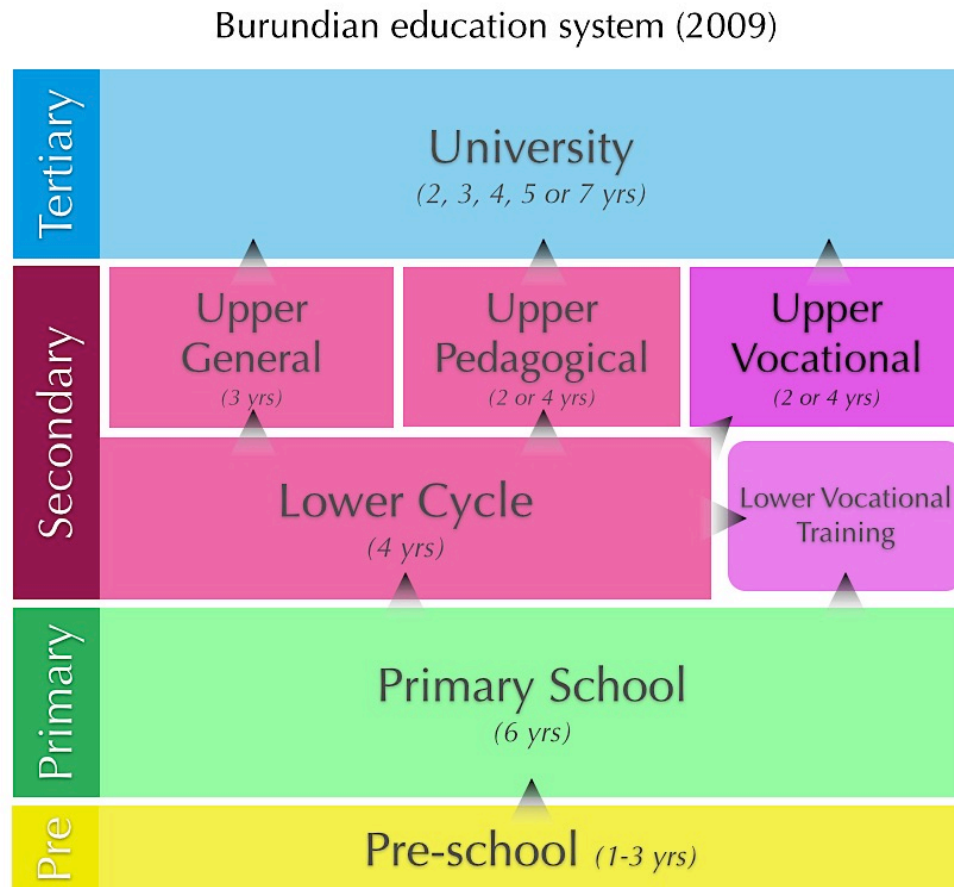
3.4 The Burundian educational system

According to the World Bank, almost a quarter of the total public expenditure in Burundi is spent on the education sector which in 2007 employed 60% (42,000) of all the public functionaries (MEdu, 2009, p. 18). In 2008 two-thirds of national education expenditure came from foreign Aid (net of the quota allocated to project management costs), which actually matches the proportion spent on teachers salaries — as if all Burundian teachers salaries were paid 'by' foreign Aid (MEdu, 2009, p. 42). Moreover, in Belgium the average salary is approximately US\$42,000 PPP for a secondary teacher with 15 years of experience — around 25% more than the average income per capita thus well above the relative poverty line (OECD, 2011, p. 406). In Burundi an equivalent teacher's salary is 30-40% more than the average income (MEdu, 2009, p. 175), but given that more than 80% the population lives in extreme poverty this equals a wage between 1,55 and 2,03 US\$ PPP a day, which is still extremely poor. Although this statistical data may be known by Development workers, their consequences on Burundian teachers' everyday life are much less apparent, since Burundians are very conscientious about their outfit, and tend to dress more formally than their European colleagues: well ironed long trousers and spotless long sleeves shirts, or dress for women. This outlook may lead the European co-worker to erroneously equate European teachers living standards with that of Burundian homologues.

The Burundian educational system has been modelled on the Belgian one since

the 1960s and never really evolved autonomously subsequently. Figure 3.4 illustrates the system at the time of this case study.

Figure 3.4. The Burundian education system at a glance. Highlighted is the sector within which this case study took place.



Source: Adapted from MEdu, 2009, p. 9.

According to the most recent and detailed report available at the time of writing, in 2009 out of 100 Burundian children, only 50 would finish primary school; among these, 26 would go on to lower secondary school (versus 98% in Belgium) and 12 will reach the upper secondary, but only 1 will go to vocational education — equals 7% of all the upper secondary pupils, against 42% of Belgium (MEdu, 2009, pp. 38–39). Nevertheless, the average class size in the 10 technical schools included in the case study was 42 pupils ($s = 15$), with the largest one in the capital city averaging 103 pupils per class in the last three years of the curriculum. In Belgium the average class size in secondary schools is 19 (24 for OECD countries — (OECD, 2011, p. 399) — and the ratio pupils to teacher is 10, against 20 in Burundi. Moreover, teachers of technical subjects do not attend any kind of pre-service training in pedagogy, thus they often simply regurgitate what they have learned during their university degree — those who

went as far as that — relying on their handwritten notes since the availability of textbooks for teachers is largely insufficient. The situation was even worse in 2002, when a first appraisal of the Burundian vocational education system was carried out by local Burundian authorities, submitted to the Belgian Directorate for Cooperation and Development (DGCD) in 2003, who decided to carry out a feasibility study in 2004, leading to the approval of a quinquennial bilateral project — *Appui à l'Enseignement Secondaire Technique et Professionnel (AESTP)* — to support Burundi's upper vocational education from 2005 to 2010.

The next section describes the overall structure of the AESTP project and then illustrate the Computer Labs sub-project which I managed directly and that constitutes the object of this study. In order to ensure a faithful reference to the original documents, I translated roles and positions from French into English, but I maintained their acronyms in the original language.

3.5 The case study in the context of Belgo-Burundian bilateral cooperation

Every three years the Belgian Direction Générale de la Coopération au Développement (DGCD) issues a *Programme Indicatif de la Coopération Belge au Burundi* (PIC) in which they specify the sectors to which Belgian Aid will be directed. The AESTP project was part of this wider cooperation strategy, and proposed to invest approximately US\$ 45M¹⁷ (\approx £27M) in five areas (health, agriculture, education, civil society support and basic infrastructures) over the 2004-2006 timeframe. Once the strategy has been agreed upon for each bilateral project, a special agreement (*Convention Spécifique*) is signed by the two partner governments. This foundational document defines the essentials of the project, namely (a) its general goals, (b) the institutional bodies responsible for the project, (c) the total budget, (d) the agency responsible for operations and implementation, (e) the parties' mutual obligations, (f) the setup and regulations of the supervising committee, and (g) its validity, time-wise. Concerning (d), the DGCD's worldwide implementing agency is the Belgian Technical Cooperation (CTB). CTB is a public-law company responsible for devising and managing projects in targeted partner countries.

¹⁷ Constant prices (2010 USD). Source: <http://stats.oecd.org/qwids>

3.5.1 Outline of the AESTP project

Table 3.2 summarises the specific agreement (*Convention Spécifique*) relative to the AESTP project.

Table 3.2. Synthesis of the *Convention Spécifique* ruling the AESTP project.

Specific Agreement between the Kingdom of Belgium and the Republic of Burundi for the AESTP Project			
a.	Goals	<p>Overall Objective: to train a sufficient number of technicians in Burundi, at all levels</p> <p>Specific Objective: Liven up the upper vocational and professional training from a qualitative and quantitative point of view.</p>	
b.	Institutional Parties	<i>For Belgium</i>	<i>For Burundi</i>
b1.	- Administration & Finance	Belgian Directorate for Development Cooperation (DGCD)	Ministry of International Relations and Cooperation (MIRC)
b2.	- Execution	Belgian Technical Cooperation (CTB)	Ministry of Education (Ministry of Education)
c.	Budget: € 14,461,043 (≈ £11,5M)	€ 10,840,941 (75%) covering: <ul style="list-style-type: none"> • CTB personnel salaries • All other costs except the personnel salaries for Burundian civil servants 	€ 3,620,102 (25%) covering: <ul style="list-style-type: none"> • Burundian civil servants salaries • Running costs for Burundian offices
d.	Formulation	CTB, financed by the DGCD	
e.	Mutual Obligations		
	- Financial Transparency	Money deposited in a Belgo-Burundian co-signed bank account in the Burundian National bank	
	1. - Operational Transparency	Reciprocal right and duty to inform the partner of relevant issues	
	2. - Control and Evaluation	Both parties have the right to control and evaluate at any time, on sufficient notice	
	- Financial commitments	The Belgian financial contribution is non-reimbursable	Fiscal exemption for all imported goods and for the CTB expatriates' salaries
	- Sustainability		Responsible for the sustainability of project results (maintenance, running costs)
	- Personnel	Belgian expatriates have to be approved by the Burundian authorities	Warrant the CTB expatriates the UN personnel's immunities and privileges
f.	Supervising Committee	Mixed Structure for Local Consultation (SMCL) composed by:	
		<ul style="list-style-type: none"> - Ministry of International Relations and Cooperation (President) - DGCD permanent representative in Burundi - Representative of the Ministry of Education - Representative of the CTB in charge of the project 	
	- Duties	Approval of the Project Technical and Financial Dossier (DTF) Monitoring of the project development (biannual meetings) and produce recommendations Approval of the final report	
g.	Validity of the agreement	72 months (60 months being the planned project duration)	

Source: Author.

Critique of the Convention Spécifique

Four points from this have particular resonance in the light of the discussion on Aid effectiveness carried out in the previous chapter. First, despite its refined rhetoric which portrays an agreement between peers, with the Burundian party granted the presidency of the supervisory committee, the Burundian contribution is not in cash but in kind. This is calculated as the budget normally allocated to the targeted offices within the Ministry of Education over five years, as if they were working exclusively on the AESTP project. Thus, the Ministry of Education is not making an extra financial effort to reform its vocational education system. While this is common practice in the Development business (Marra, 2004, p. 152; van Ginneken, 2003, p. 289), it raises doubts about the degree of ownership of the process by the Burundian party.

Second, the formulation of the project is mandated to the CTB. Its two experts, assisted by a former General Director of the Burundian Ministry of Education and a Burundian construction engineer, carried out their mission in three weeks, from the 25th July to the 14th of August 2004. This was in “tight collaboration” with the Burundian counterpart (*Dossier Technique et Financier* — DTF, p. 2), represented by the Head of the General Directorate for Technical and Professional Secondary Education and by an advisor from the Minister of Education. Yet, despite this Belgo-Burundian collaboration, the outcome document (*Dossier Technique et Financier* — DTF) obeys a very rationalistic and specialised project management logic that has been mainstreamed in the Aid business for some 20 years (Dearden & Kowalski, 2003). This also indicates the instantiation of a management culture very different from the Burundian way of handling projects, which is more opportunistic and based on the primacy of relationships (Van Stam, 2012a) that are often clientelistic (Booth, 2011, p. 3; Mosse, 2005, p. 148). Indeed in all of the official documents I read, I could not find any trace of problematizing this intercultural issue. It was as if the logical framework¹⁸ was universally intelligible and obviously preferable.

Third, the CTB is responsible for the implementation of the project, and yet its long-term sustainability rests completely on Burundian shoulders. As described in Chapter 2, the underlying rationale is that Aid providers fund and install a

¹⁸ Le Logical Framework — or logframe — is probably the most popular project management methodology in the Aid business.

high-level management structure at no cost, and expect recipients to learn how to use it over a five-year period. Failure to use and maintain such a system is seen by donors as being a failure on part of recipients to learn and adapt the assumption is that, with a big push, the system will be set in motion and will keep moving on with its own momentum. This belief has been highly contested by economists such as Easterly (2007, Ch. 2). The unidirectionality of such a bilateral cooperation relationship is controversial:

“Any interpretation of African culture must begin at once to dispense with the notion that, in all things, Europe is the teacher and Africa is pupil.” (Asante, 1998, p. 71)

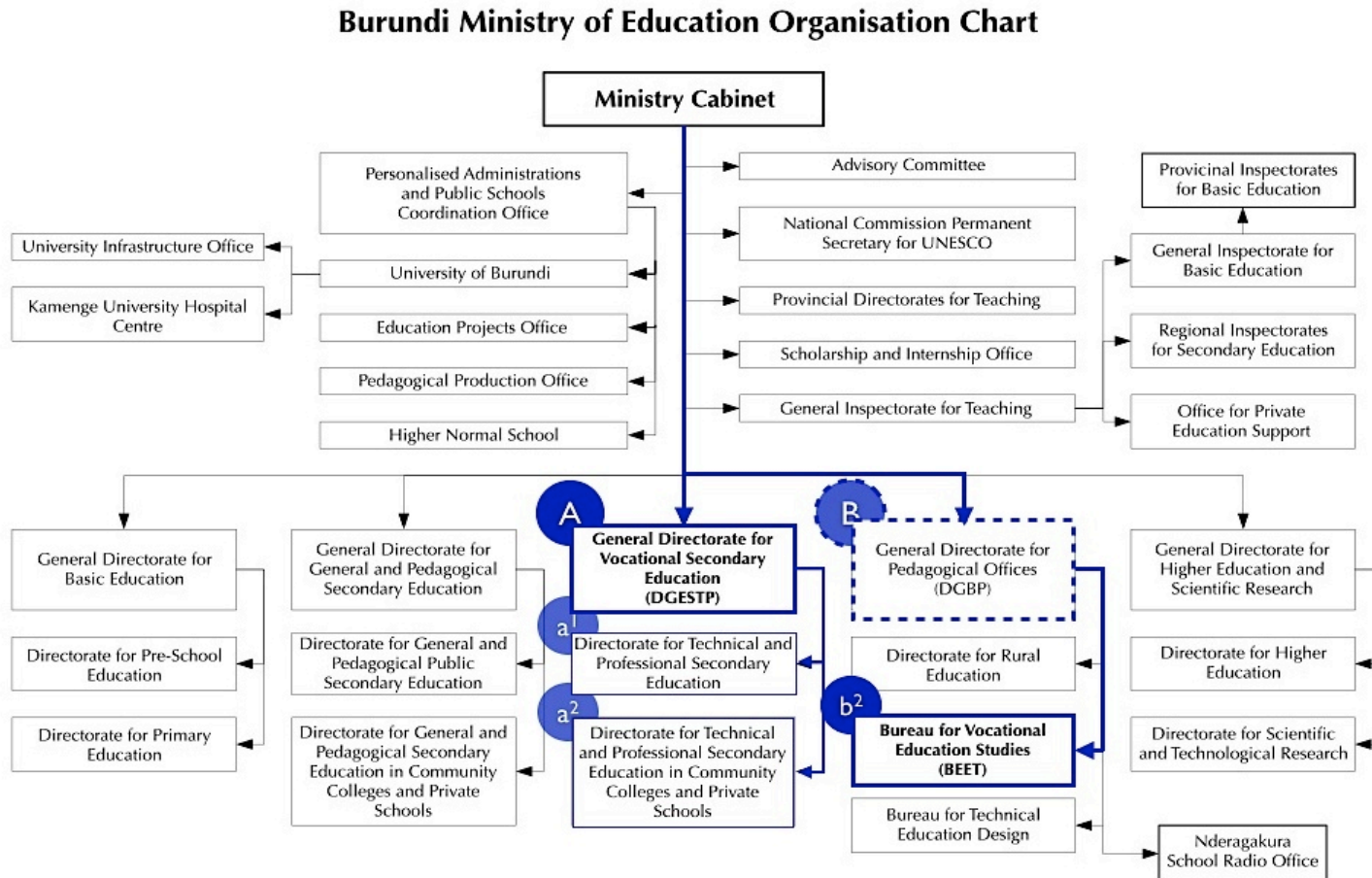
Fourth, the asymmetry of this relationship is recognisable also in the article regarding the mutual obligations on personnel management (Art. 7.2 of the agreement). This stipulates that Burundi has to grant respect to CTB expatriates in the form of very detailed UN-like privileges and immunity. Conversely, Belgium is not required to abide by any specific corresponding guidelines, such as religious ceremonies, local traditions, national holidays or whatever the Burundian party would consider worth having formally granted.

As signatories, both parties are equally responsible for this situation. However, there seems to be a gap between rhetoric and practice in the application of the Paris Declaration principles at the *macro* level (see Section 2.2.1).

Institutional implanting

Figure 3.5 illustrates the overall structure of the partner organisation (the Ministry of Education) and Figure 3.6 describes the specific institutional nexus in which the AESTP was anchored. Given the specificity of the Francophone bureaucratic terminology, I kept to a literal English translation, although it may not fit the British bureaucratic lexicon.

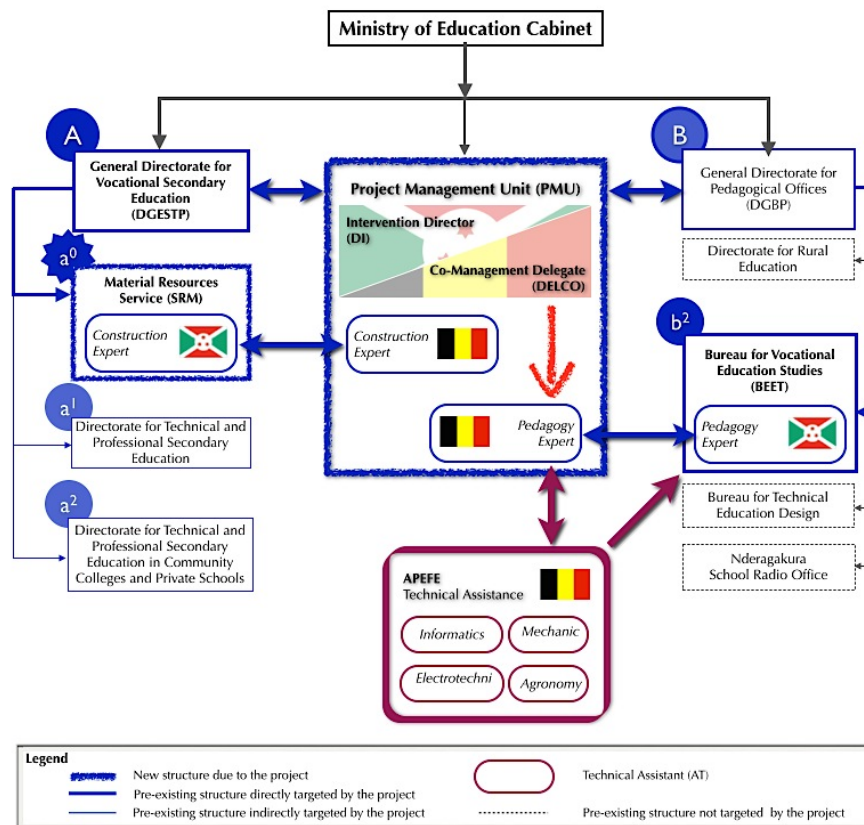
Figure 3.5. Burundian Ministry of Education organisation chart.



Source: Adapted from the AESTP Technical and Financial Dossier (BDI/04 01711) p. 41.

According to the project master document, A and b^2 in Figure 3.5 are the two offices to be supported and reinforced. In the case of the General Directorate for Secondary Vocational and Professional Education (DGESTP—become DGEST in 2008 due to a Ministerial reform), the official project counterpart within the Burundian Ministry of Education was the head of the Directorate. Therefore, the subordinate directorate would benefit from the project through its institutional intermediation. In the case of the Bureau for Vocational Education Studies (BEET), an institutional bypass was inscribed in the project since its inception. This constituted a controversial choice as it cut out the director at the upper echelon (B), whom indeed interrupted all communication with the AESTP Project Management Unit (UGP) short after the beginning and never collaborated thereafter. The Project Management Unit consisted of an Intervention Director (DI) — a Burundian Ministry of Education officer — and a Co-Management Delegate (DELCO) — Cédric, the CTB’s project manager (Figure 3.6).

Figure 3.6. Anchoring of the Project Management Unit (UGP) within the Burundian institutional structure.



Source: Author, based on the AESTP Technical and Financial Dossier (BDI/04 01711), p. 41.

A new service (A^0) was to be created within the existing Ministry of Education organisation chart to manage the infrastructure plan and the new equipment (see project budget below). This was done through a Burundian construction expert in close collaboration with a Belgian expert. On the other hand, a Belgian pedagogue would have collaborated with his counterpart within the BEET (b^2) for the capacity building process. Oddly, the DELCO — Cédric — also assumed the functions of pedagogy expert within the Project Management Unit (UGP) (red arrow in Figure 3.6). He combined his top management role with the pedagogical one, dealing directly with Dieudonné, BEET's director, serving as his counterpart. The implications of Cédric's double role for the interpersonal relationship with Dieudonné were problematic, as illustrated by the opening scene.

APEFE's role and contribution to the AESTP project

The Association for the Promotion of Education and Training Abroad (APEFE)¹⁹ was created in 1976 to allow Francophone Belgian teachers to offer their expertise in disadvantaged countries. Nowadays it has become an important actor in the Belgian cooperation arena, and offers its expertise within the wider Belgian cooperation strategy in Francophone countries. (<https://www.apefe.org/prsentation-topmenu-2.html?showall=1&limitstart=> — accessed 11.09.2012).

In 2004 an agreement was made between the CTB and the APEFE ensuring that the latter would recruit and hire four technical assistants (AT) for the duration of the AESTP project, one for each of the vocational specialisations targeted: *mechanics, electricity, informatics* and *agronomy*. These four professionals would have trained BEET's personnel and taught the vocational education teachers targeted by the project. These ATs would be working full time in the project and would report both to the Project Management Unit (UGP) and to the APEFE country representative. I was hired by APEFE in October 2008 as the new AT for informatics in charge of the *Computer Labs* sub-project, to be carried out over the following eight months.

¹⁹ Association pour la Promotion de l'Education et de la Formation à l'Etranger (www.apefe.org).

The AESTP Technical and Financial Dossier (DTF)

The Technical and Financial Dossier (DTF) elaborated by the CTB formulation mission fleshed out the *Convention Spécifique* into a project plan, summarised in Table 3.3. The overall goal was to improve youth employability in technical professions in order to foster the industrialisation of the country. Civil servants working in vocational education would have benefitted as well. Out of seven expected outcomes, four were ‘soft’—related to capacity development, and three were ‘hard’—related to infrastructure provision. Yet the resources allocated to these two categories differed greatly.

Table 3.3. The AESTP project at a glance.

AESTP Project Summary		
Objectives	<i>General</i>	Contributing to Burundi socio-economic development by improving employability.
	<i>Specific</i>	Improve the technological specialisations of the technical and professional secondary education, both qualitatively and quantitatively.
Beneficiaries	<i>Direct</i>	<ul style="list-style-type: none"> Pupils enrolled in the Technical and Professional education.
	<i>Indirect</i>	<ul style="list-style-type: none"> Teachers, tutors, administrative staff in schools and in the department of Technical and Professional Secondary Education (DGEST) and in the Bureau for Technical Curriculum Design (BEET). Future employers and the whole country economy in general.
Outcomes	<i>‘Soft’ Outcomes</i>	O1 Vocational education matches the job market.
		O2 The education of both the pupils and the personnel of the DGESTP and BEET is greatly improved.
		O3 Access to vocational education is more inclusive.
		O4 Target schools generate income for self-financing.
	<i>‘Hard’ Outcomes</i>	O5 Target schools premises and heavy duty equipment are rehabilitated.
		O6 Target schools, the DGESTP and the BEET are provided with modern equipment and consumables.
		O7 New extensions and buildings are built in the targeted schools.

Source: Author, adapted from AESTP DTF, p. 7

AESTP Project budget

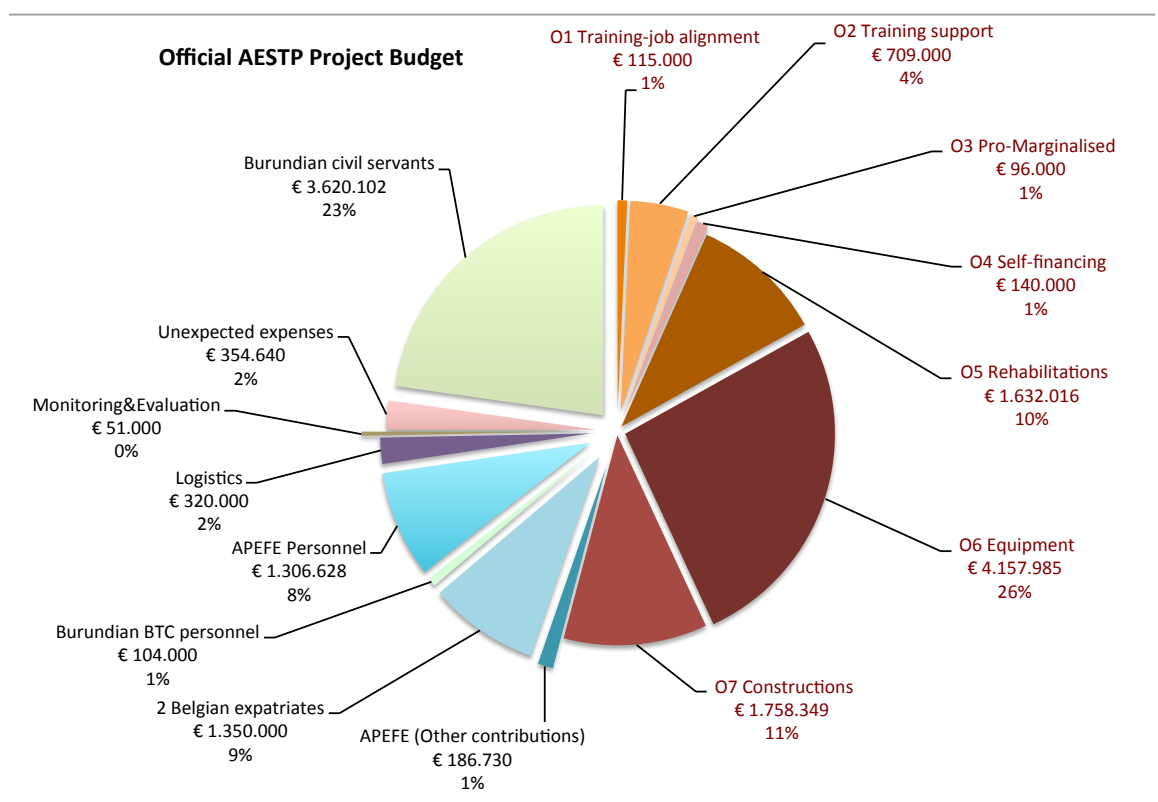
The division of the project budget is depicted in Figure 3.7, which lists the quotas allotted for the seven outcomes, followed by the various management

entries. The total Belgian contribution can be split in three main categories, once the Burundian share is removed and the contribution from APEFE added (Figure 3.8):

1. **Capacity development** ('Soft' Outcomes O1, O2, O3, O4), accounting for 9% of the total;
2. **Administration** (Belgian expatriates salaries, logistics, Monitoring & Evaluation, unexpected expenses) accounting for 26%; and
3. **Infrastructural investments** ('Hard' Outcomes O5, O6, O7), accounting for 65%.

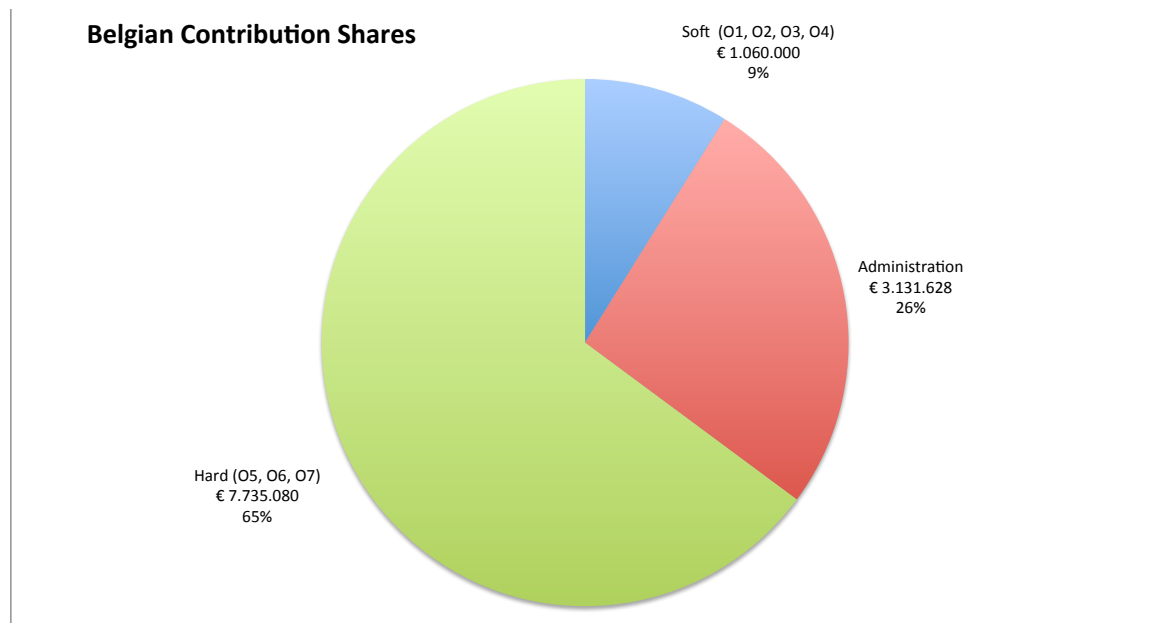
This tripartition shows how the project design was heavily technocentric from the outset.

Figure 3.7. AESTP official project budget diagram.



Source: AESTP DTF.

Figure 3.8. AESTP project budget repartition by macro-categories, inclusive of APEFE contribution.



Source: Author.

3.5.2 The *Computer Labs* sub-project

By mid-2008, the AESTP project had completed the rehabilitation of most of the 15 schools originally targeted. From this pool, the Project Management Unit (UGP) selected ten schools to host new computer labs. The minimum requirements for a school to be eligible was to be served by the national electric grid and to have an adequate room available and secured with iron bars on windows. It was not possible further to investigate the political layer orientating this choice.

In the meantime, 35 containers worth more than €4M (\approx £3,2M) in technical equipment sourced in Belgium were about to be delivered and dispatched to the different schools, according to the plan (see Outcomes O1, O2, O4, O6 in Table 3.3). Included in this shipment was the equipment necessary to set up the new computer labs (see *infra*).

The target schools: an overview

The map below (Figure 3.9) shows the location of the target schools while Figure 3.10 provides a glimpse of them.

Figure 3.9. Location of the target schools.

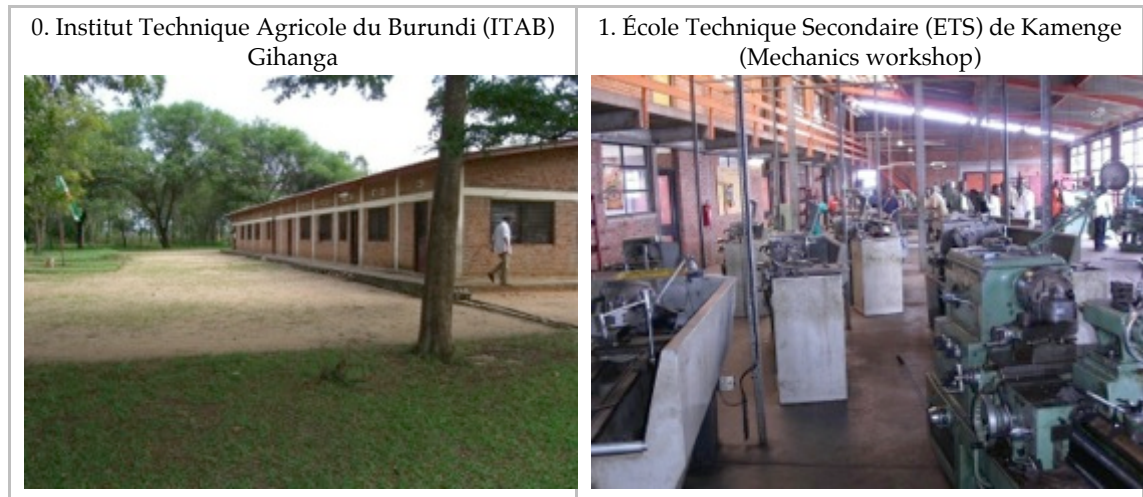
Target Schools

- 0. ITAB Gihanga
- 1. ETS Kamenge
- 2. ET Bubanza
- 3. ITAB Gifuruzi
- 4. LT Kiremba Sud
- 5. EPC Kiganda
- 6. ETP Gitega
- 7. ETSA Gitega
- 8. ITAB Karuzi
- 9. ITAB Kigamba



Source: Author. Map by Google

Figure 3.10. An external view of the target schools (Dec. 2008 — Jan. 2009).



2. École Technique de Bubanza (ETB)



3. Institut Technique Agricole du Burundi (ITAB) Gifuruzi



4. Lycée Technique Kiremba Sud (LTK)



5. École Professionnelle de Couture (EPC) Kiganda

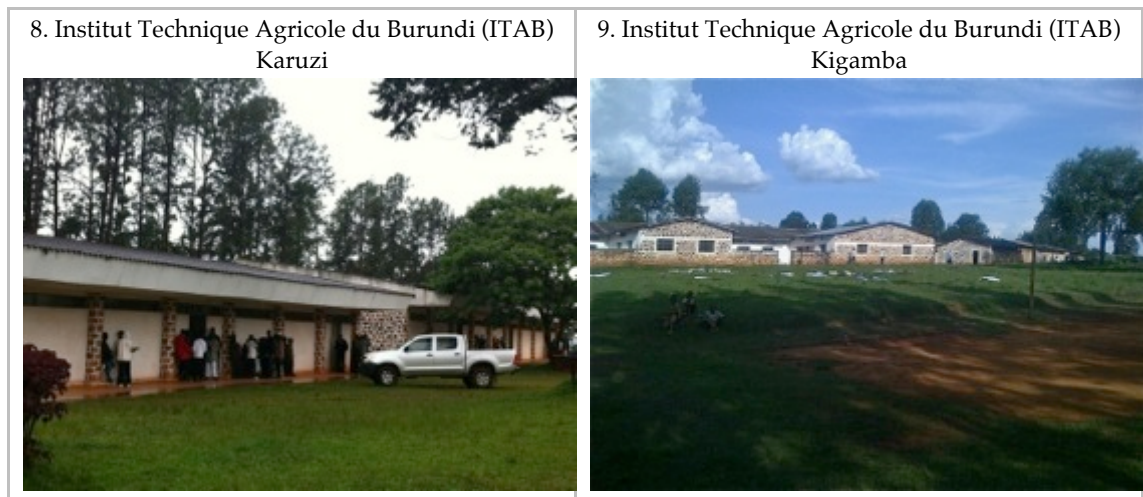


6. École des Travaux Publiques (ETP) Gitega



7. École Technique Secondaire des Arts (ETSA) Gitega





Source: Author.

School specifications

The schools are very different in size, location and subject specialisations (Table 3.4). At the beginning of the sub-project, an Internet connection of some sort was technically available in seven of the nine schools: very feeble, but sufficient to imagine emails being exchanged for troubleshooting support. Moreover, through high level contacts within the two major telecommunication operators in the country, I was informed that they were racing to be the first organisation to deploy the faster EDGE²⁰ technology nationwide. This situation led me to structure the project assuming that all trainees would have Internet access at least for email communication. I had also assumed that their bandwidth would quickly increase allowing for a richer online experience. This assumption was based solely on the technical availability of Internet signal, and was both naïve and hopeful, as described in Chapter 5.

Sub-project rationale

When I was first informed about possibly joining this sub-project I was asked to draft a plan. While my knowledge of the relevant academic literature was very limited at that time, four years of experience in the field had provided me with some insights about the recurrent pitfalls in ICT4E projects. At that time I followed the EuropeAid Project Cycle Management guidelines (EuropeAid, 2004) to structure the plan and come up with the Problem Tree and the

²⁰ Enhanced Data rates for GSM Evolution (EDGE) (also known as Enhanced [GPRS](#) (EGPRS) is a mobile data transmission technology faster than CDMA and precursor of the 3G technology.

Objectives Tree (Figure 3.11 and Figure 3.12). This causal model persuaded my employer to shift the focus of the sub-project from infrastructure provision to the long-term sustainability of the computer labs. The sub-project thus aimed to train individuals to manage and troubleshoot the labs locally. Hence, the set up of the new labs would be the tangible outcome of the computer lab managers' *training*. Eventually, the project was carried out in collaboration with the APEFE's technical assistant in electrical engineering. He was a Belgian named Firmin, and would be responsible for the physical infrastructure (electric and networking installation, custom made furniture). Firmin coordinated a team of local electricians and carpentry teachers and pupils. I would come in right after, installing and configuring the computers together with the future lab managers who I had carefully recruited from among the teachers. I would train them on how to run and maintain the lab over time. The next section outlines the critically important process whereby trainees were selected.

Table 3.4. School profiles by size, location and specialisations, Internet availability at the beginning of the project and computer labs to be installed.

School	Size ²¹	Location	Specialisations	Internet ²²	Computer Labs (# of PCs)
0. ITAB Gihanga	248	Rural	Agronomy	CDMA ²³ coverage available (28kbps dn)	1 (1s ²⁴ + 20 ref. ²⁵)
1. ETS Kamenge	2014	Urban (capital city)	Auto-Mechanics, Carpentry, Joinery, Electrotechnics, Informatics (maintenance; operational),	Urban Wifi available (512kbps dn shared)	2 (1s + 20 each, new)
2. ET Bubanza	886	Rural	Electrotechnics, Masonry, Mechanics, Plumbing	CDMA coverage available (28kbps dn)	2 (1s + 20 new, 20 ref.)
3. ITAB Gifuruzi	224	Rural	Agronomy, Forestry, Food processing	CDMA coverage available (28kbps dn)	1 (1s + 20 new)
4. LT Kiremba	260	Rural	Electrotechnics, Plumbing	No wireless coverage. Fixed phone modem available (38kbps dn)	1 (1s + 20 new)
5. EPC Kiganda	208	Rural	Agronomy	CDMA coverage available (28kbps dn)	1 (1s + 20 new)
6. ETP Gitega	435	Peri-urban	Surveying, Master builder	CDMA coverage available (22kbps dn)	1 (1s + 20 new)
7. ETSa Gitega	102	Urban	Art and Graphics	Fixed phone modem (33kbps dn)	1 (1s + 20 new)
8. ITAB Karuzi	476	Rural	Agronomy, Veterinary, Food processing, Forestry	No coverage	1 (1s + 20 new)
9. ITAB Kiganda	162	Rural	Agronomy	No coverage	1 (1s + 20 ref.)
TOTAL	5015	-	-		12

Source: Author.

²¹ Number of pupils in the 2008-09 school year.

²² December 2008 — January 2009

²³ CDMA: Code Division Multiple Access, a telecommunication protocol used for mobile data transmission.

²⁴ Server: one extra desktop PC was used as server in all labs.

²⁵ Refurbished.

Trainee selection

First, all of the teachers in each school were invited to a live presentation of the initiative (Figure 3.13). Those teachers subsequently interested had to answer the following questions in written form in 90 minutes:

1. *Why would you put a computer lab in your school? What would you expect the outcomes to be? What advantages and inconveniences do you expect?*
2. *Are you happy about your current life? Why? Would you like to change something?*
3. *Why would you like to take part in this training? What would you like to get out of it, for yourself and for the school?*

Figure 3.13. Teachers attending the presentation of the Computer Labs project at the ITAB Gifuruzi (25.11.2008).



Source: Author

My aim was to assess their existing understanding of the new technology in their own context, their motivations and their degree of attachment to the school. The following day, after reading all the essays, I selected four to six candidates per school and interviewed them individually. Given the risk that once trained, the new computer lab managers would leave the school for better paying jobs as computer technicians, I recruited two of them as trainees and

two as reserves. This final stage of the recruitment process was deliberately formal: it took place in the principal's office; all four teachers had to sign a document indicating that they accepted the terms and conditions of the training, including the contribution of their *per diem* to a communal fund for the lab.

The official *per diem* paid to civil servants on mission, according to the bilateral agreement between the Burundian government and the CTB, was 25,000BIF (with overnight stay). This was equivalent to approximately £15 or more significantly, a quarter of their monthly salary. The fund would be used to pay the teachers' board and lodging during the training days. The remaining quota would then be split: 50% would go to them and 50% would constitute the start-up capital to ensure the coverage of the running costs (especially Internet connection) and unforeseen expenses until the lab became financially sustainable by providing services to the local community, on evenings and week-ends. The rationale behind this, was to promote an entrepreneurial attitude, planning for sustainability from the onset. While nonverbal signs clearly indicated that this clause was displeasing, everyone signed without objection. The failure of this very rationalist and interculturally naïve approach is discussed in detail in Section 6.4.4.

Besides teachers, I selected five pedagogical advisors (*Conseillers Pédagogiques*), employees at the BEET, whose job consisted of supervising in-service teachers and improving the vocational training curricula. Besides their handwritten essay, I heeded the recommendations of my Belgian colleagues who had been working with them for three years. Two technicians in charge of the computer infrastructure at the *École Normale Supérieure* (the Burundian pre-service teachers' college) completed the trainees group, totalling 28 people aged 34 on average, but ranging from 26 to 47 (Annex 6).

Training course methodology

The logical framework of the sub-project stated two clear outcomes:

O1. 12 computer labs are installed in 10 schools and used.

Initially there were only 7, then 8, then 10, then 12 computer labs, with one school having three and one having two due to their large

population. The extra hardware needed was procured through a French NGO who provided old refurbished PCs.

O2. A team of computer lab managers — two technicians per school — is created and is capable of running the labs and keep them functional.

Based on my student background in psychology and on my previous experience as computer trainer for adults, the approach I adopted to achieve these outcomes aimed at:

1. Fostering local ownership by directly involving the trainees in the setting up of the lab;
2. Nurturing their self-confidence as future computer lab managers by gradually developing the necessary skills;
3. Creating social bonds among them, so that by the end of the project they would constitute a network of competent people offering support to each other when in need.

Thus, the training was itinerant and organised in two-weeks periods. A sub-group of trainees (≈ 8) would travel to a target school, hosted by local teachers responsible for logistics (lodging and food). The sub-group would work intensively for 9 days, setting up the new lab and configuring the network (Figure 3.14). Social activities were organised during weekends, such as hikes and picnics, to foster team spirit (Figure 3.15).

Figure 3.14. Completing the networking and setting up the new lab in the small group (LT Kiremba, 01.04.2009).



Source: Author.

Figure 3.15. Team building activities: hike and thermal baths (Mashwa, Bururi. 10.04.2009).



Source: Author.

During the last three days of the second week, the rest of the group (≈ 20) joined this small team. I explained that, in a collaborative manner, they needed to test the functionality of the lab, while I was simply supervising (Figure 3.16). Once each technical procedure was mastered, the trainees wrote a tutorial as a wiki installed on the local server (a copy is still accessible at <http://www.paolobrunello.it/peibu/wiki/>). Sub-group members were rotated per school, ensuring that every trainee spent the same time in a small team throughout the course. Members ultimately contributed to setting up at least two other labs besides their own (Figure 3.17).

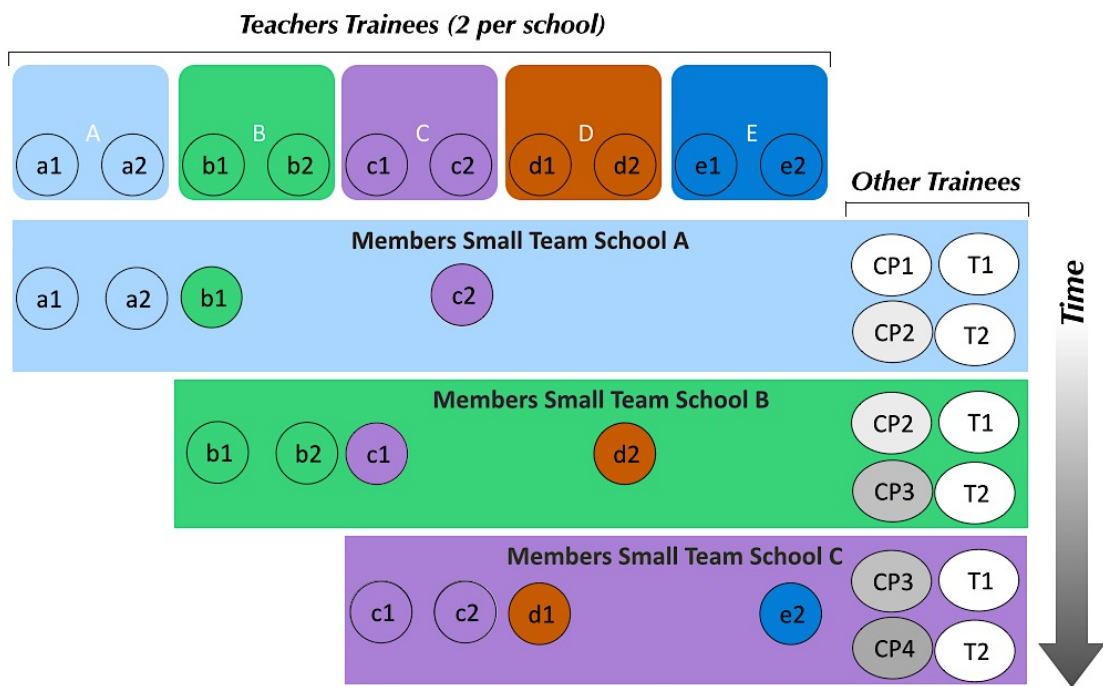
Figure 3.16. The entire group of trainees tests the newly built lab (EPC Kiganda, 23.04.2009).



Source: Author

Figure 3.17. Small Team composition scheme. [CP = Conseiller Pédagogique; T = Teachers College Computer Technician].

Trainees' Rotation Scheme for the Small Team



Source: Author.

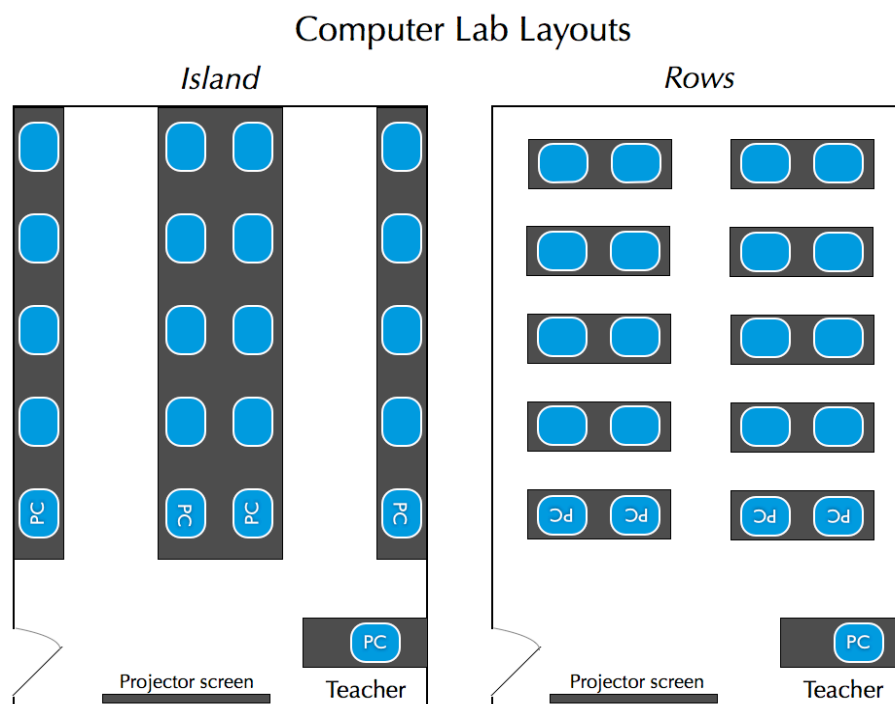
With each new installation, new features and skills were learned and the wiki knowledge base was updated accordingly. Thus, there was no predetermined system administration manual: it was “home brewed” to ensure that teachers gained a clear understanding, and to foster local ownership. Moreover, during the first school installation, we created a listserv on Yahoogroups.com and a free webmail account for every trainee, on Yahoo.fr, by far the most popular webmail service in the country. This was intended to allow for effective peer communication during installation intervals.

Finally, we planned a closing ceremony in one of the new computer labs. Here the trainees would present their work and skills to their principals, to the AESTP project leaders and to the relevant Ministry of Education authorities.

Technicalities: the Computer Lab system architecture

To complete a description of the project, I describe the architecture of the computer lab from my point of view as an *Information System Designer*. Two layouts were adopted: *island* and *rows* depending on the size and shape of the room available (Figure 3.18). The island layout was preferred in 10 out of 12 cases, as it allowed for easier cabling and better monitoring over the individual workstations from the teacher position.

Figure 3.18. Computer Labs physical layouts.



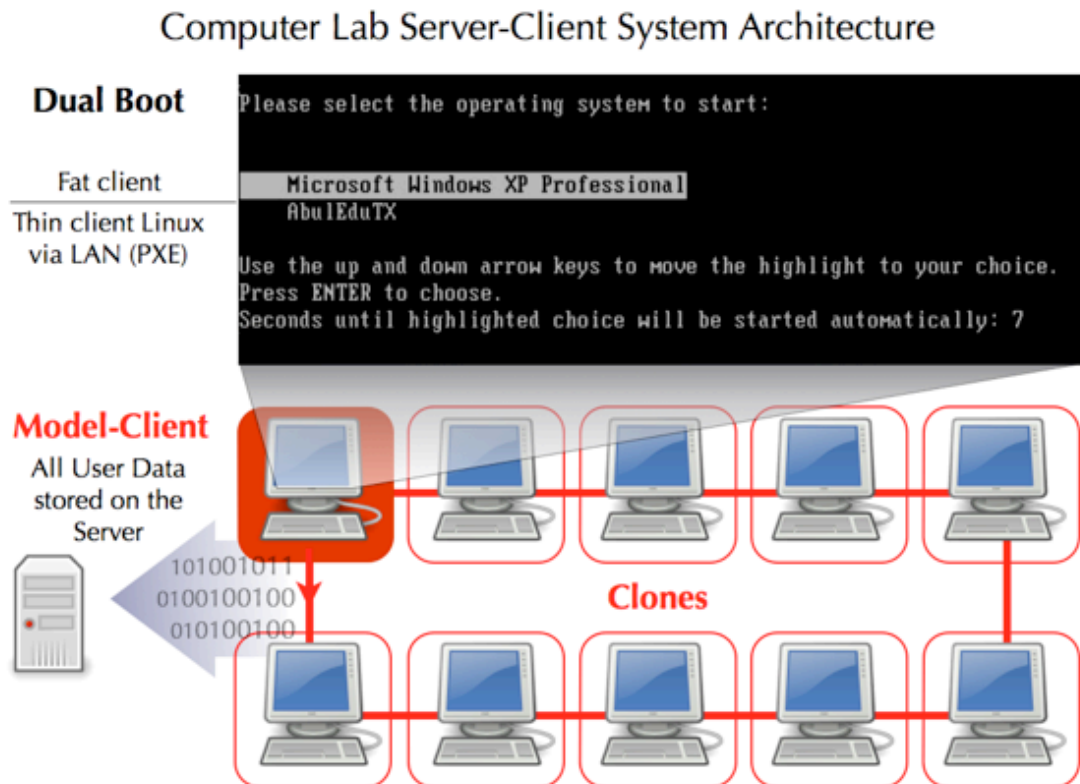
Source: Author.

Each lab was equipped with an Ethernet network of 20 desktop PC, plus one configured as a server, with double hard drive in RAID. Each workstation was protected by a UPS. A laser printer was shared across the network via Ethernet. A flat scanner, a digital camera, a DLP a projector with a large screen and a whiteboard completed the equipment (see Annex 7 for technical specifications).

In terms of software, following my analysis of the durability issue (Figure 3.11 and Figure 3.12) the system architecture had to satisfy four main requirements, in order of priority:

1. Be easy to manage by novice computer lab managers (*computer lab managers*) with little experience on a single workstation and no experience with a larger system.
2. Be easily restorable in case of software mishandling by its users (pupils, teachers and computer lab managers) by the in-house computer lab managers, without requiring external expertise and incurring additional costs.
3. Be able to support the teaching and learning of all subjects and not simply for basic computer literacy training.
4. Be financially sustainable and legal, both for the school and for the computer lab managers. To simplify the management of the lab, I designed a server-client solution in which the computer lab managers would have had to deal with only two machines: the server and one model-client (*client modèle*). The model-client was a PC whose configuration would be cloned over the network to every other client (using the free software OSCAR — <http://oscar.crdp-lyon.fr> — accessed 10.05.2014). All user data would be stored on the server. Thus should a problem occur, the computer lab manager could reformat a single machine — or the entire lab — at any moment and restore its previous functional state, instead of having to reformat 20 unique workstations (Figure 3.19).

Figure 3.19. Computer Lab system architecture.



Source: Author (Oct. 2008)

PCs could be booted to be either *thin* or *fat* clients. Thin clients would boot via Local Area Network (LAN) using the Preboot Execution Environment (PXE) technology and exploiting the server processing power. In this mode, the hardware of a single workstation serves only as a means to connect to the server. This ensured the functionality of the entire lab independently from the misfortunes of single workstations. Conversely, had the server broken down, the entire lab would have been inoperative.

Fat clients work as individual workstations and exploit the processing capacities of their own hardware, allowing for more demanding applications to run. However, they imply individual maintenance. The AESTP project members judged that installing the GNU/Linux operating system (henceforth Linux) for increased virus protection was too risky and they firmly opposed this on grounds of inconsistency with the job market, which was monopolised by Microsoft software. A third solution was considered: installing disk protection software (Skanix Illusion 5 — <http://www.illusion2004.de/> — accessed 10.05.2014) that restores the PC to its original status upon reboot, erasing all the changes that intervened in the meanwhile — viruses included. Firmin adopted this solution successfully at the existing ETS Kamenge

computer lab. Yet, I did not agree with his proposal for “locking down the machines, holding the administrator password until the last day of the project, and only then giving it to them” (Fieldnotes, 16.12.2008). Eventually, on the client side we opted for a *Dual boot*: a special configuration that allowed the user to choose the OS at start-up (Figure 3.19). Table 3.5 presents the list of applications installed on the client computers.

Table 3.5. List of applications installed by the trainees during the setup of the lab on clients.

Software	Function	License
OpenOffice.org 3.0	Office Automation	GPL
iTALC	Client Visual Remote control for class orchestration	GPL
Inkscape	Drawing and Design	GPL
DeamonTools 4.0 Lite	Disk image mounting for installations without CD-ROM	Proprietary freeware
Adobe Reader	PDF reader	Proprietary
Mozilla Firefox	Browser	GPL
Mozilla Thunderbird	Email Client	GPL
The GIMP	Imaging and photo	GPL
Avast	Antivirus	Proprietary Freeware

Source: Author.

On the server side, at that time (2008) one licence for Windows 2008 Server costed approximately US\$6,000. The project did not allot \$60,000 (\approx £36,000) to buy ten licences. Even if it had, neither individual schools nor the Ministry of Education could have afforded this in the long-term. I had previously installed the first Linux-only computer lab at the French School in Bujumbura and it was still working well, without major complaints from the users. Thus adopting Linux seemed to be the logical choice, but it was also an *ideological* one: as a Mac user myself, I was suspicious that the Linux graphical user interface (GUI) would have made it less user-friendly than Windows. However, I was in favour of the free and open source software logic, considering it more promising for low-resource contexts, given its potential for customisation, and reckoned that increasing the number of *non-techie* users would have eventually forced Linux developers to pay more attention to usability and become preferable to proprietary solutions in the long run (Amatriain, 2004; Bridges.org, 2005; Heeks, 2005a; Weerawarana & Weeratunge, 2004). I thought to have found a good solution when I discovered Abuledu (<http://www.abuledu.org> — accessed 21.04.2012), a Linux distribution based on Ubuntu 6.06 LTS. This was customised by a small French organisation, RyXéo (<https://www.ryxeo.com/>

— accessed 25.08.2014) targeting francophone schools where no in-house technicians were available. They claimed that the configuration interface was so simple that any teacher would use it seamlessly. More importantly, it was all well documented in French. Judging from their support online forum, there seemed to be a fairly active and socially engaged community of users, bringing together teachers, advanced users and developers (*techies*), some of them having already worked with an African school. After some limited testing, I decided this was the best available solution given the time and resource constraints.

Table 3.6 illustrates the services technically provided by the Abuledu server. Although the introduction of Linux had been proposed since the earliest draft of my project plan, upon the actual start of the project things changed dramatically. Doubts and concerns arose, fuelling a long debate on the overall appropriateness of Linux in the project context. This was settled only via consultation with an external computer expert working in another CTB project, who *luckily* — or so I thought at that time — endorsed my proposal. Despite this, both Burundians and Belgians remained sceptical of a platform other than Windows and kept questioning it all along the sub-project implementation. This also fuelled the existing conflict between Firmin and me (see Section 8.5.3).

Table 3.6. Services technically provided by the Abuledu server.

<p><i>The services provided by the Abuledu Linux Server 8.08 supposedly “out-of-the-box” were:</i></p> <ul style="list-style-type: none"> • DHCP and PXE servers allowing network booting from the individual workstation acting as Linux thin clients. • A Windows domain, to extend its services to Microsoft Windows workstation. • Cross-platform file sharing • A print server • A media repository system to easily store disc images (CD-ROMs, DVDs) onto the server HD and share their content with the thin clients. • An automated backup to a second hard drive — which was added to each server. • An integrated system to manage users accounts and groups (i.e. Classes), with preconfigured permissions profiles (administrator, teacher, pupil)
<p><i>Built-in Internet services are:</i></p> <ul style="list-style-type: none"> • A Internet gateway • A firewall • A proxy, with preinstalled filter of banned websites (e.g. pornography, pirated software, etc.) • A webserver with a preinstalled wiki

Source: Author, adapted from <http://docs.abuledu.org/> — accessed 02.10.2012.

3.6 Conclusion

This chapter outlined 'The plan' from a practitioner's perspective — as project manager, trainer and information system designer. It illustrated the complexities of the AESTP project from its outer layers as an intergovernmental agreement (*macro level*) down to its implementations details (*meso level*). Four points are worth stressing:

1. The conspicuous differences between Belgium and Burundi: while their quality may appear immediately, their magnitude is not so obvious, and even less their consequences on the mentality of both peoples (see Section 3.3).
2. The dramatic gap between youth demand for education and the insufficient and poorly paid workforce in the Burundian education system.
3. The uneven allocation of resources across the main chapters of the AESTP project, with two thirds invested in technological equipment, a quarter being spent in administration, mainly to pay expatriate staff, and only a tenth being devoted to training.
4. The structuration of the computer lab managers training in a way that made trainees feel entrusted and responsible for the project outcomes, both in their own school and across them, thus promoting local ownership and accountability.

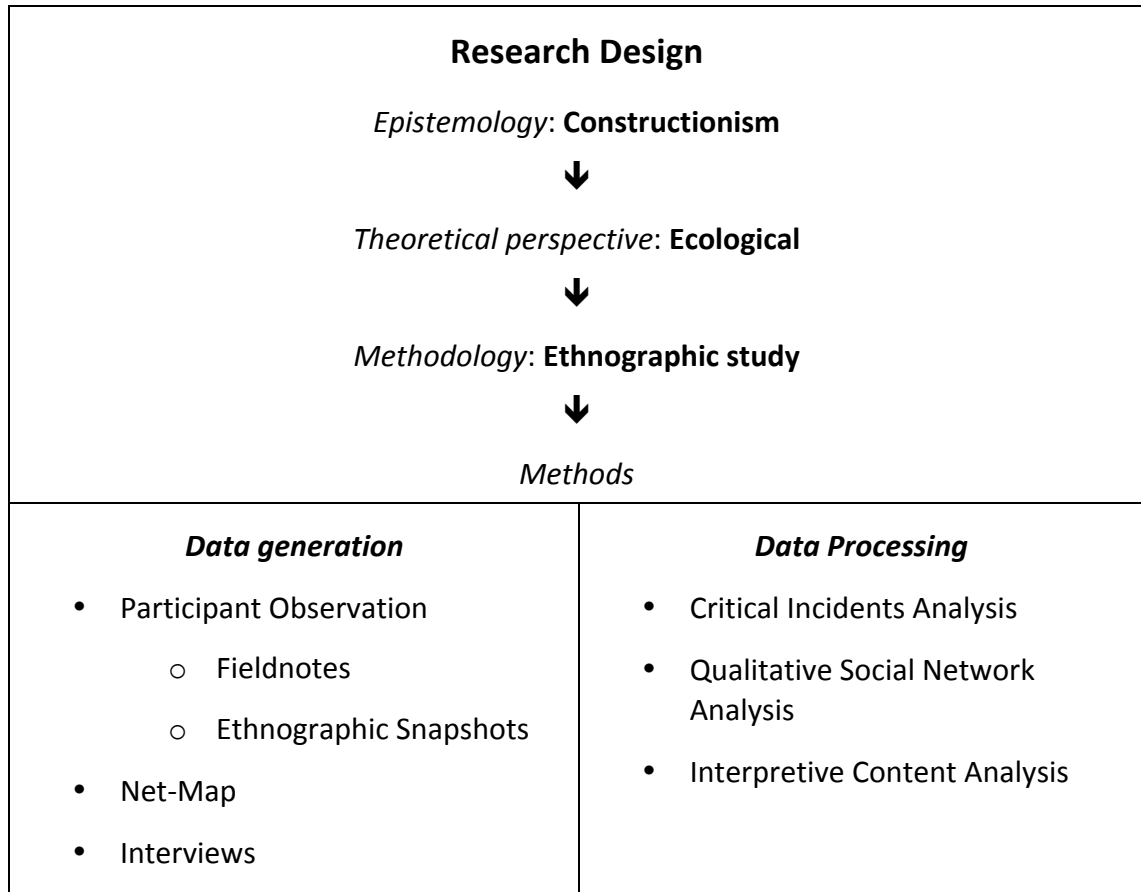
In the following chapter I switch the perspective to my researcher's persona and describe the challenges arising from my practitioner's liabilities so as to illustrate the rationale behind my methodological choices.

4 Cultivating the field: on generating and processing data

4.1 Introduction

This chapter presents the genesis of the methodology detailing the methods used for *generating* and *processing* data. In a constructionist epistemology data are indeed *constructa*, generated in the very moment a human mind moulds its flow of experience into a specific narrative, whose degree of reality will depend on its capacity to assemble a consensus within a community that shares a specific set of premises (Latour, 1992; Latour & Woolgar, 1979; Yanow & Schwartz-Shea, 2006).

Figure 28. Research design.



Source: adapted from Crotty (1998, p. 4).

In contrast with the previous chapter, the following sections describe the context in which this research has originated from my perspective as a researcher rather than as a practitioner. This will allow the reader to grasp my methodological choices, shuttling back and forth between theoretical aspirations and practical constraints, from data generation to processing. Along the way, I address emerging ethical concerns.

4.2 Why an ethnography?

In spring 2008 it became clear that the project draft I had prepared for the AESTP board would be approved and that I was about to be put in charge of it. It seemed a great opportunity to embark on a PhD, since this would force me to be more critically reflective on my work as a project manager. At the same time, it would have made my experience shareable with the wider community of stakeholders involved in ICT4D/E. Thus I started a part-time, self-funded, distance-based PhD that September, after a summer in London, only to fly back to Burundi in October to begin my new assignment. Due to these time constraints and professional liabilities, I could not spend as much time as I would have liked on a detailed literature review, identifying relevant gaps in existing theory, formulating precise questions and finally searching for a specific field to research them. Instead, I was already in the field, with a very broad question: *“Why should Burundian teachers bother adopting ICTs? Are we, the developers providing them with an electronic chalk that is just more costly, fragile and cumbersome than theirs just because we think is better?”*. I had already conducted an ethnography (Coffey, 1999; Hammersley & Atkinson, 2007; Lofland & Lofland, 1994; Madden, 2010; Piccardo & Benozzo, 1996; Van Maanen, 2011), for my Master’s thesis, and following that methodology seemed a viable option.

4.3 Entering the field

My recruitment within the AESTP project was the outcome of 11 months of courting the project team, informal conversations, and formal meetings in Burundi and Belgium. This culminated in the standard ritual of a job interview and in my ensuing appointment. The Memorandum of Understanding (MoU) I signed at the beginning of the project (see Annex 1) was the result of a delicate negotiation during the first week of my new job. Both the AESTP Co-management Delegate (DELCO) and the APEFE Country Representative had to

obtain approval from their managers in the organisations' headquarters in Bruxelles to sign the document. They were concerned about the possible consequences of my research for their organisations' and their own reputation. Eventually, my research was deemed to raise the reputation of those involved; the signatories' attitude changed sharply from one of suspicion to one of moderate pride for the scientific contribution they could help make.

Both the recruitment and the MoU processes were conducted without any direct contact with Burundian officials from the Ministry of Education. Without really realising it at that time, I had found it 'natural' to deal only with the Belgian side when discussing the core issues of my mandate. The colloquia I had with both the Burundian BEET Director and Intervention Director took place at the very end of the process, when everything was already decided. This was considered as merely honouring the protocol. It was only during my second round of field research, once formally out of the AESTP project, that I felt the need to prepare and sign a second MoU with the Ministry of Education (see Annex 2) to safeguard my access to the research setting until 2013.

The next section addresses this issue within a broader reflection on positionality.

4.4 On positionality and ethics

Positionality refers to how race, gender, age, nationality, language, income, and status influence the interactions in the research setting (Hammersley & Atkinson, 2007; Lofland & Lofland, 1994). Yet this definition risks essentialising these *variables* as personal attributes of the researcher and consequently considers them as *not variable* for a single individual, but only in comparison to others (Anthias, 2002). This may be misleading to the extent that it favours overlooking the contextual nature of these attributions, their relational and contingent fluidity (Anthias, 2002; Hammersley & Atkinson, 2007, pp. 73-79; Rose, 1997). It is therefore useful to map the differences between my interlocutors and me concerning these 'variables' and estimate their connotations (Table 4.1). Their significance, though, is contingent and a function of the *pattern of salience* that my different roles would elicit in each interaction (Anthias, 2002, p. 510; Krauss, 2012, 2013). Hence, I was feeling and was perceived as very white and almost Belgian when teaching and distributing the *per diem* to trainees at the end of the afternoon, but less so when chewing a juicy

igitigu brochette (a goat liver skewer) over a beer sitting with them a few hours later at a local bistro. This translated into greater or smaller interpersonal distance, moment by moment: a ‘dance of trust’ that took months to be learned. Thus, rather than utilise an insider/outsider categorisation (Merriam *et al.*, 2001), too objectivist to fit my approach, I prefer to reflect on positionality by referring to an ingroup/outgroup continuum. This is in line with the *othering* phenomenon illustrated in Section 2.6.

Table 4.1. Baseline positionality matrix as per my perception.

	AESTP/APEFE [Be]	AESTP [Bu]	BEET	TRAINEES	PRINCIPALS	PUPILS
Race	=	≠	≠	≠	≠	≠
Age	≠	≠	≠	=	≠	≠
Nationality	≠	≠	≠	≠	≠	≠
Gender	=	=	=	=	=	=
Language	=	≠	≠	≠	≠	≠
Income	=	≠	≠	≠	≠	≠
Religion	=	≠	≠	≠	≠	≠
<i>Legend</i>						
= means no difference between me and the people belonging to the groups indicated.						
≠ means difference between me and the people belonging to the groups indicated.						

Source: Author.

The invariable differences listed in Table 4.1 would affect the ingroup/outgroup perception of my interlocutors — as well as mine — as a function of the situation. Thus, not being Belgian and younger than most of my Belgian co-workers within the AESTP/APEFE context, I was perceived as not really belonging to their ingroup, until one or more Burundians entered the scene, instantly reframing the ingroup/outgroup distinction and making me a member of the white European ingroup — and part of the Burundians' outgroup. Conversely, there were occasions in which Burundians perceived me as belonging to their ingroup, my European colleagues being the outgroup. As argued in Chapter 2, exploring these intercultural relationships is crucial to understand any Development project. Before though, four more points need to be commented on:

1. *Gender*: the vast majority of my interlocutors were men. Notable exceptions were APEFE's Country Representative and the three women I selected as trainees. Vocational education teachers are overwhelmingly male (85% in 2009/10). The female trainees included a secretary, a

librarian and a tutor²⁶. While it is plausible that a gendered attitude towards the aptness to the mastery of ICTs was diffused among Burundians, I decided not to include gender as one of the foci of my research as it would have implied a research design incompatible with my professional constraints.

2. *Language*: the official working language of the project was (Belgian) French (see Section 9.6.1). While my mastery of French is on par with my English, my mother tongue is Italian. Similarly, while French is indeed the official language for all upper secondary education courses in Burundi (except the Kirundi course), my Burundian interlocutors' mother tongue is Kirundi and I know only a few recurrent expressions in Kirundi. This implies two main consequences for the whole of my analysis:
 - a. There is an inevitable loss in reporting something in English that was discussed in French by non-native Francophone speakers from a very different cultural background;
 - b. Had I spoken Kirundi, I would have enjoyed a much greater degree of closeness and confidentiality with my interlocutors, possibly leading to deeper insights.

Both of these consequences temper the credibility of this research, although I have sought to minimise this to the full.

3. *Income*: information about salaries is very sensitive, especially when expatriate salaries were between 45 and 200 times higher than their Burundian interlocutors' (Fieldnote 05.03.2009). This difference generally translates into different lifestyles and social status. As an expatriate, it is very easy to overlook the extent and significance of this difference, concealed as it is by the daily sharing of the same space with Burundian co-workers during office hours.
4. *Religion*: the distinction reported in Table 4.1 above is made based on the importance of religious faith in everyday life. Hence, while this topic almost never came up with my Belgian colleagues, it was very frequent to hear references to God in conversations with Burundians. I was aware

²⁶ The personnel in charge of organising the pupils after class (most of the schools examined had dormitories).

that openly defining oneself as an atheist could provoke a sudden and significant change in their attitude towards me. Thus whenever interrogated on the subject I would answer elusively: “I was raised in a Catholic region of Italy, but it would be too long of a story to tell...”, making it clear by tone and nonverbal cues that I did not want to continue the discussion on that topic, while emphasising what we, most likely, had something in common.

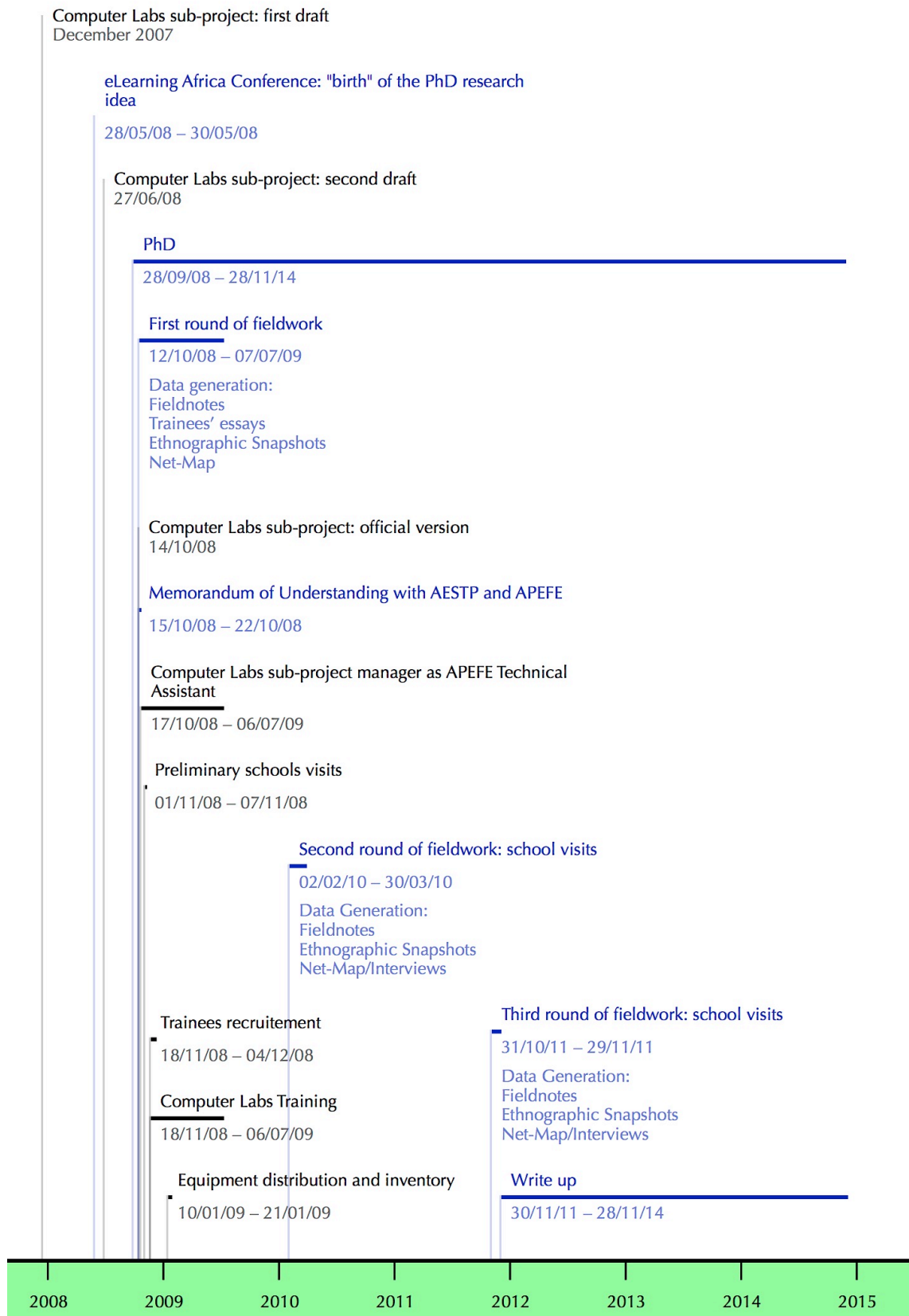
4.4.1 Zelig goes to Burundi: the challenge of multiple roles

I acted in different roles when interacting with the different groups at the different stages of my research. Overall, I conducted three rounds of field research (Figure 4.1), which I illustrate separately below. The research questions evolved throughout them (see Figure 1.2).

First round of field research.

During the first round of field research/practices (9 months: 28.09.2008 — 07.07.2009), I was primarily a full-time practitioner and a part-time ethnographer. More precisely, although I tried to maximise the data generation for my research interests, for my interlocutors I was the *project manager* for the Computer Labs sub-project (for the part not pertaining to the physical infrastructure), the *information system designer*, and the *computer lab managers' trainer*. Each role had varying prominence at different times according to specific circumstances. All of my interlocutors were aware throughout that I was conducting my research, and whenever I was ‘harvesting’ data from them I would remind them about my research and have them sign an informed consent form (see Annex 4). However, besides these infrequent and short-lived occasions, I was *not* perceived primarily as a researcher. The core methodological concern is the quality of the trade-off on the *participation-observation/emic-etic* continuum (Junker, 1960; Lofland & Lofland, 1994, p. 59; Gold, 1958 cited in; Hammersley & Atkinson, 2007, p. 82; Madden, 2010). By being *in charge* of the sub-project, my degree of participation was maximal at the expense of my researcher's reflexivity. Yet, had I put the research persona first, I would have changed the very plot of the role-play I had set out to understand, as it would have activated different repertoires of interaction between me and my interlocutors.

Figure 4.1. Timeline of the field research. Practitioner's milestones in black, Researcher's in blue.



Source: Author.

This provided me with some of the advantages of covert research — less obtrusive, non-threatening (Calvey, 2000, pp. 46–47; cited in Hammersley & Atkinson, 2007, p. 120) — without the ethical burden of secrecy (Lofland & Lofland, 1994, pp. 32–35). To handle this multiplicity of roles, I produced a set of *ethnographic snapshots*: a lengthy self-interview every four-six weeks, tracking my role-juggling and the evolution of my perceptions of the field over time (see Section 4.5.1).

My contract with the AESTP project ended in early July 2009 and was not renewed, much to my surprise and disappointment. At the time, I deemed it necessary to mentor the new computer lab administrators during their first year of operations while training other teachers to take advantage of the new facilities for their subjects. However, when I asked for a renewal, Cédric replied that Burundian teachers were not yet able to prepare a traditional lecture properly and therefore to imagine a pedagogical training on ICT-enhanced teaching was utopian and premature. While this was an arguable yet legitimate reason, it was clear to me that the ongoing conflict with Firmin was an even stronger reason for not renewing my contract (see Section 8.5.3). Consequently, in three weeks I packed all I had and moved to the UK after almost five years in Burundi, to focus exclusively on my PhD research. Once there I explored the literature around ICT for Education and Aid Effectiveness in more detail to be able to relate what I had experienced back to the current academic discourses. The ensuing *proto-analysis* (see Figure 1.2) led me to reframe my research questions more sharply, investigating the larger issue of sustainability of ICT for Education projects. It had become increasingly clear to me that the original question about teachers' motivation for ICT adoption was subsumed under a universe of possibilities delimited by the interpersonal and intergroup dynamics between *developers* and *developees*.

Second round of field research

I nevertheless wanted to stay loyal to the ethnographic approach and prevent “premature closure”, forcing the data to fit these early intuitions (Lincoln & Guba, 1985). Thus when I returned to Burundi in February — March 2010, my main aim was to understand how the introduction of the new computer labs had affected the life in the schools as well as the relationships between Belgians and Burundians within the AESTP project. During this time, I *felt* primarily like a researcher. Some residua of my other roles were still alive, as I felt urged to

provide the trainees with the technical support I had not been given the chance to provide earlier. During the training, I tried to establish the habit of a fortnightly email report on the situation of each lab, but most of the trainees encountered administrative, logistical or technical problems when trying to send it. Some felt uncomfortable communicating to the group that they had a problem or that the lab was not used very much. Thus in the first seven months following my departure I was not flooded with emails requesting technical support as I had expected. Yet once back in the schools, I was solicited to provide technical help. Methodologically, I faced a dilemma: should I refrain from intervening to observe the autonomous evolution of the labs? Or should I help them solve their immediate problems and offer my expertise for the sake of the project's sustainability? The dilemma later dissolved: the refusal to help would have degraded the rapport with my interlocutors. I also realised that imagining the computer lab as an isolated setting after my previous departure was naïve. Firmin had been visiting the school computer labs several times since then, often intervening directly on the PCs configuration. Other teachers had been coming from Belgium invited by the AESTP project to give short courses on special subjects, installing their own software. They seemed unconcerned about the consequences this had for the lab management — an action that most computer lab managers in European schools would thoroughly question before giving their permission.

The kind of interpersonal bonds and trust that I could build with my interlocutors as a practitioner paid off during the second and third rounds of field research. My role as researcher, now in the foreground, was still casting a project manager/trainer shadow. With my former trainees, this resulted in their greater availability as interviewees and higher confidentiality than what I would have enjoyed otherwise. However, this collaborative attitude was prone to be complacent. It takes a great deal of assertiveness openly to report the shortcomings of a project that was led by the person interviewing you. This caveat held true for the Belgian interviewees as well, although with them the relationship had already been ruffled during the first round of field research. Thus, their assertiveness was affected by concerns of diplomacy, rather than by grateful reciprocity. Firmin was an exception in this regard, treated separately in Section 8.5.3.

Third round of field research

The preliminary analysis I had conducted on my data while back in the UK, helped me sharpen the research questions before this last period in the field. My interview template tackled directly these three main issues (see Annex 10):

- a. Why are ICT for Education projects so fragile?**
- b. What is the role-play amongst the project stakeholders?**
- c. What is the instrumental and symbolic value of ICTs for different stakeholders?**

When I went back to Burundi in November 2011, 19 months after the previous field visit my former role as practitioner had faded. The AESTP project had been officially concluded in December 2010, thus leaving the computer labs in the hands of the Burundian computer lab managers who I had trained two years earlier with little external support. My former APEFE colleagues still visited the project schools occasionally, and Firmin was still very present at the ETS Kamenge in Bujumbura. Yet, besides my role as a researcher, I acted as an ambassador for a new Development agent, the Swiss STMicroelectronics Foundation (STF), whose mission “is primarily to develop, coordinate and sponsor projects, that employ the use of modern sciences and high technology to promote human progress and sustainable development of less privileged communities around the world” (<http://www.stfoundation.org/mission/index.php> — accessed 10.10.2012). STF’s newly appointed chairperson had been my boss during my first project in Burundi working with an Italian NGO (2004-2007 — see <http://bit.ly/witar08> for details). On the basis of this experience, we agreed that the Burundian schools I had worked on with AESTP could be interested in becoming new training centres within the STF programme, which provides training, equipment and three-year financial support for basic computer literacy courses in disadvantaged contexts (see www.digitalunify.org for details). I would work for STF, and in exchange, they would cover the costs associated with my visit to Burundi and warrant me enough time to carry out my research interviews. We signed a Memorandum of Understanding (see Annex 3) and eventually a typical visit in the school unfolded as follows:

1. I would call both the principal and the computer lab managers and arrange a visit, briefly presenting the STF programme.
2. Once on site, I introduced the delegates of the STF to them — one Italian and one Burundian — who would then present the programme workings in detail.
3. I then interviewed the principal and computer lab manager personally while the STF delegates interviewed a sample of teachers and pupils on their use of the lab, following an interview protocol I had devised and trained them to use (see Section 4.5.3).

In terms of field relations, these circumstances had pros and cons. On the positive side I had the chance to visit the schools after ten months of autonomous computer lab management and just before another external Development agent would come in and interfere with the Burundian autonomous administration. Moreover, I could witness the attitudes of the principals and computer lab managers when presented with the prospect of a new Aid provider bringing infrastructural and financial support. Furthermore, three of the schools had new principals who, by associating me with the STF initiative, were definitely more inclined to devote some time to my interviews. Besides, I accompanied the STF delegates in their meetings with the Burundian government officials as well as with the high ranks of the Telecom companies. On these occasions, I could sit and observe the negotiations unfolding at an institutional level. This had not been possible previously.

I complemented these observations with a series of interviews with some high ranked CTB officials. Finally, I re-interviewed my former colleagues and boss at APEFE who were still working in the country. My association with the STF made it more attractive for them to spend time with me. On the negative side, this meant that the answers I recorded while re-interviewing my former trainees and the principals were influenced by their desire to become part of the STF programme. While positive impression management is acknowledged as a universal human tendency (Beach, 1990; Goffman, 1959, 1974; Hammersley & Atkinson, 2007) these particular circumstances are likely to have enhanced it significantly. Interviewing teachers and pupils unaware of STF's plans served as a means for triangulation.

4.4.2 Positionality and emotions

Handling these various distances, getting “close, but not too close” (Madden, 2010, p. 81; see also Pettigrew, 1990, p. 278) with my interlocutors, has certainly been one of the greatest challenge of my research. While contemporary ethnography stresses the importance of giving sufficient space both to *realist* tales and *confessional* tales (Van Maanen, 2011), and ethnographer’s emotions have gained much legitimacy in the academic literature (Coffey, 1999; Rose, 1997; Widdowfield, 2000), the risk of sliding into self-indulgent descriptive accounts is high. The strategy I adopted to cope with this was to multiply my research methods, both in generating and processing the data (see Section 4.5), to allow for triangulation and more rigorous understanding. Nevertheless, I hold integrity, transparency and openness as guiding principles and consider it necessary to include in my account two emotional strands that directly affected my research. First was the interpersonal conflict with Firmin, the APEFE Technical Assistant who supported my candidature within the Belgian side of the AESTP project and later worked in parallel with me in the Computer Labs sub-project. This conflict affected the organisational role-play within the AESTP project and ultimately affected the sustainability of the Computer Labs. In terms of role-play, it was particularly difficult to handle in that Firmin used my researcher role as a ‘weapon’. I was accused of neglecting the project goals for the sake of my academic interests, and in those very emotional times, it proved difficult to distance myself from my feelings and assume a unfettered ethnographic stance. I discuss this conflict (see Section 8.5.3) as an important component of the wider analysis.

Second was the culture shock I experienced when I abruptly moved to the UK after five years of living and working in Burundi. There was a stark contrast between my high status in Burundi and my PhD student status in the UK and this provided invaluable insights, as a person and as an ethnographer of Aid. I realised how privileged I was as an expatriate — rich, strong agency, professionally fulfilled. In stark contrast, for the first time in my life I *felt* poor and precarious, disempowered and professionally frustrated — much like some of my Burundian interviewees. This made me feel more empathetic with the hardship of my former trainees. Thus, it made me understand at a deeper level how different life can be when lived on socio-economic strata so far apart from each other, despite sharing the same physical context. More importantly, it made me understand how easy it is to discount this experiential difference

when you are an occasional tourist to someone else's poverty. This insight translated in the addition of a few extra questions to the interview template I adopted in the third field visit, which focused more closely on the mutual perception of Belgians and Burundian in the context of a cooperation project (see Sections 7.3 and 7.4).

To conclude, issues related to positionality are particularly important in this study given the multi-layered relationship the researcher had to the setting and the focus of the investigation on the social drama (Pettigrew, 1990) within the project. I now turn to the presentation of the methods I adopted to generate and process my data.

4.5 Data generation and processing

Table 4.2 summarises the methods I used to generate and process the data during the three different phases of my field research. This section describes the choice and implementation of these methods.

4.5.1 Ethnographic snapshots and fieldnotes

As many scholars have pointed out (Coffey, 1999; Jessor *et al.*, 1996; Rose, 1997; Van Maanen, 2011) ethnographers cannot abstract themselves from the context they are narrating as external observers. Instead, their credibility is a function of their capacity to let the reader imagine in detail the unfolding of the action emerging from their interpretation of the situation, in a circular feed-back loop. Thus before my first field visit I developed a set of 35 questions (Table 4.3) that I answered iteratively approximately every six weeks during the first field research and after the second field visit and before and after the third round of field research, in order to track the evolution of my perceptions of the field and to record the tentative explanations I produced 'on the spot'.

These written self-interviews forced me to examine carefully how I was *performing* — both in the dramaturgic and work-related meaning of the word — in my different roles (project manager, researcher, trainer, information system designer and administrator — see Question 3.1 in Table 4.3). Initially, such ethnosnapshots were complementary to fieldnotes, but soon after the beginning of the first field research, I had to merge these methods, since maintaining both was difficult given the time constraints imposed by my job. Thus, those critical incidents that used to constitute the core of my fieldnotes were embedded as

answers to the ethnosnapshot questions that most closely related to them. Methodologically, this represented a compromise, in that free-flowing, unstructured fieldnotes allow for greater narrative richness than when constrained within an ex-ante designed structure. Yet pragmatically, this turned out to be an unavoidable trade-off. Fieldnotes were restored to an almost daily routine during the second fieldwork and the third field trip.

Table 4.2. Dataset matrix.

Field research phase	Data generation	Dataset	Volume	Data processing
Field research 1 (Oct 2008 — Jul 2009)	Ethnographic Snapshots	5	37.300 words	Longitudinal comparison
	Fieldnotes	13	6.700 words	Interpretive Content Analysis, Critical Incidents Analysis
	Net-Maps	3	161 pictures, 2 hrs video	Net-Map Analysis
	<i>Secondary data</i>			
	Selection essays	140	≈ 300 handwritten pages	Interpretive Content Analysis
Field research 2 (Feb — Mar 2010)	Ethnographic snapshots	1	1500 words	Longitudinal comparison
	Fieldnotes	18	4600 words	Interpretive Content Analysis, Critical Incidents Analysis
	Interviews	32	29 hrs of recordings + notes	Interpretive Content Analysis
	Net-Maps	7	11 hrs audio/video 91 pictures	Net-Map Analysis
Field research 3 (Nov 2011)	Ethnographic snapshots	2	10.000 words	Longitudinal comparison
	Fieldnotes	17	8.000 words	Interpretive Content Analysis, Critical Incidents Analysis
	Interviews	34	43hrs of recordings + notes	Interpretive Content Analysis
	Net-Maps	6	11.5 hrs of audio/video 60 pictures	Net-Map Analysis

Source: Author.

Table 4.3. Ethnographic snapshot template.

Monthly Ethnographic Snapshot Template	
1. Relevance	
1.1	<i>Why should Burundian teachers bother adopting ICTs?</i>
1.2	<i>What could they gain? Why?</i>
1.3	<i>What could they lose? Why?</i>
1.4	<i>What other priorities come first for them? Why?</i>
1.5	<i>What helps? Why?</i>
1.6	<i>What hinders? Why?</i>
1.7	<i>What are the attitudes of the different stakeholders in the project with regards to technology? Why so?</i>
1.8	<i>How would I describe the interplay between technology and power in this context?</i>
1.9	<i>Why do I think that this interplay works out in the way that it does?</i>
2. Pedagogy	
2.1	<i>How adequate is my pedagogical approach in this context? What really worked well this month and what not? Why? What should I change?</i>
2.2	<i>How effective does the balance between challenge & support I'm endorsing turned out to be for their learning?</i>
2.3	<i>Who seems to be learning 'best' and 'worst'? Why might this be?</i>
2.4	<i>What are the factors/processes that seem to influence learners most? Why?</i>
2.5	<i>What aspects of the technology do learners find most/least easy to use? Why?</i>
2.6	<i>How well tuned is the balance between what to teach and what to leave out?</i>
2.7	<i>How cohesive is the trainees group? What makes it so?</i>
2.8	<i>How much in control of the learning process I feel I am? Are my learners dancing with me, or am I dragging them, or am I pulled by them?</i>
2.9	<i>How resilient are learners to innovation and change? Why? What are the strongest resistances?</i>
3. Self-positioning/monitoring	
3.1	<i>How effectively am I handling my multiple roles (project manager, researcher, trainer, computer lab manager)?</i>
3.2	<i>How do I feel? How disciplined am I? How self-accountable? Am I on top of things or am I overwhelmed and losing track? What can I leave out? What can I give up? Where I could get help?</i>
3.3	<i>How are the relationships with my main reference persons (bosses, supervisor, trainees, colleagues)?</i>
3.4	<i>Who have been the main people to influence me in my work?</i>
3.5	<i>How well am I handling the interplay between project and research?</i>
3.6	<i>How is the attitude of my employer towards my PhD?</i>
3.7	<i>Are there any foreshadowed conflicts? Should I try to prevent them/keep out or should I enter and manage them? What are the foreseeable risks in the different scenarios?</i>
3.8	<i>How is the overarching, independent context playing? Do the initial assumptions hold true?</i>
3.9	<i>What have I learnt most this month? Why?</i>
3.10	<i>What has surprised me most? Why?</i>
3.11	<i>What has saddened me most? Why?</i>
4. Reflections on generating data	
4.1	<i>How rigorously am I tracking the process? How systematic am I?</i>
4.2	<i>How appropriate is my methodology? Why? How could I improve it?</i>
4.3	<i>How lucid am I being as a researcher? Am I sucked in by everyday life?</i>
4.4	<i>How much re-reading, re-listening, re-watching, writing, reflecting am I doing?</i>
4.5	<i>How good is the data I am generating? How usable? How manageable? How fair the amount? Realistically: will I be able to handle it?</i>
4.6	<i>How well am I relating what I'm doing to what I've read in the literature?</i>

Source: Author.

Data processing

Analysis of these ethnosnapshots was carried out following two criteria:

1. Comparing the answers to the same ethnosnapshot questions longitudinally, reviewing how some of my ideas changed whereas others remained essentially the same over time.
2. Identifying and carefully examining those critical incidents that occurred at the interface between the lab and the school administration, or between the latter and the Belgian cooperation professionals and that disrupted the normal project routine.
3. Through interpretive content analysis (Ginger, 2006), triangulated with the other methods I adopted, I have attempted to unearth the mismatches of premises that led to each incident, revealing the underlying premises of the people involved (Coulon, 1987; Garfinkel, 1967; Goffman, 1974, Ch. 10; Pedersen, 1995).


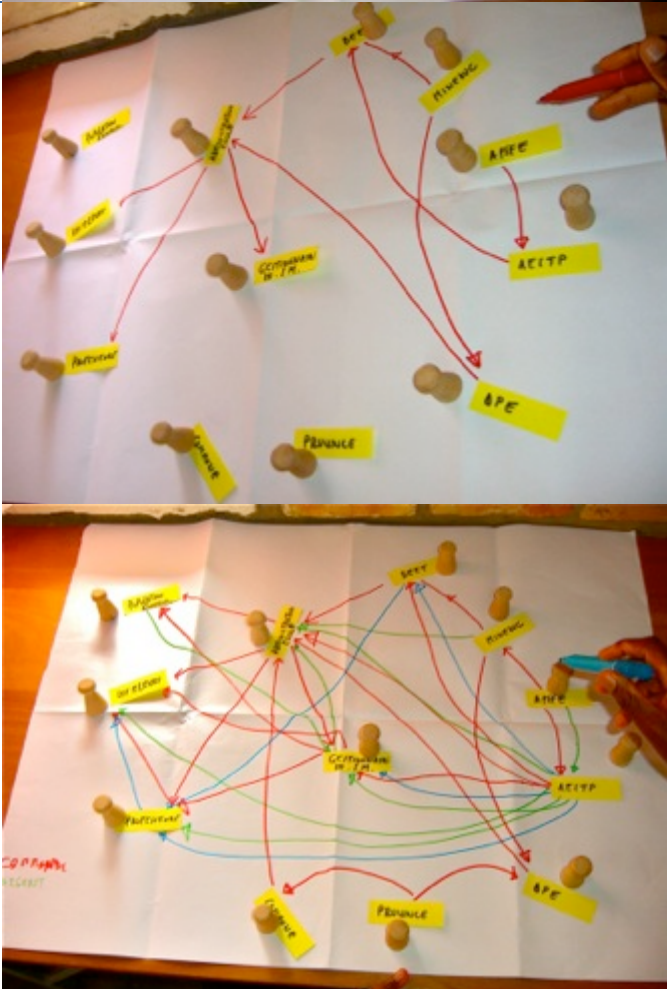
4.5.2 Net-maps


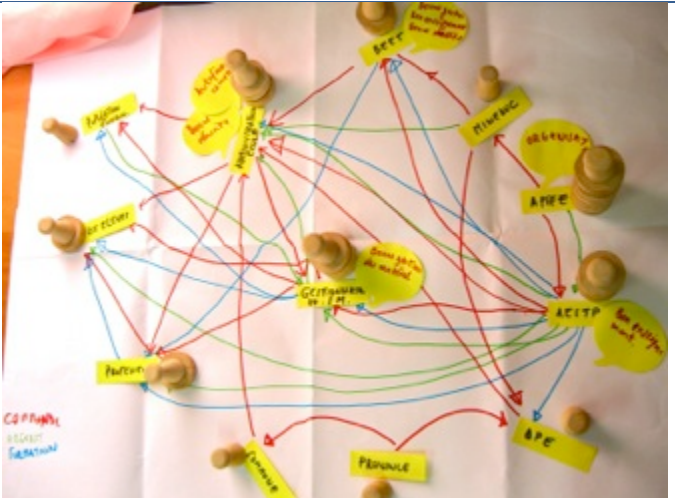
Given the centrality of interpersonal relationships in both my theoretical approach (see Chapter 2) and in my practitioner's experience, I turned to the Social Network Analysis (SNA) literature and eventually found Net-Map,

“a low-tech, low-cost, interview-based mapping tool that can be used by researchers, facilitators, and implementers to (1) visualise implicit knowledge and understand the interplay of complex formal and informal networks, power relations, and actors' goals; (2) uncover sources of conflicts as well as potentials for cooperation; (3) facilitate knowledge exchange and learning processes; and (4) develop visions and strategies to achieve common goals” (Schiffer *et al.*, 2010, p. 231).

Net-Map was inspired by the SNA structuralist tradition (Carrington *et al.*, 2005; Scott & Carrington, 2011) as a “paradigm that takes relations, rather than individuals, groups, attributes, or categories, as the fundamental unit of social analysis” (Wellman, 1988; cited in Mische, 2011, p. 80). However, Net-Map does not share its quantitative emphasis. Rather, it constitutes a participatory qualitative method to elicit actors' narratives on the dynamics occurring in their social setting (see also Hollstein, 2011). The basics steps of the method are illustrated in Table 4.4

Table 4.4. The five steps of Net-Map.

1.	Identifying the core problem at stake in the form of a question starting with “Who influences... — ...the success of this project?” (or ...the adoption of this new seed? ...the quality of this service? Etc.)	
2.	Identifying the stakeholders and write them on post-it notes to be placed on the paper sheet (<i>Who is involved?</i>).	
3.	<p>Map the relevant links between them in terms of:</p> <ul style="list-style-type: none"> • formal hierarchy (<i>Who can give orders to whom?</i>) • flow of money (<i>Who pays whom?</i>) • training (<i>Who is training whom?</i>) <p>... or any kind of relationship considered relevant for the case in point.</p>	

4.	Assessing the relative influence of each stakeholder with regards to the question stated at step 1 by placing piles of discs (influence towers) close to each actor: the stronger the perceived influence on the end result, the higher the tower.	
5.	Identifying the motives and objectives of each stakeholder (<i>Why is she/he/it taking part in the project?</i>)	

Source: Adapted from Schiffer (2007). Pictures by author (17.03.2010)

Thus, as a field method, Net-Map operationalizes the distinction between stakeholders' importance versus influence, "whereby importance illustrates a stakeholder whose problems, needs, and interests are the priority of the intervention, and influence is how powerful the stakeholder is" (Bailur, 2007, p. 67). As a project management tool, Net-Map fulfils the recommendations by Braa *et al.* (2004) who emphasised the importance of network establishment or enhancement when considering sustainability and scalability of a project or intervention. Henceforth, I have capitalised the word Net-Map to indicate the technique, while using net-map to refer to an actual artefact resulting from its application.

I used Net-Map during all phases of field research, but in different ways. In the first round, I experimented with the method during the opening session of my training. I divided the trainees in three groups of 8-9 people each (Table 4.5), to ensure that everyone could actively participate in the discussion (Figure 4.2). I asked them to map out "*Who influences the success of our Computer Labs project?*".

As Schiffer (personal communication, 01.12.2008) recommended, I carefully avoided the term *power*, preferring *influence* instead. The former is an overused term, loaded with stark connotations — positive and negative — and liable to be identified with formal hierarchy. After some initial hesitations, the discussion quickly took off and became very active, to the point that lunch was almost skipped (Figure 4.3.). Throughout this phase, I took 161 pictures and captured some excerpts of the discussion as notes and 65 minutes of video-clips with the help of a local assistant (Figure 4.4). At the end of the allotted time (4 hours), the three net-maps were positioned side by side and compared during an hour of collegial discussion (this was entirely video-recorded, Figure 4.5). Such discussion was very insightful, both for me and for the participants (Schiffer *et al.*, 2010), since the method requires participants in each group collectively to craft one map, forcing them to make their implicit knowledge, premises, and expectations explicit. This necessitates to reach a sufficient degree of consensus on each element of the map (actors, links, goals and influence) — a consensus heavily dependent on the alchemy between the charisma of some and the acquiescence of others in each group (see Section 0 for a thorougher assessment of Net-Map).

Compared to another popular elicitation method, *focus groups* (Puchta & Potter, 2004; Wilkinson, 2003), this form of Net-Map can be more participant-directed. The researcher intervenes only sporadically as a facilitator, letting participants generate both questions and answers. The result is the emergence of a shared narrative, ‘moored’ to the map. In addition, the method let me swiftly identify the leaders in each group by observing who stood up first, who talked most, who grabbed the markers to draw the lines, and conversely the shyer individuals. This proved to be an unexpected side-benefit of the method in terms of understanding the wider role-play in the AESTP project. Unfortunately, there was not another occasion to repeat the exercise at the end of the course, terminated in advance, on short notice, by Cédric.

Table 4.5. Example of intergroup Net-Map.

Figure 4.2. Early stages.



Figure 4.3. Animated discussions.



Figure 4.4. Recording action.



Figure 4.5. Final discussion.



Source: Author (08.12.2008)

Net-maps dataset table

During the second and third rounds of field visit, I used Net-Map as a narrative generator in one-to-one interactions, as a preferred method over conventional qualitative interviews (Figure 4.6). By requiring the interviewee to draw instead of simply talk, Net-Map makes complacency with the interviewer harder, since people are generally more self-conscious of their speech than of their drawing. This manifested itself when interviewees had troubles justifying in words what they had drawn without hesitations, as the explanation was somewhat politically incorrect. In sum, I judged the combination of speech and drawing as a richer data generator (Pink, 2009). Yet, one of the drawbacks of Net-Map is its duration: even when applied with a single interlocutor, it can hardly take less than 90 minutes; many interviewees did not make themselves available for so long, and only two out of six who drew a Net-Map during the second round of

field research, agreed to draw a second one during the third field visit. Moreover, when prompted, some interviewees chose to stick with the usual interview format, feeling more at ease with it. Eventually, I generated 12 individual net-maps and a group map (ETP School Administrators), as illustrated in Table 4.6.

Figure 4.6. Example of individual net-map interview setup.



Source: Author (12.11.2011).

Table 4.6. Net-Map dataset. Legend: Net-map. Videotaped. Pictured. Notes.

Net-Mapper	1st round of field research 2008-09		2nd round of field research 2010		3rd round of field research 2011	
Computer Labs trainees, in 3 groups	Date:	08.12.2008				
	Duration:	≈ 5h				
	Data:					
ETS computer lab manager (Zéphirin)	Date:		Date:	29.03.2010	Date:	14.11.2011
	Duration:		Duration:	56'	Duration:	75'
	Data:		Data:		Data:	
LTK computer lab manager (Laban)	Date:		Date:	17.03.2010	Date:	09.11.2011
	Duration:		Duration:	89'	Duration:	112'
	Data:		Data:		Data:	
APEFE technical assistant (Firmin)	Date:		Date:	18.02.2010	Date:	23.11.2011
	Duration:		Duration:	91'	Duration:	≈ 3h
	Data:		Data:		Data:	
APEFE country representative (Julie)	Date:		Date:	09.02.2010	Date:	24.11.2011
	Duration:		Duration:	150'	Duration:	56'
	Data:		Data:		Data:	
ETP Administrators and computer lab manager	Date:		Date:		Date:	03.11.2011
	Duration:		Duration:		Duration:	87'
	Data:		Data:		Data:	

Source: Author.

Net-maps processing

Resulting net-maps were first studied in their original form, observing the structure of the network, the distribution of power as indicated by the influence towers, and the goals of each stakeholder. Any unexpected detail was carefully annotated by having the original notes on the side (Figure 4.7). Net-maps were transcribed using F4 software (www.audiotranskription.de — last accessed 01.12.2012), which allows the audio or video file to be synchronised with the transcription (Figure 4.8).

I then digitised all of the Net-Maps using SNA software, MDLogix Visualyzer 2.0, for subsequent analysis (Figure 4.9 — see Annex 8 for technical details). Huisman and Van Duijn (2010) have surveyed as many as 56 SNA software visualizers, and in the light of their overview I chose to use Visualyzer 2.0 for its user-friendliness and versatility. It also had the following specific advantages:

1. Stakeholders are represented by coloured circles, where diameter is a function of the relative height of their influence tower: the higher the tower, the larger the bubble.
2. Links are colour-coded so that each kind of relationship (i.e. *Command*, *money flow*, etc.) represents a specific analytic layer.
3. Each layer can be shown or hidden at will.

The paper and digitised versions of the same net-map may look remarkably different in terms of the position of each actor and the length of the links, as Visualyzer's algorithm recomputes them each time a parameter is changed so as to optimise network readability. The relative position of each node can be replotted whenever a layer's visibility is changed, to study how the network structure changes when showing single or a specific combination of layers (Figure 4.10). This software, nevertheless, has some limitations in that some attributes of the paper net-maps, such as links thickness — used by some net-mappers to represent the strength/volume/intensity of a specific relationship — cannot be easily reproduced on the computer (see Annex 8 for a detailed description of the digitisation procedure).

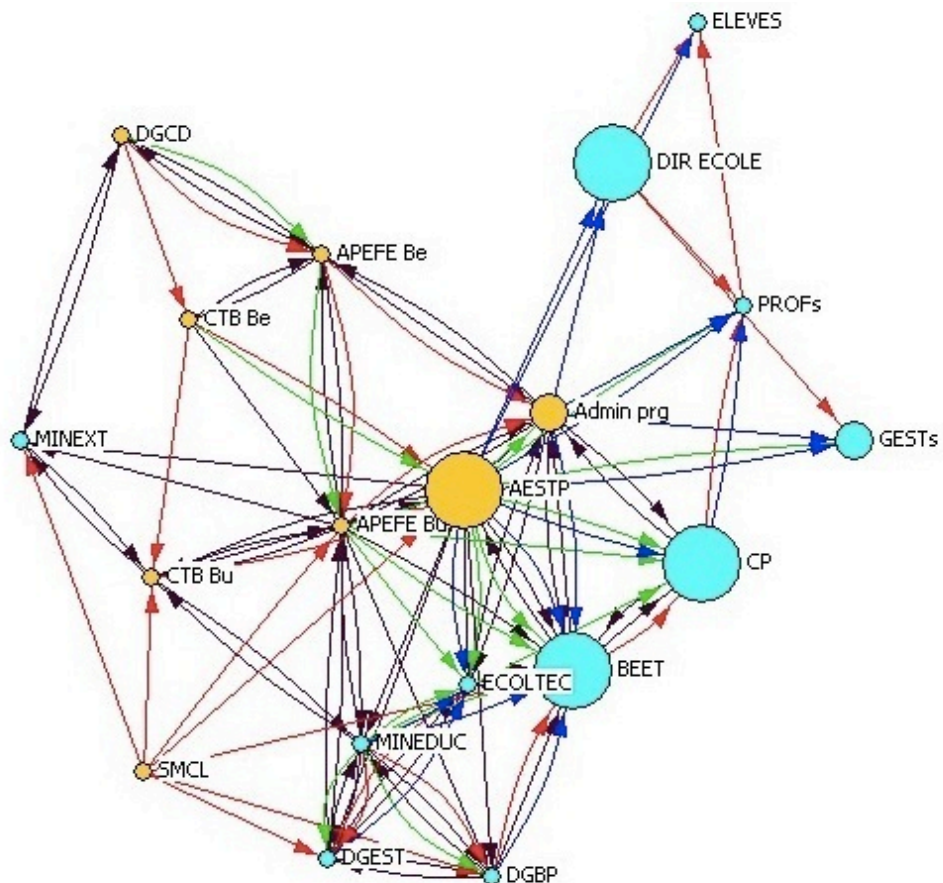
Once digitised, net-maps' links belonging to the same category — e.g. money flows, or hierarchy — were enabled or hidden and the network automatically replotted by the software, thus allowing to spot inconsistencies with my expectations. These new networks were printed out and carefully studied side

Figure 4.8. Example of Net-Map video-recording transcription using F4 software.



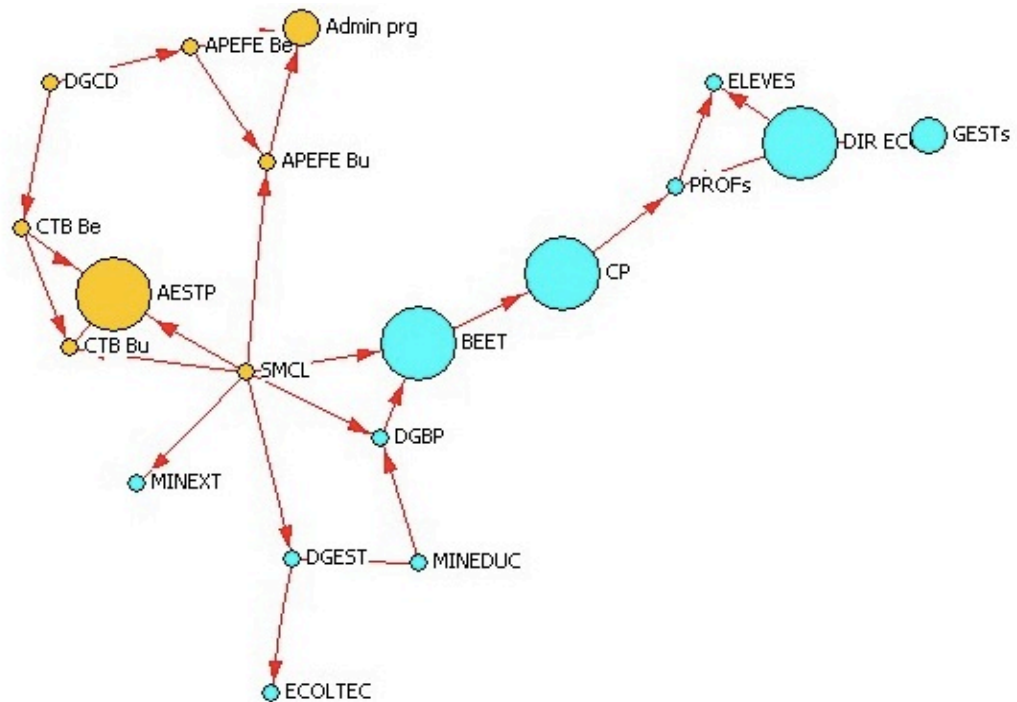
Source: Author.

Figure 4.9. The digitised version of the net-map in Figure 4.7.



Source: Author

Figure 4.10. Single layer visualisation of the net-map in Figure 4.9: only command links are visible. Whenever layers are shown/hidden, the software replots the network to allow for a finer analysis.



Source: Author.

4.5.3 Interviews

According to Walsham (1995, p. 78) in the interpretivist research tradition interviews are an especially “important data source, since they enable researchers to step back and examine the interpretations of their fellow participants in some detail.” I conducted formal interviews during the second field visit (n=32) and the third (n=34) for three main reasons:

1. They allowed me to investigate what had changed in the schools life and within the AESTP project after the ‘launch’ of the computer labs.
2. They also let me better understand the role-play between stakeholders in terms of mutual attributions, as well as their conceptions of technology now that it was available in situ.
3. They suited my new role and was compatible with the relatively limited time and resources I had available.

As illustrated in Section 2.4.2, I considered the Burundian schools and Development Aid as ecosystems, and the Computer Labs sub-project as one intersection between them. Consequently, I set out to interview all the people involved in the AESTP project who were also concerned with the sub-project, the relevant counterparts within the Ministry of Education, all the school

principals involved, all the trainees, a sample of teachers and a sample of students for each school. I undertook this process first during the second field research, seven months after the end of the sub-project, while the AESTP project was still running and intervening in the schools. I then repeated it during the third round of field research, 28 months after my departure and ten months after the entire AESTP had concluded (see Table 4.7).

This strategy allowed me some degree of comparison between two timeframes and enabled some theorising on the diverse evolution of the computer labs in the different schools. Longitudinal case studies, monitoring the impact of an ICT4E project two years beyond its formal end, are rare in the relevant literature (Heeks, 2002), and by doing this thesis part-time I was fortunate to be able to gain an unusually rich longitudinal insight into the processes. One plausible reason for the scarcity of previous such studies is the lack of mid-long term accountability that plagues the Aid industry (see Section 2.2.1). In line with the interpretive tradition (Yanow & Schwartz-Shea, 2006), my interview templates evolved significantly between the second and third field research. I stayed very flexible on both occasions, adopting a conversational interview style (Hopf, 2004; Soss, 2006; Yanow & Schwartz-Shea, 2006) whenever the conditions would allow it, and retreated to a more stringent format when they did not (e.g. time constraints, lack of confidentiality).

Table 4.7. Clustered list of interviewees.

Interviewees				Duration (in minutes)	
<i>Stakeholders group</i>	<i>Role</i>	<i>Character name</i>	<i>How many?</i>	<i>Field Research 2010</i>	<i>Field Research 2011</i>
AESTP project	Intervention Director (DI)	Michel	1	43	150
	Co-management Delegate (DELCO)	Cédric	1	72	66*
	Technical Assistants (AT1)	Firmin	1	[Net-Map]	142
	Technical Assistants (AT2)	Gilbert	1	60	79
	APEFE Country Representative (CR)	Julie	1	[Net-Map]	46
Ministry of Education	BEET Director 2010	Dieudonné	1	[Net-Map]	-
	BEET Director 2011	Jean-Luc	1	-	78
	Pedagogical Advisors (CP)		4	109 (4)**	79 (2)**
	Vocational Education Director (DGSTP)	Aristide	1	[Net-Map]	72
Schools	Administrators***		7/10	446	924
	Ex-Trainees/Computer lab managers		27/28	722	930
	Teachers' sample		8/10	264	95
	Pupils' sample		8/10	213	158
Total interview time****				1929' (~32h)	2819' (~47h)
* The DELCO was interviewed the second time in May 2014, since in November 2011 he had left					

Burundi already.
 ** Pedagogical advisors were interviewed together: four in 2010 and two in 2011.
 *** The principal and when not available, the Technical Director supervising the computer lab managers.
 **** Differences with Table 4.2 are due to interviews that were not audio recorded, not only annotated

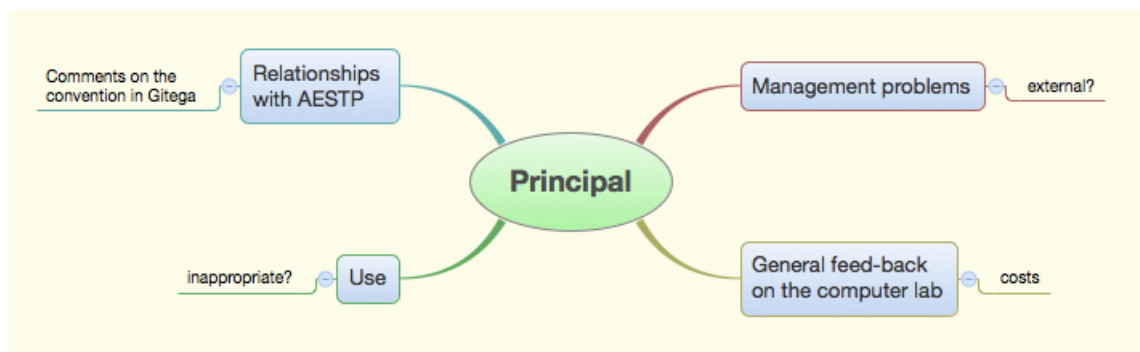
Source: Author.

Interview templates

During the second round of field research, my interview templates were minimal. I aimed to elicit narratives about the Computer Labs sub-project and about the impact of the newly installed facilities on the schools. I also tried to minimise the effect of my personal assumptions. Thus, I started by simply asking: “*What has happened [in the seven months] after the end of the training?*” in an attempt to capture whatever was considered most salient by the interviewee. Yet, my mindmap template (Figure 4.11) was designed to classify answers as:

- **Technical** — pertaining to infrastructure, e.g. “*Internet is not working yet*”.
- **Relational** — pertaining to the role-play between stakeholders, e.g. “*I called X to ask for help*”.
- **Appraisal** — pertaining to an assessment of the advantages and disadvantages related to the project, e.g. “*The students have now access to modern technology, and that is good*”, and more specifically who had gained and who had lost in the new situation, compared to the pre-Computer Labs period.

Figure 4.11. Example of an early interview template used in the second round of field research converted into a XMind mind-map.



Source: Author.

These categories were directly related to the initial, broader research questions, investigating the fragilities of ICT4E projects, the role-play amongst

stakeholders and the instrumental and symbolic dimension of technology — at the contextual level(s) examined by each specific interviewee (single school, national educational system, bilateral cooperation). I deliberately explored these aspects with more direct questions, such as:

- *“What is the actual use of the new computer lab facility?”*
- *“Is it a help or a source of problems, both at the management and pedagogic level?”*
- *“What is the acceptance in the school when people started using it ‘for real’?”*

Indeed, the training course had ended in July 2009, and thus the real test of its effectiveness was at the start of the new school year 2009-10.

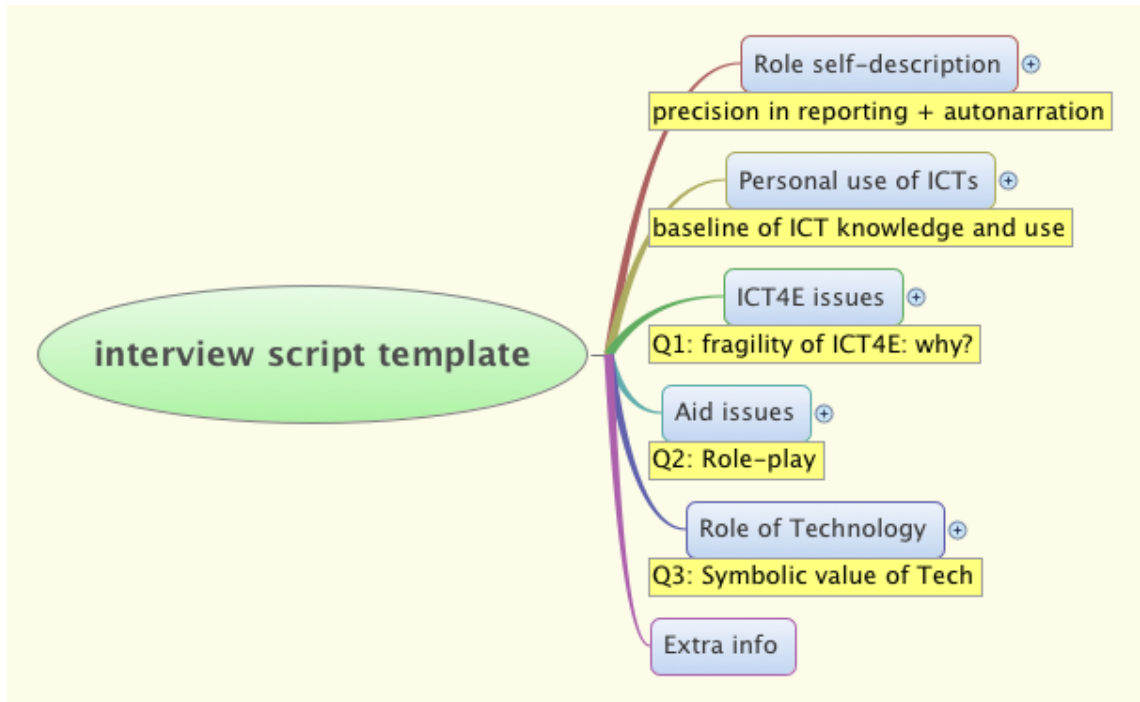
The interviews concluded with a reflection on expectations:

- *“What didn’t you expect and happened instead?”*
- *“What do you expect for the future?”*

These questions prompted the interviewees to seek instances in which their expectations were not met and to project into the future. I could thus compare them with the data generated in the third round of field research I had envisaged. This basic interview template was then adapted to each interviewee, by exploring further specific aspects of his/her *niche* (see Annex 9).

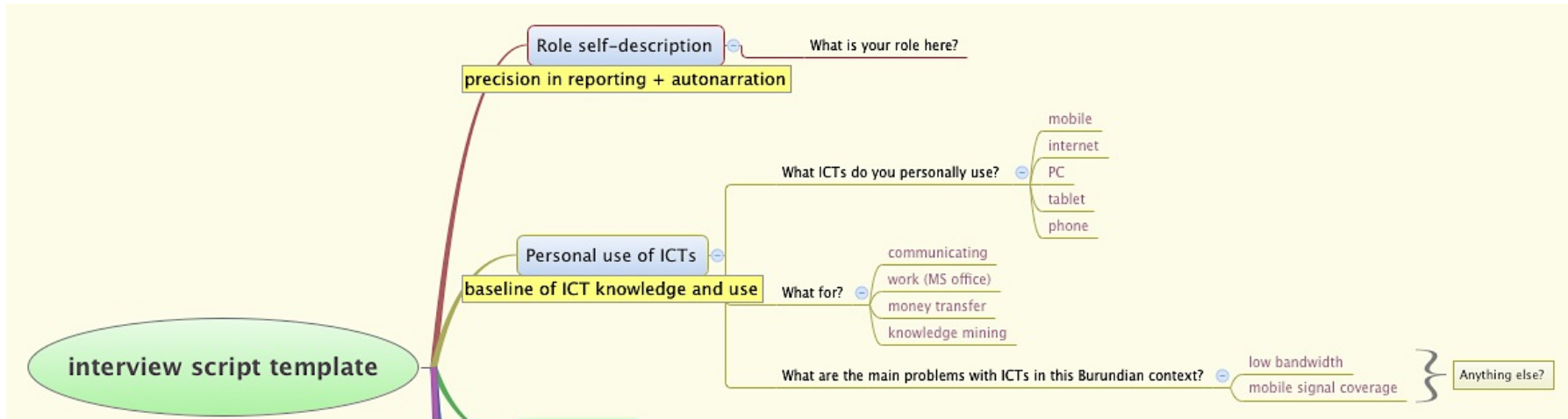
By November 2011, during my last field research, my interview template had three main research threads. Fragility of ICT4E, role-play, instrumental and symbolic dimensions of technology were maintained, but scrutinised in more detail (Figure 4.12, Figure 4.13 and Figure 4.14).

Figure 4.12. Core structure of the interview template used in third round of field research (November 2011).

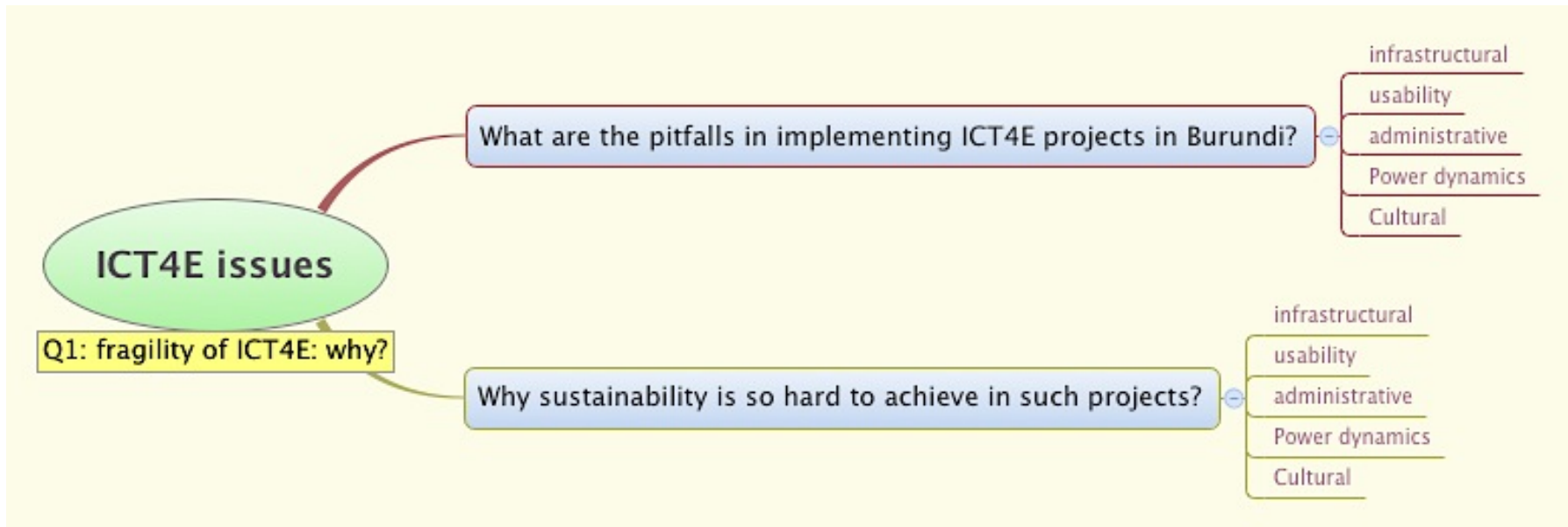


Source: Author.

Figure 4.13. Detailed view of two branches of the interview template used in third round of field research (November 2011).

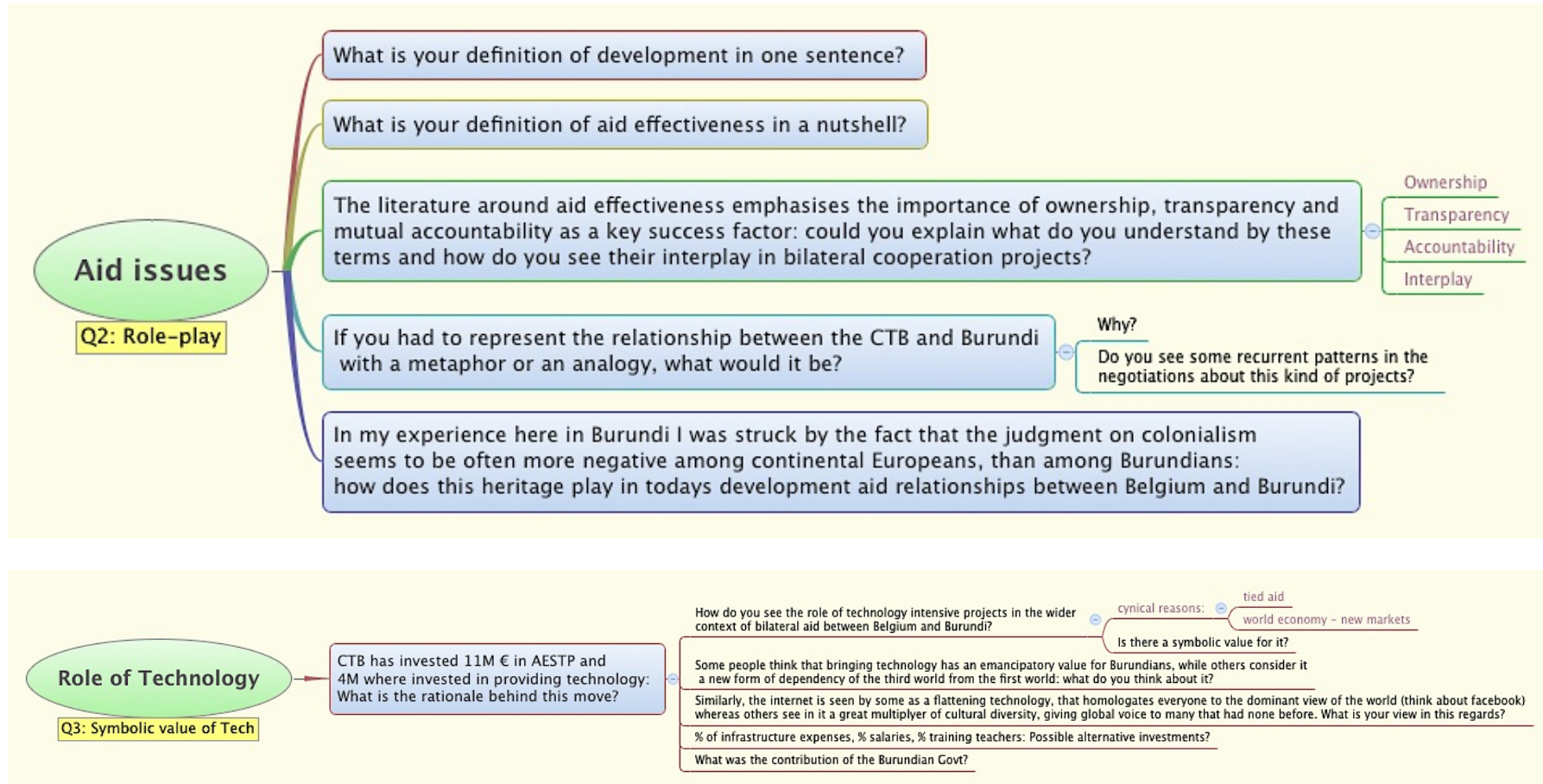


150



Source: Author.

Figure 4.14. Detailed view of two branches of the interview template used in third round of field research (November 2011).



Source: Author.

During interviews, I specifically inquired about the reasons why ICT4E projects are so difficult to implement and sustain in Burundi, and pre-grouped the presented reasons within five categories: infrastructure, usability, administration, power dynamics, and culture. Then I investigated the stakeholder role-play within the wider context of bilateral aid, soliciting a personal definition of both 'Development' and 'Aid effectiveness'. Here I explored the extent to which the official rhetoric around ownership, transparency and accountability and their interplay was familiar and shared. From this rather theoretical reflection I drilled down to the specific relationship between Belgian Cooperation and Burundi by asking the question: "*Imagine you are a movie director who has to pick just one picture for the poster of his new film that portrays the relationship between Belgian Aid workers and Burundians. What would that picture be?*" (see Sections 7.3 and 7.4). When this question proved too challenging for my interlocutor I would reformulate it as follows: "*Imagine you should explain the relationship between Belgian Aid workers and Burundians to a 9 years old child who is not experienced about 'the world': what example would you use? What analogy?*". Theoretically, metaphors, and by extension analogies, are mappings across conceptual domains. Such mappings are asymmetric and partial. Each mapping is a fixed set of ontological correspondences between entities in a source domain and entities in a target domain. When those fixed correspondences are activated, mappings can project source domain inference patterns onto target domain inference patterns (Johnson & Lakoff, 2008). Therefore the analogies they proposed bore evoked a wealth of implicit premises that would have been certainly difficult to spell out one by one. Moreover, I assumed that forcing interviewees to use their imagination would have made them less prone to political correctness and complacency (Dodman, 2003; Harper, 2002; Vannini *et al.*, 2013).

Finally, I examined the role of technology in this relationship, prompting the interlocutor with two opposing views: technology as a means for quicker emancipation from poverty, or as a way to maintain the traditional power asymmetry between Belgium and Burundi. The vast majority of the technological artefacts provided by the AESTP project were procured in Belgium, thus possibly reinforcing its influence over the Burundian educational system (see Chapter 3). The full script is presented in Annex 10.

Despite their experience in the domain of ICT4E in Burundi, some of these

questions turned out to be too theoretical to be meaningful to the interviewees. Thus I adapted the questions, rearranging their sequence, skipping some and adding others, so as to ‘stay tuned’ with my interlocutor (Grice, 1975; Gumperz, 1992c; Hermanns, 2004; Mantovani, 2008). As I recorded in my last ethnographic snapshot after the third field research:

“How appropriate is my methodology? Why? How could I improve it?”

The hardest for me during the interviews was to find the right balance between letting them talk about my questions rather freely and then having to choose whether or not follow their reasoning or interrupting them and go back to the interview template. Very often I had the impression the most interesting stuff came about because I left this space for them to express themselves. Yet the cost of this is to lose homogeneity between interviews and having some gaps.”
(Ethnographic Snapshot #8, Dec. 2011)

Interviewing technique

An interview is an *activity* (Hermanns, 2004) that has to be carefully staged. During my field research, I strove to set up my interview as depicted in

Figure 4.15. I would sit in front of the interviewee, with my laptop open to the side — using a wireless keyboard in order to avoid placing an obstructing barrier between me and my interlocutor.

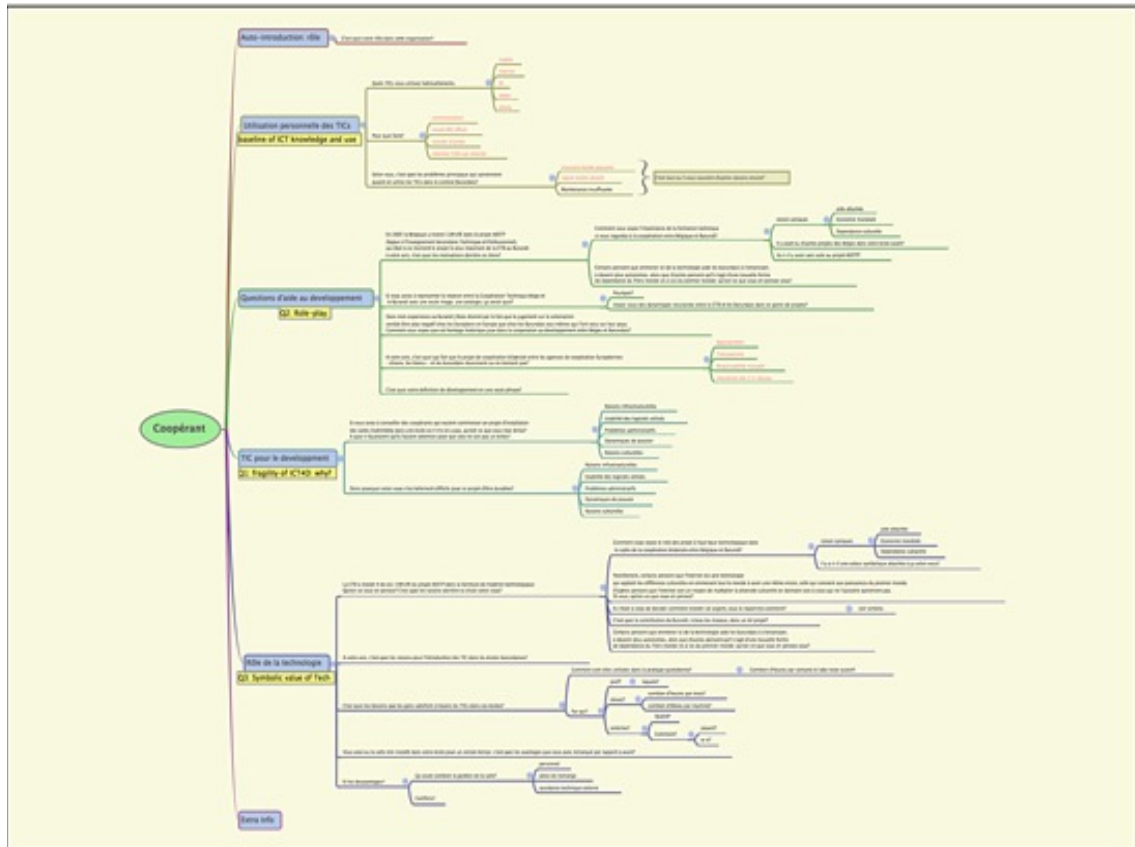
Figure 4.15. Preferred interview setup (simulation).



On the laptop, I ran mind-mapping software, XMind (www.xmind.net — last accessed 01.12.2012), with a pre-set interview template in the form of nodes — for themes — and sub-nodes — for questions — (see Figure 4.9 and Figure 4.16). XMind allows the user to move around the mind-map very easily using the keyboard, thus letting me touch-type the answers on the fly. Most importantly, this note-taking mode allowed me to hop quickly between different themes, following the conversation as it unfolded, without having to impose a strict sequence or to flip back and forth between different paper sheets, looking for the right place to jot down the answer. Moreover, having a bird's eye view on the script granted me a practical way to monitor the coverage of each topic and adjust my questioning on the spot, giving leeway to anecdotes or re-centring the discussion according to the circumstances. Furthermore, this method generates data directly in digital format, thus reducing the risk of illegible scribbles and sparing the time of handwritten notes transcription.

However, beyond the typical challenges of rural Africa, such as a sudden rain on a corrugated iron roof overtopping all voices, this technique had some drawbacks. Deciding the position and inclination of the laptop display was not a mundane task, as its in/visibility to the interviewee would mean different degrees of transparency: from not knowing what I was mysteriously writing 'behind the back' of the display, to conceding a glimpse on the mind-map structure and then turn it back towards me, to openly showing it while recording answers to reassure the interviewee that I was doing my job properly and gain her or his confidence in the process. Moreover, sometimes the interviewee's speech was overtaking my ability to type and navigate across the mind-map, affecting the fluidity of the conversation. Thankfully, most interviewees consented to be audio-recorded (see Annex 4), thus allowing me to fill any gaps in my note-taking afterwards. In hindsight, such a technological deployment may have intimidated my interlocutor more than I realised at that time, especially with respect to the symbolic value of ICTs (see Chapter 8) and may have also influenced their agreement to be recorded. As a countermeasure, I eventually decided to use pseudonyms for all my interviewees, overriding their consent to be cited with their real name, as a form of protection against unintended consequences of their declarations.

Figure 4.16. Bird’s eye view of an interview template from the third round of field research converted into a XMind mind-map. See Annex 10 for a detailed view and the list of questions.



Source: Author.

Assistant interviewer

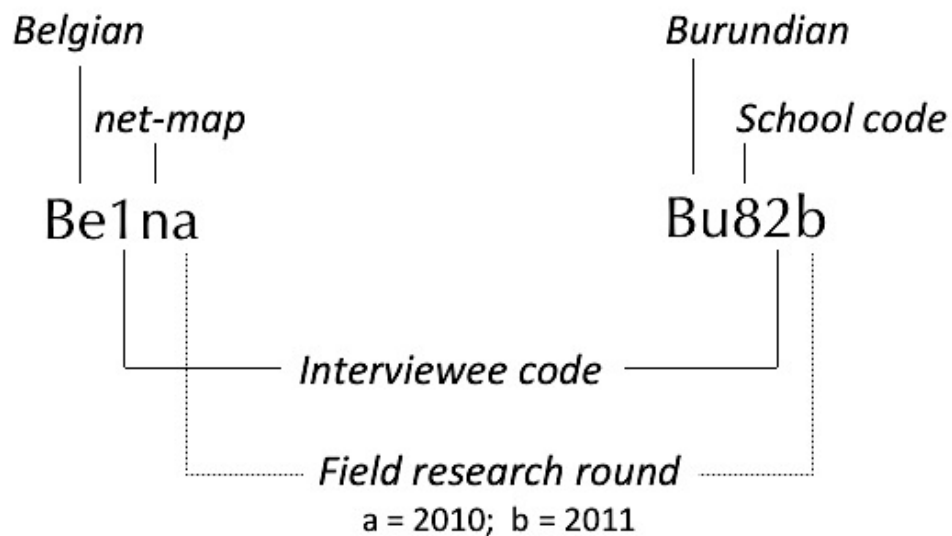
During the second period of field research, I conducted all of the interviews myself, but during my third field research I trained a Burundian colleague to interrogate a sample of pupils and teachers in those schools in which time constraints did not allow me to do it personally. René-Michel, whom I knew since 2006 when he served as my assistant in the first project I carried out in Burundi, conducted eight interviews on my behalf using the paper scripts and a second iPhone for audio recording.

In general, interviews with pupils were relatively short (<30 minutes) and were mostly carried out in a collective setting such as a class. The primary goal was to provide a ‘factual cross-check’ on the declarations made by the local principals and computer lab administrators on the use of the new facility. Interviews with teachers lasted approximately 30 minutes.

Data processing

Audio recordings of interviews totalled 72 hours. To transcribe the Burundian interviews, I contracted six Burundian university students whom I knew and trusted as my former pupils. I paid these students a fair amount (\approx £12 per transcribed hour — see Annex 11 for further details). Most interviews with Belgians were transcribed by a Belgian Jesuit father living in Nairobi, who had worked with the Belgian cooperation in the 1990s, before ordination. Filenames were coded for anonymity (see Figure 4.17).

Figure 4.17. Interview codes explained.



Source: Author.

Transcribers were instructed to code all the names cited in the interviews in order to protect the interviewees' identities in the event of accidental data loss (e.g. laptop theft). Audio recordings were transcribed verbatim using F4 software, which associates the audio file with the transcript, so that when clicking on a sentence the relevant bit of the conversation is played (see Figure 4.8). This allowed me to check the quality of their work. These methodological choices were motivated by two constraints: time and funds. While conscious that ideally I would have gained greater closeness to the data by doing all of the transcriptions myself, in the economy of the whole research I judged it more sensible to outsource this task to people whom I knew personally, trusted and were knowledgeable about the context.

Once transcribed, I imported both the interview audio-recordings and the transcript into NVivo 10 software (www.qsrinternational.com — last accessed 01.12.2012). An established practice for qualitative analysis (Clarke, 2005;

Saldaña, 2009), my codebook evolved over time in include a total of 124 codes (see Annex 13).

4.5.4 Selection essays

Selection essays were the handwritten answers to the three questions I asked during the trainee recruitment process (see Section 3.5.2), namely:

1. *Why would you put a computer lab in your school? What would you expect the outcomes to be? What advantages and inconveniences do you expect?*
2. *Are you happy about your current life? Why? Would you like to change something?*
3. *Why would you like to take part in this training? What would you like to get out of it, for yourself and for the school?*

These texts provided a sample of the attitudes Burundian teachers held towards technology, their life and towards initiatives proposed by outsiders. It must be stressed that these essays were written after I had given a presentation of the project, on site, to those teachers who attended it voluntarily (Figure 4.18), and this might well have introduced some biases.

Figure 4.18. Teachers writing the selection essays at the EPC school.



Source: Author (17.11.2008).

As noted in Section 3.5.2, it is common knowledge among Burundian teachers that participating in training officially endorsed by the Ministry of Education implies a substantial *per diem*: 25.000BIF for a day plus overnight stay ($\approx 16\text{€}$) equal to approximately a fourth of a monthly salary. The training was six months long, and entailed several multi-day sessions held in different parts of the country (regions most had never had the chance to visit).

Data processing

Themes in the essays were clustered by similarity and counted and charted in order to find the most recurrent ones. A detailed analysis is presented in section 8.2.1. The main value of this analysis resides in its rareness: seldom have teachers been surveyed about ICTs *before* its actual introduction in their schools (Shafika Isaacs, personal communication 08.02.2014 — see Section 5.2.3).

4.6 Analytical tactic

The matrix illustrated in Figure 4.19 summarises my overall analytical tactic

Figure 4.19. Analytical tactic.

Timewise, the analysis tended to proceed from the upper left corner towards the bottom right one. Grey ✓ indicate that the data for that school were not fully analysed, for their quality or completeness where judged insufficient. Δ indicates a diachronic comparison to highlight the evolution of the research setting. Blue text indicates second-order analysis.

Analytical Tactic	Overview of the situation across fieldworks																Unearthing of premises from critical incidents			Classification of Declarations			Implicit-Explicit Distilled premises vs. Declarations	Engagement Analytical interweaving of case-study with literature on Aid			
	Nano PC use within the lab (i. e. Office vs Encarta)				Micro Lab management within the school (i.e. Rules, Schedule, Shifts)				Meso Computer Labs Project related events (i.e. AESTP convenes principals)				Macro Aid-related facts (i.e. The Belgians built this school)				Critical incidents (i.e. Lab unused)	Context-related (i.e. class-size)	Relationship-related (i.e. They are...we are...)	Tech-related (i.e. PC are for...)	Rhetoric about Context	Rhetoric about Rels Belgo-Bu			Rhetoric about Tech		
Unit of analysis	FW1	FW2	FW3	Δ	FW1	FW2	FW3	Δ	FW1	FW2	FW3	Δ	FW1	FW2	FW3	Δ				Instrum.	Symbolic						
Schools	ETS Kamenge	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓										
	ETB Bubanza	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓										
	ETP Gitega	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓										
	ETSA Gitega	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓										
	LTK Kiremba	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓										
	EPC Kiganda	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓										
	ITAB Gifuruzi	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓										
ITAB Karuzi	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓											
AESTP + APEFE	Belgians	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓											
	Burundians	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓											
	Myself	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓											
Others	BTC interviewees			✓			✓				✓			✓													
1 st -order data	Ethnosnaps&Fieldnotes	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓						
	Interviews		✓	✓	✓		✓	✓		✓	✓	✓		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓			
	Net-maps		✓	✓	✓		✓	✓		✓	✓	✓		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓			
	Selection Essays																			✓	✓	✓	✓	✓	✓		
2 nd -order data	Longitudinal analysis				✓			✓				✓				✓											✓
	Critical incidents analysis																✓	✓	✓	✓	✓					✓	
	Declarations analysis																					✓	✓	✓		✓	
	Net-maps analysis									✓	✓	✓													✓	✓	✓

Source: Author.

After preliminary exploration of samples of my corpus of data, I considered the individual schools and the AESTP project as my primary units of analysis. This data was complemented by those generated by other respondents knowledgeable about the Belgian Technical Cooperation and Aid dynamics in general. The phases of the analysis are described below.

4.6.1 Phase 1: Classification

First I classified all the *factual descriptions* — that is all the information reported as an indisputably objective reality by the interviews — as well as my direct observations about the ‘the state of things’, across the four levels of analysis presented in the theoretical framework (see Section 2.4), namely:

- **Nano** — everything related to the use of PCs within the computer lab (e.g. “*We teach Office*”)
- **Micro** — everything related to the management of the computer lab within the school (e.g. Opening hours or “*When I visited, the school lab was empty*”)
- **Meso** — everything related to the Computer Labs sub-project (e.g. “*The AESTP convened us all [school principals] to discuss about the computer lab regulations*”)
- **Macro** — everything related to the wider context of Aid (e.g. “*This school was built by the Italians*”).

This classification was done taking into account the field research phase in which each specific entry has been generated, so that an analytical comparison could be carried out, case by case.

Second, critical incidents — any mismatch of expectations with regards to the project plan having significant consequences on the relationships between the actors involved — were listed along the way (e.g. *The Computer Lab projector is rented out to locals. Or A computer club is started and run by pupils*).

4.6.2 Phase 2: Longitudinal analysis

The comparisons between factual descriptions generated during Phase 1 were compared, searching for recurring patterns across cases.

4.6.3 Phase 3: Critical Incidents Analysis

The kind of ruptures I referred to as *critical incidents* have been studied for long (Goffman, 1959, 1974; Garfinkel, 1967; Coulon, 1987; Pedersen, 1995). Archer (1986, pp. 171–172) termed them “*culture bumps*” and offered a framework to analyse them:

- “1. Pinpoint some time when I have felt “different” or noticed something different when I was with someone from another culture. (...)
2. Define the situation. (...)
3. List the behaviors of the other person. (...)
4. List my own behavior. (...)
5. List my feelings in the situation. (...)
6. List the behaviors I expect from people in my own culture in that same situation. (...)
7. Reflect on the underlying value in my culture that prompts that behavior expectation. (...)”

Inspired by her work, critical incidents were individually analysed tracing them back to the mismatching implicit premises from which they derived by asking:

- 1. Whose *expectations* were mismatched?**
- 2. What would have been ‘normal’? What *presumptions* went unmet?**
- 3. What was the *emotional reaction* to the mismatch (i.e. Disappointment, wonder, fear, anger...)?**
- 4. Whose *responsibility* (fault/merit) was it? Who should intervene to fix it, if anybody (*accountability*)?**

This reflection aimed at pinpointing any disconnect between the *rhetoric* of responsibility, which is directly tied to ownership, and the *actual handling* of the issue in point, i.e. whenever the AESTP staff would come in to fix something on behalf of the local administration.

- 5. What kind of attitude was enacted? Looking downwards (Mm) or upwards (mM) or peer-to-peer (=)?s**

This relies on Patfoort’s (2001) work on nonviolent communication for conflict resolution, which asserts that the relational component of a communication can be skewed in the sense of a superiority complex (“Major-minor—Mm”) or of an inferiority one (“minor-Major—mM”) or levelled, on grounds of equality (“=”).

6. How did it affect the existing relationships (*trust-mistrust*)?

As discussed in Section 2.6.2, critical incidents have the potential to positively or negatively affect the relationships, depending the pre-existing level of trust and feeding back onto it (Mayer *et al.*, 1995; Tomlinson & Mayer, 2009).

7. What were the pragmatic consequences of the incident at the four levels, especially at the *micro* and *meso* ones?

This was meant to distinguish between critical incidents that only affected trust, but *did not* have an immediate impact on the organisational roles within the project, from those who did, e.g. when a computer lab manager was officially sanctioned (see Figure 5.5).

8. Was there any attempt of meta-communicating?

Inspired by *Pragmatics of Human Communication* (Watzlawick *et al.*, 1967; see also Schulz von Thun, 1997; Sclavi, 2003), explicit communication about the communication, i.e. about the relationship between the stakeholders, is an established strategy to overcome conflictual impasses such as those generated or manifested by critical incidents.

Once fleshed out, premises were clustered into three categories, coherently with the interview script of the third round of field research (see Annex 10):

- a) **context-related** (e.g. *In Europe maximum class size is 40 versus in Burundi maximum class size is 140*)
- b) **relationships-related** (e.g. *I have the right to give you orders versus We are on the same level*)
- c) **technology-related**, specifying whether the assumption was related to the instrumental or to the symbolic value of technology (e.g. *Computer enable learning versus Computers make us modern*)

Inventoried incidents were ranked according to the combination of the following dimensions, rated on a scale of 1 to 5:

1. the intensity of its emotional correlate (*affective dimension*)
2. the persistence of the bewilderment (*cognitive dimension*)

3. the magnitude of the ensuing effort to fix it (*behavioural dimension*)
4. its impact in the relevant socio-technical network (*ecological dimension*)
5. its value in exposing the different cultural premises (*heuristic dimension*)

The first three dimensions are reminiscent of the well-established research stream on attitudes in social psychology (Eagly & Chaiken, 1993). However, I did not embrace that tradition and its theoretical heritage. This threefold division only served as a first-hand heuristic to classify my data. Similarly, the fourth dimension approximates the perspective adopted by actor-network theorists (Latour, 2005; Stanforth, 2006). I share with them the core concern about the interconnectedness of human actors and technological artefacts constituting an emerging network in which each element has an influence on all the other elements and on the system as a whole. Table 4.8 presents the analysis of a critical incident as an example.

4.6.4 Phase 4: Declarations analysis

Interviews and net-map transcripts were analysed by clustering the opinions of the interlocutors when explicitly interrogated on context, relationships, and technology. This was in order to unveil the ‘public face’ of the technological imperative to assess the distance between the rhetoric and the premises emerging from the previous analysis.

4.6.5 Phase 5: Net-maps analysis

As explained earlier (Section 4.5.2), Net-Maps proved an excellent method to make implicit premises explicit. This is because the interviewee has to explain verbally the knowledge that is expressed graphically. Consequently, they complemented both the critical incidents and the declaration analyses helping to capture discrepancies between the two layers — implicit and declarative. Moreover, they allowed a richer understanding of the relationship layer, especially concerning issues of responsibility, accountability, and power. While critical incident analysis tends to focus on the lower levels — nano and micro — the analysis of net-maps focuses more on the higher levels — meso and macro. Furthermore, a meta-analysis of their digitised version through juxtaposition, allowed for a clearer and more robust comparison between Belgians’ and Burundians’ perspectives.

Table 4.8. The Critical Incidents Analysis (CIA) framework applied: an illustrative example.

Critical incident data	Critical Incident ID	25
	What happened?	Emile absent 75% of the times to work as a computer technician in town
	When?	2011
	Where?	ETSA
	Reported by:	Claude, ETSA Principal
	Nationality:	Burundian
	Data source code	bu30b
	Analytical Level (nano-micro-meso-macro)	micro
	Ambit (Context, Relationships, Technology)	Relationships, technology
Premises	Expectation	Emile should not neglect teaching to work as a computer technician in town
	Perceived reality	Instead he was absent 75% of the times
4.6.5.1.1.1 Emotional	4.6.5.1.1.2 Guts reaction	Claude's emotions are hard to decrypt: he seems to justify Emile with one hand while blaming him with the other. He tries to avoid the conflict. I was shocked, as Emile was one of my best trainees and someone I held as very correct and honest.
	Intensity (High/Med/Low)	High
Attribution	Whose responsibility? (fault and justification)	Emile's and the other absenteists', but he justifies him to a certain extent because everyone has the right to strive for a better life standard, so there is a certain tolerance towards this kind of absence. Yet, he also accuses the government for not providing sufficient salaries to teachers, who then are prone to search for other income sources. Apparent fear of putting the teachers in bad light in my regards. Complacent with my expectations on his role yet sympathetic with his fellow Burundian to avoid possible conflict. Still his laxism is unconvincing to me.
	Locus of Control (In/Out)	Out: not his fault, nor Emile's
	Who's to fix it?	Himself and teachers. Oddly, He waited the whole year to call them up and show them that he's been tracking their absenteeism
Communication	Attitudes (Mm/=/ mM)	Mm, although in the interview with me he underplays his power as principal of the school
	Effects on relationship	Formal warning to Emile. Increased tension between the two
	Effects on 'reality'	Teachers' and pupils' access to the lab and learning with ICTs was heavily impaired. Yet Emile was not actually punished, nor his behaviour was ever denounced to the AESTP. Emile's salary was multiplied manifold, causing envy among colleagues. He reduced his absenteeism the following school year
	Meta-communication?	None reported
Ranking	Affective	4
	Cognitive	4
	Behavioural	5
	Ecological	5
	Heuristic	5
	Final score	23

Source: Author

4.6.6 Phase 6: Second-order analysis

Eventually, the analysis converged into a final second-order analysis addressing the final research question (see Section 2.4.1) by exploring the technological imperative and its consequences for ICT4E research and practice. This also considers the larger context of Development Aid.

4.7 Conclusion

In this chapter I presented the rationale behind my methodological choices, linking them to the contextual constraints I faced due to my multiple roles. I described the methods I used throughout the three stages of field research. The Analytical tactic outlined above emerged through a progressive familiarisation with the data, a sort of ‘pre-digestion’. This first round of analysis allowed me to fabricate my own ‘scalpel’ to conduct a second-order analysis (Clarke, 2005; Saldaña, 2009) — See Figure 1.2.

The next chapter marks the passage to the second part of the thesis: the analysis of the empirical evidence I co-generated with my research interlocutors. It provides the first layer of this analysis by offering an overall account of the evolution of the research setting after the computer labs were installed in the schools in order to address the first sub-question of the key research question, namely “*Why do school computer laboratories often remain unused?*”. Chapter 6 will then zoom out from this ‘state of things’ to the relational dynamics between *developers* and *developees* triggered by critical incidents. This exploration will continue in Chapter 7, zooming further out to identify two *cultural matrices* claimed to mark a radical difference between the two parties’ worldviews. Finally, Chapter 8 will illustrate how this difference is largely masked by the dominant rhetoric of the *technological imperative*.

Part II: Disentangling intricacies

5 Computer labs: used, misused or underused?

5.1 Introduction

This chapter is based on my experiences in the school computer labs during my second round of field research (February — March 2010). I also discuss the evolution of these labs as explored in the third and final rounds in the field (November 2011). This overview is important for a preliminary assessment of the design-actuality gaps (Heeks, 2002) according to the different stakeholders, which will be analysed in greater detail in the following chapters. Resource constraints did not allow me to spend as much time in each school to monitor the use of the labs directly as I would have liked. I had to skip the two schools which never got the computer lab installed (ITAB Kigamba and ITAB Gihanga), thus impairing a fuller understanding of the project dynamics. I had to cross-reference my field observations with the accounts provided by interviewees. In practice, I was not always able to reconcile these different narratives. Table 5.1 summarises this inquiry.

Table 5.1. Overview of the situation encountered in the eight schools in the second (2010) and third (2011) rounds of field research.

Schools >	ETS Kamenge		ET Bubanza		LT Kiremba sud		ITAB Gifuruzi		ETP Gitiga		EPC Kiganda		ETSA Gitiga		ITAB Kanuzi		
Field research >	2010	2011	2010	2011	2010	2011	2010	2011	2010	2011	2010	2011	2010	2011	2010	2011	
Population																	
Pupils	2014	2675	886	1181	260	560	224	381	435	480	208	230	102	118	476	511	
Teachers	136	150	62	70	24	35	13	19	33	28	15	16	131	10	23	24	
Classes	n/a	40	n/a	21	n/a	12	n/a	12	n/a	12	n/a	12	n/a	3	n/a	14	
Average class size (max)	n/a	100 (130)	n/a	n/a	n/a	50 (60)	n/a	n/a	n/a	40	n/a	20	n/a	40	n/a	29 (max 87)	
Infrastructure																	
Power cuts	very rare	very rare	no	rare	rare	rare	frequent	rare	frequent	3 days/week	frequent	n/a	frequent	3 days/week	frequent	Every other day 1	
Computer Labs	5	6	2	3	1	1	1, not completed	1	1	1	1	1	1	1	1, not completed	1	
Operating System used	Windows XP Professional	Windows XP Professional Windows 7 theft	Windows XP Professional	Windows XP Professional Linux viruses, power unit burnt due to a lightning	Windows XP Professional	Windows XP Professional Windows 7 viruses, power unit burnt	Windows XP Professional lack of electric installation	Windows XP Professional power unit burnt, due to UPS failure	Windows XP Professional	Windows XP Professional Windows 7 power unit burnt, due to UPS failure	Windows XP Professional	Windows XP Professional MS Office 2007 expired	Windows XP Professional	Windows XP Professional Viruses, projector failure	Windows XP Professional	Windows XP Professional	Windows 7
Most important technical problem	n/a	n/a	n/a	n/a	n/a	n/a	lack of electric installation	power unit burnt, due to UPS failure	theft	theft	n/a	MS Office 2007 expired	n/a	Viruses, projector failure	n/a	none	
PC out of service/Total PC	0/60	n/a	2/40	15/71 (21%)	1/20	1/21	0/20	5/20 (25%)	1/20	1/20 (5%)	0/20	1/20 (5%)	1/20	2/20 (10%)	n/a	1/20 (20%)	
Internet	wifi (512/256kbps shared - 250\$/m)	wifi (512/256kbps shared - 250\$/m)	no	GPRS, yet too slow and expensive	Dial up (56 kbps)	Dial up (56 kbps)	CDMA	GPRS, yet too slow and expensive	no	WiMax 176 kbps dn	CDMA	no	CDMA	GPRS, yet too slow and expensive	no	GPRS (77 kbps dn)	
Use (Nano level)																	
Pedagogical use besides office automation	Autocad, Multisim, internet, Encarta 2009 (teachers only)	Autocad, Multisim, browsing, French, history, audio-video editing, maintenance informatics	Encarta 2009 (teachers only)	Multisim, Maintenance informatics, Encarta 2009 (teachers) "C'est pas sorcier" maintenance informatics	Encarta 2009 (teachers only)	English, "C'est pas sorcier", Automation design, physics, Encarta 2009 (pupils too)	Encarta 2009 (teachers only)	Encarta 2009 (teachers only)	no	Autocad, Encarta 2009 (teachers only)	Encarta 2009 (teachers only)	Autocad, Encarta 2009 (Pupils too)	Autocad, Encarta 2009 (teachers only)	Photoshop Encarta 2009 (teachers only)	n/a	Autocad, Encarta 2009 (Pupils too)	
Computer Lab Management (Micro level)																	
Managers	2	3, then 0	3	1	2	3	2	1	2	1	2	1	2	1	2	1	
Written rules (hanged and visible?)	Yes (No)	No	No	Yes (not publicly visible)	No	Yes (not publicly visible)	No	Yes (not publicly visible)	No	No	No	Yes (not publicly visible)	No	Yes (not approved nor visible)	No	No	
Schedule (hanged and visible?)	No	Yes (no)	No	No	No	Yes	No	No	No	No	No	No	No	Yes (not visible)	No	Yes	
Hours of volunteering (each lab manager)	17	15	20	12	20+week-end	12+week-end	25	16+week-end	21	n/a	18	12	15	15	n/a	24	
Access to externals (paid/free)	Yes (paid)	No	Occasionally	Occasionally	Yes	Yes	No	no	Unofficially	Unofficially	No	Yes	Yes	Yes	No	Yes	
Financing																	
Yearly cost of the Lab	n/a	2.000.000BIF (£800)	n/a	2.000.000BIF (£800)	n/a	3.000.000BIF (£1200)	n/a	1.000.000BIF (£400)	n/a	n/a	n/a	0BIF	n/a	2.000.000BIF (£800)	n/a	2.400.000BIF (£950)	
Increase of income for the Lab Mangers	No	No	Yes	Yes	No	No	n/a	n/a	Minor	Minor	Yes	Yes	Yes	Yes	n/a	n/a	

Source: Author.

5.2 Longitudinal analysis

This section highlights the most relevant aspects of this dataset following the four-layered structure illustrated in

Figure 2.7, specifically zooming out from the *nano* to the *micro*, *meso* and *macro* levels.

5.2.1 Nano (within the school lab)

Two main changes can be noted in the evolution of the labs at a nano-scale:

1. In 2010, most school managers did not conceive the possibility of self-directed use of the PCs by the pupils. In 2011, this possibility was contemplated, provided that one tutor was present (mostly the lab manager). Thus the tight surveillance regime over pupils using the computers was gradually loosened. Some possible reasons for that are presented in Chapter 8.
2. During the second field research period, the teaching of office automation was reported as the main activity performed by teachers with pupils in the labs. At that time (2010), the use of the lab to teach other curricular subjects was considered inconsequential, especially by school administrators. This is illustrated in the following conversation:

PB: "Est-ce que vous êtes au courant d'un prof qui a décidé de donner cours à l'intérieur de la salle [multimédia] même s'il était pas le cours de bureautique?"

Adélarde: Non non. On ne peut pas accepter.

PB: Pourquoi?

Adélarde: On ne peut pas accepter, c'est... On ne peut pas accepter parce que si ce n'est pas le cours de bureautique ou en relation avec l'informatique... Le minimum c'est que ça soit...plutôt parce que en fait on entre dans cette salle là pour que on utilise l'ordinateur, alors je ne comprends pas comment on peut entrer parce que les salles elles sont suffisantes dans notre école... disons elles sont amplement suffisantes pour ne pas utiliser cette salle pour d'autres fins."

[Bu20a, 04.03.2010]

PB: "Are you aware of any teacher who decided to deliver his course in the [computer] lab, even if it was not the office automation course?"

Adélarde: No no. We cannot accept that.

PB: Why?

Adélarde: We cannot accept that, it's... We cannot accept that because if it's not the office automation course or related to informatics... this is the bare minimum... rather, because we enter the lab in order to use the computer, so I don't understand how we could enter there since we have enough classrooms available in our school. Let's say they are more than enough not to be using the lab for other purposes."

[Bu20a, 04.03.2010]

This interviewee was ETP technical director and the computer lab was under his jurisdiction. When questioned about the use of the lab for courses other than office automation, he thought this a bizarre idea, and that I suspected his staff of misusing the lab as a mere physical space to teach subjects due to a lack of classrooms. The idea of any pedagogical use of the lab for subjects other than informatics was plainly unconceivable. This view was widespread in most of the schools in which I worked. Three schools, though, did take advantage of the set of DVDs provided by the project, featuring episodes of the French TV series “*C’est pas sorcier*” — a show to explain science to viewers in a captivating way. In these schools, the lab was simply used as a cinema.

During the last round of field research, some interviewees reported the use of labs to teach technical subjects using specialised applications (i.e. Autocad, Photoshop, Multisim), as well as an English language course. Teachers also used the labs to consult the Microsoft Encarta encyclopaedia to improve their knowledge about their own teaching domain. Interestingly though, no teacher was actively leveraging this educational resource by inviting the pupils to explore it autonomously or to search for some specific information. Besides this use, teachers were also taking advantage of the computer facility for private purposes (i.e. writing letters or typing theses on behalf of third parties as a paid service).

Given the wealth of research on the use of computer labs by teachers (Dillenbourg, 2013; Nussbaum, 2011; Pawar *et al.*, 2006; Slay *et al.*, 2008), my research rather focuses on the micro level, around which the literature is scarcer, and on the meso level, specifically on implementation issues at the national level, as opposed to policy making recommendations (Blignaut *et al.*, 2010; Jhurree, 2005; Krauss, 2013; Yusuf, 2005).

5.2.2 Micro (outside the lab, inside the school)

The majority of issues reported by interviewees (principals, computer lab managers, teachers and pupils) at the school level were not related to what happened *within* the lab, but rather to the *management* of the new facility. More precisely, the biggest reported challenges were the lab *schedule*, *regulations* and *maintenance*. Ensuring technological maintenance has been long acknowledged as a key issue for long-term sustainability, albeit still often underestimated in Development practice (Ellul, 1954; Schumacker, 1973; Willoughby, 1990) and in ICT4D/E (Kozma & Vota, 2014, p. 889; Proenza, 2001; Unwin, 2009). However,

the concept of maintenance is often bounded to the *financial* capacity to repair or replace failing devices, rather than focusing on the *know-how* necessary to both perform and manage these operations, especially in a school context in a thin-tech country.

The computer lab schedule

Only one of the schools (Lycée Technique Kiremba - LTK) had a visible and precise schedule, posted on the lab door, so users could know which class was hosted in the lab at any given time (Figure 5.1).

Figure 5.1. Computer lab timetable, Lycée Technique Kiremba Sud.

LYCEE TECHNIQUE DE KIREMBA-SUD

HORAIRE DE FREQUENTATION DE LA SALLE MULTIMEDIA

JOURS	CLASSES	PERIODE	CLASSES	PERIODE
LUNDI	EL1	14H15-15H05	EL2	15H05-16H00
MARDI			PL3	15H05-16H00
MERCREDI	EL IND1	14H15-15H05	EL IND2	15H05-16H00
JEUDI	EL IND1	14H15-15H05	PL1	15H05-16H00
VENDREDI	GC1	14H15-15H05	PL2	15H05-16H00

N.B. De 8h00-12h00 : Cours de Bureautique et le Personnel de l'Ecole

ACCORD DE LA DIRECTION

Source: Author (17.03.2010).

Another school (ITAB Karuzi) had a less precise timetable, distinguishing only between teachers' (*Enseignants*) and pupils' (*Élèves*) access times during mornings and afternoons (Figure 5.2). The remaining six schools declared that they had formally agreed on such a schedule during school committee meetings, and were able to provide it to me as a file, but this was not made visible to users. With some exceptions, teachers and pupils generally reported that timetables were not actually followed, even when they had been formally agreed. The possible reasons for this are discussed in Chapter 7.

Figure 5.2. Computer lab timetable, distinguishing between access times, ITAB Karuzi.

ETAB Karuzi Salle Multimédia J. Pierre HAVYARIMANA Gestionnaire

Emploi du temps

Période	Utilisateurs à servir	
	Elèves	Enseignants
Lundi	A M 9h00 - 12h20	✓
	P M 15h00-17h00	✓
Mardi	A M 7h30 - 9h00	✓
	- 10h00-12h00	✓
	P M 15h00-17h00	✓
Mercredi	A M 8h00 - 12h00	✓
Jeudi	A M 7h30 - 9h00	✓
	10h00-12h00	✓
	P M 15h00-17h00	✓
Vendredi	A M 8h00 - 12h00	✓
	P M 15h00-17h00	✓
Samedi	A M 8h00 - 12h00	✓

Note : 1. En cas de double emploi, la priorité est donnée aux élèves s'ils se font accompagner de leurs enseignants/encadreurs.
2. Toute utilisation en dehors de cet emploi du temps doit être avisée.

Source: Author (10.11.2011).

Computer lab regulations

Similarly, in 2010 only two schools out of the six visited confirmed that they had an official written document, approved by the school board, setting out the rules for the lab. In 2011, 6 out of 8 (2 labs had been completed in the meanwhile) had such written regulations. They were modelled on a template drafted during the original training sessions, and had been further adapted by the computer lab managers of ETSA (Table 5.2). In it, the statutory goals of the computer lab were expressed as follows:

Table 5.2. Excerpt from ETSA computer lab regulations (see Annex 14 for full text).

“La salle multimédia pourra offrir aux utilisateurs les services suivants :

Améliorer la qualité de l'enseignement par l'usage de différents logiciels spécifiques de graphisme, de dessin d'architecture et d'infographie.

Apprendre aux élèves, au personnel de l'ETSA et au milieu environnant de l'école à être de bons citoyens dans cette ère de la mondialisation en matière d'information et de communication en vue de faire face aux enjeux du monde économique en pleine compétitivité.

“The computer lab will offer the users the following services:

Improve the quality of teaching by using different software applications specific for graphic, architectural design and desktop publishing.

Teaching pupils, the ETSA personnel and the neighbouring population to be good citizens in these times of information globalisation and communication, in order to confront the stakes of the economic world in full competitiveness.

Apprendre aux élèves et aux enseignants des compétences informatiques qui leur permettent de concevoir, de créer et de réaliser des messages graphiques et de traitement des images sur l'ordinateur."

Teach pupils and teachers computer skills enabling them to design, create and craft visual messages and manipulate images on the computer."

Source: Author.

While these goals refer specifically to an art school, the underlying conception of ICTs can be condensed as follows:

1. ICTs as a means to improve the quality of education (*educational value*);
2. ICTs as a means to obtain citizenship in the information society (*aspirational value*);
3. ICTs as a means of empowerment through skills development (*instrumental value*).

These three values recurred in most interviews and are discussed in more depth in Chapter 8.

Moreover, the regulations concerned the financial management of the lab (Table 5.3):

Table 5.3. Excerpt from ETSA computer lab regulations (see Annex 14 for full text).

"Article 9

Les recettes sont perçues en termes de pourcentages moyennant un reçu ou quittance de paiement établis à cet effet. [voir explication en dessous] Elles sont affectées par le Conseil de Direction et de Gestion suivant la répartition ci-après :

- La salle multimédia recevra 50% des recettes perçues pour l'achat du matériel, pour l'entretien des machines et le remplacement des équipements défectueux.*
- L'école recevra 20% des recettes perçues comme contribution de la salle pour la subsistance de l'école.*
- Les Gestionnaires de la salle multimédia recevront 30% des recettes perçues comme honoraires de tous les services rendus aux clients et la*

"Article 9

Revenues are perceived as percentages via the presentation of a payment receipt created ad hoc [see explanation below]. They are distributed by the school board following this repartition:

- The computer lab will receive 50% of the revenues, in order to purchase consumables and spare parts and to pay computer maintenance.
- The school administration will receive 20% of the revenues as a contribution to the school budget, offered by the computer lab.
- Lab managers will receive 30% of the revenues as a compensation for all the services they provide to customers and for the lab

maintenance de la salle.

Article 10

L'école devra ouvrir un compte bancaire de transit de toutes les recettes perçues de la salle multimédia.

Article 11

Le compte bancaire devra être géré par 2 mandataires c'est-à-dire le Directeur de l'école et un Gestionnaire de la salle multimédia comme co-gestionnaire."

maintenance.

Article 10

The school will have to open a bank account for transiting the revenues perceived by the lab.

Article 11

Such bank account will have to be administered by two authorised representatives, namely the school principal and one lab manager as co-manager."

Source: ETSA computer lab regulations.

This repartition was discussed for the first time during the training course that I facilitated. Although the different school administrators formally approved it, it was never applied nor enforced.

As both a European and former lab manager in a Burundian school, this phenomenon (the striking gap between formal regulations and actual practice) was one of the most intriguing questions throughout my research journey. This puzzlement was shared by my Belgian colleagues, who tried to 'fix' this misalignment, with no success, as I explore further in Section 6.3.1.

Maintenance

In terms of infrastructural failure, between February and March 2010 (seven months after the official end of the Computer Labs sub-project) lab managers declared 5-10% of the PCs as faulty. They lamented a much higher failure rate ($\approx 20\%$) of the UPS associated with each workstation, thus exposing them to the fluctuations in voltage and frequency on the Burundian grid. As a result, the PC power adapter breakdown was the most reported hardware failure, followed by monitor failure, most likely for the same reason.

Problematically, the replacement batteries for the given UPS model were not available on the local market. Eighteen months later, the situation had worsened with nearly double the number of PCs not working because of hardware failure due to electric shocks. Similarly, both principals and lab managers complained about the project not providing them with spare parts to remedy hardware failures. This was because such parts were either too

expensive and/or unavailable locally. Several school principals complained to me about the unaffordable costs of lab maintenance. They felt that AESTP leaders neglected this aspect, and should have provided suitable funds to maintain the labs effectively.

This is a familiar problem in technology-intensive development projects, especially those using tied aid (Greenhill & Watt, 2005, p. 26). Surprisingly though, three of the schools administrators openly declared that the school had a financial surplus available. This was generally an amount far greater than what was needed to repair the lab. Indeed, the overall yearly cost of the lab was relatively low in relation to the school budget (£400-1200 per year out of a £24.000 budget in the smallest school, ETSA).

Thus, across all schools, the decision to unlock funds for lab maintenance was not actually dictated by lack of financial resources, but resulted from other reasons, explored in Section 8.5.2. Rather, the impossibility of procuring necessary parts in the local market caused the most complaints. In particular, toner cartridges for the laser printers had to be imported from abroad — a procedure that no school administration, urban or rural, was able or willing to carry out. This impeded the use of the lab and the computer infrastructure as a whole. Teachers who were eager to take advantage of the new facility for their work were unable to, and had to resort to standard, time-consuming procedures:

Enseignant de math ETP: "J'aimerais bien pouvoir utiliser le PC pour taper les docs administratifs comme les examens, mais il nous disent qu'il n'y a pas assez de poudre pour tous les profs, donc il nous demandent de faire ça avec stencileuse donc je m'assois à coté de la secretaire et elle tape et après on fait copies.

Les fiches de points on nous les donnent, on pourrait bien faire les moyens avec l'ordi[nateur], mais ca serait un travail double comme on n'a pas suffisamment de poudre, on peu pas l'imprimer, donc on fait avec calculette [et elle me montre le son mobile Nokia de base]."

[Bu25a, 04.03.2010]

ETP math teacher: "I'd really like to use the PC to type administrative documents such as the exams, but they tell us that there is not enough toner for all the teachers, so they ask us to do with the stencil, so I sit besides the secretary and she types and then we make copies.

The bulletins they are given to us, we could well do the averages with the PC but it would be a double work, since we don't have enough toner to print them out so we do with the calculator [she shows me her basic Nokia mobile]."

(Bu25a, 04.03.2010)

This problem was partially solved when a proactive lab manager from a rural school scouted the capital city until he found someone to refill the cartridges, illustrating the importance of *local improvisation* (Ali & Bailur, 2007; Heeks, 2002,

2008). Even then, it took several months before other lab managers learned of this, as the habit of sharing information among group members did not take root (see *The Internet* below).

In terms of software, the possibility of restoring the original configuration of workstations with a few clicks (see Section 3.5.2) proved effective and was appreciated by lab managers. Conversely, the procedure I taught them to upgrade the original software configuration by creating a new restorable image of the hard drive proved to be too complicated for most of the trainees: only three of them mastered it. Yet, even in those three labs, new applications were installed on an *ad hoc* basis, without any reflection of their wider impact on the lab. Ironically, it was my Belgian colleague Firmin who performed most such upgrades. In the process, he overrode the local lab managers' authority, without considering the two cardinal principles for good lab governance identified in the project rationale and professed during the training, namely (a) the homogeneity of the computer pool, and (b) the easy restorability in case of accidents such as viruses, lost passwords, and hard drive failure. Consequently, the tasks of lab managers became more complicated and demanding. Belgian decision-makers were impervious to this technical complexity (see Section 5.2.3).

The Internet

There was wireless Internet coverage via CDMA in six of the ten target schools when the computer lab project was first conceived and approved. This was a slow connection (≈ 30 kbps), except in the school in Bujumbura (ETS) which enjoyed reasonably high performance (512/128 kbps shared) from an urban Wi-Fi connection. At the beginning of the project, the three national mobile operators — UCOM (later to become LEO), Africell and Onatel — raced to upgrade their infrastructure to GPRS EDGE to conquer the fast growing mobile Internet market. Yet, this did not happen as fast as was proclaimed. Instead, the leading operator was stalled for eight months and was not ready to activate the new infrastructure (GPRS antennas and modems) by the time I finished my second field trip. Consequently for the entire duration of the training, a decent Internet connection was available only in one school. This hindered the possibility for peer-to-peer communication among trainees, despite the creation of a listserver on Yahoo Groups (www.yahoogroupes.fr) for that very purpose. It was only in early July 2009, a few weeks before the final ceremony of the

Computer Labs sub-project, that UCOM accepted my request to sponsor the project by providing one of the new GPRS modems for each school involved. Nevertheless, such modems were never really used, despite written commitments by principals and my best efforts to ensure their functionality (Annex 11). In addition, lab managers lamented that their superiors did not provide the necessary funds for them to go online, despite their solemn promise to do so when they were entrusted the modem. If they did, the connection was still too slow to be viable.

Contrary to my expectations, newly appointed lab managers seldom resorted to email communication to ask me — their former trainer — or anyone else for advice when confronted with technical difficulties. Out of 314 messages exchanged on the Yahoogroups listserv between December 2008 and November 2011, the first 204 had been prompted by myself during the training to familiarise with the use of email. After my departure (7 July 2009) the ex-trainees sent 110 messages. Of these, only 21 (19%) were technical, originating from only four individuals, while the rest were socially oriented: wishes for special occasions, jokes or chain letters. This pattern of Internet use was limited in frequency and not instrumental to the management of the lab. The relative paucity of these messages was justified by interviewees with the lack of Internet access, either due to missing 3G coverage or to cost. The typology of message instead is coherent with the primary importance attributed to social bonds in the Burundian culture (see Chapter 7). However, two pedagogical advisors manifested another concern:

[1] *Pierre-Clavert: "Monsieur Paolo, moi je me dis que (...) c'est bien d'être dans le groupe PEIBU, mais c'est mieux aussi de se parler dans le privé; si non le PEIBU c'est le public. Si on veut parler et que 30 personnes doivent lire tout ce qu'on a écrit, moi je suis très gêné, je m'excuse, ça c'est ma vision personnelle."*

Pierre-Clavert: "Mr. Paolo, I'd say that (...) it's good to be in the PEIBU group, but it is also good to talk privately, otherwise the PEIBU becomes the public. If one wants to talk and there are 30 people who will read everything we've written, I'm sorry, but I'm disturbed, this is my personal view."

[2] *Eric: "Personnellement, moi je voulais aussi annoncer des nouvelles, mais comme chez nous au BEET [leur propre bureau] la salle ne fonctionnait pas, alors je n'avais pas des choses à raconter, et comme Jules vient de le dire, si c'était entre nous deux, et ne pas entre 30, j'allais vous raconter ces problèmes, mais nous sommes le bureau pédagogique! Je vais annoncer que chez*

Eric: "Personally, I'd also like to write some news, but since the computer lab at the BEET [their own office] was not working, I had nothing to tell, and as Jules just said, it was between the two of us, not between 30 people, that I would tell you about the issues we had, but we are the pedagogical bureau! Am I going to say that our lab

*nous rien ne va alors que c'est bien nous
qu'on doit superviser les autres!?"*

[Bu05a, 12.03.2010]

is not working when we are supposed
to be supervising the others!?"

[Bu05a, 12.03.2010]

Thus, a listserv was challenging the traditional idea of privacy associated to the writing of a letter [1] and also it exposed a higher ranking group, the pedagogical advisors, to the negative judgement of the teachers they supervised, since the computer lab they were supposed to manage in their office (the BEET), was not working [2]. This concern over hierarchy and status is treated extensively in Chapter 7.

In 2010, when asked about their use of mobile phones, lab managers reported that the majority of the exchanges among them were socially oriented. Yet in both cases — voice and SMS — there was a higher incidence of technical help requests compared to email communication.

5.2.3 Meso (Computer Labs sub-project: national level)

At the end of the training (06.07.2009), four of the ten schools initially targeted were still waiting to have the lab infrastructure installed (furniture and wiring). Two of these (ITAB Gifuruzi and ITAB Karuzi) had received the equipment (see Annex 7) while the remaining two (ITAB Gihanga and ITAB Kigamba) had not, due to organisational hitches. Not surprisingly, the principals and the trainees from these schools expressed their disappointment to the project leadership. During my second and third round of field research, I decided not to visit the latter two schools due to time and resource constraints. This meant that I could not investigate the effects of their disappointment on their perception of CTB work and Aid projects more generally. Consequently, my analysis is based solely on the data related to the eight schools that eventually had a computer lab installed. In March 2010, both ITAB Gifuruzi and ITAB Karuzi were still waiting for the lab infrastructure to be installed by the APEFE, which had committed itself to resume the original project plan uncompleted by the AESTP project. In 2011, such installations were finally completed.

The interaction between the AESTP project and the newly equipped schools was not limited to the provision of infrastructure. Between the end of the training period (July 2009) and the end of the overall AESTP project (December 2010), the new computer labs were co-opted by the project managers to improve teachers' computer skills. An extensive computer literacy retraining

programme was organised by CTB to train teachers on the newly installed Microsoft Office 2007 software. Courses on AutoCAD, CAAO, and Multisim technical software were offered to those teaching industrial design, electricity, and electronics. Moreover, thanks to Firmin's very proactive intermediation two schools (ETS and ETSA) rented out the lab to external entities (NGOs, other CTB projects) as a means to self-finance the lab and the school. At ETS Kamenge, the flagship school for vocational training in the capital, a system of subscriptions was set up to manage access to the computer labs. Besides Internet surfing, a wide range of services, including colour printing, scanning, and CD/DVD burning, were offered both to the school population and to the general public. This was to help ensure financial sustainability, mainly through paying for their very expensive Internet connection (£150/month in 2010).

Teachers and pupils were required to pay only a symbolic sum of less than £2 per three months. This decision was controversial, however, and some local teachers did not want to pay to enjoy a service provided by their school. In response, Firmin resolved to waive the fees for ETS teachers. Yet, only four out of 150 teachers regularly used the lab, much to his disappointment. By November 2011, the subscription system was no longer active and the labs often remain unused, as was reported by pupils and as I observed during my visits. This was despite the technical director's declaration of their optimal and frequent use. Why this was the case is discussed in Section 5.3.4.

5.2.4 Macro (Bilateral cooperation)

The political sphere heavily influences the Burundian educational system. This has important implications for the Computer Lab sub-project as well, especially in the two years following its implementation.

In June 2010, Burundian President Pierre Nkurunziza was re-elected for a second term. It was also the second democratic election after the end of the civil war and the ensuing constitutional reform. Since the previous election in 2005, the UN peacekeeping mission (Operation des Nations Unies au Burundi — ONUB — counting up to 5000 blue helmets at its peak) had shrunk and had been converted into an institutional capacity building mission (Bureau Intégré des Nations Unies au Burundi — BINUB) with no military contingent. In the six months prior to the election, the electoral campaign was fierce and tensions rose in the country. This culminated in the withdrawal of all of the President's opponents from the election in protest against the anti-democratic irregularities

perpetrated by the ruling party (<http://www.hrw.org/world-report-2011/burundi> — last accessed 03.09.2013). Nevertheless, the election took place and Belgium, together with the rest of the international community, acknowledged Nkurunziza's second victory. The subsequent 2010–2013 Aid commitment by Belgium to Burundi amounted to €162M (with €50M conditionally allocated — approximately £130M and £40M)²⁷. This represented a 392% increase over the 2004-2006 plan originally entailing the AESTP project.

The election buttressed the importance of political affiliation in Burundian society. Schools were no exception, as the role of principal of a vocational high school was considered a political one (see Section 9.5.2). These political dynamics were so culturally bounded to be almost impossible to grasp from the *etic* perspective of a non-African foreign enquirer. Yet references to “*le parti*” alluding to the ruling party abound in respondents' interviews, revealing the importance of this dimension, which is further analysed in Section 7.6.1. This instability was lamented in the AESTP project final report:

“Les mutations de certains des responsables des écoles appuyées par le projet et de l'Homologue de l'AT Pédagogue (qui était aussi directeur du BEET) ont perturbé dans une certaine mesure la bonne marche des activités de l'intervention.

Le Ministère ayant l'éducation sous sa tutelle a connu plusieurs changements institutionnels qui ont eu un impact sur le déroulement des activités du projet.”

(Rapport Final Projet AESTP — Oct. 2010, p. 9)

“The substitutions of certain managers of the schools supported by the project and of the homologous of the Pedagogical Technical Assistant (which was also the head of the BEET) have perturbed to a certain extent the smooth implementation of the intervention activities.

The Ministry responsible for Education has known multiple institutional changes which have had an impact on the roll out of the project activities”

(Rapport Final Projet AESTP — Oct. 2010, p. 9)

This brief account testifies to the degree of institutional instability in which such projects had to operate in Burundi. This was in stark contrast to the Eurocentric project planning logic (Easterly, 2007). Moreover, it highlights the primacy of relationship over institutional structures, both in terms of political membership (*group dimension*) and interpersonal rapport (*individual dimension*). These dimensions are explored further in the next section, through the analysis of critical incidents.

²⁷ Source: Belgian Technical Cooperation.

5.3 Critical incidents analysis

Having defined critical incidents as *puzzling mismatches of expectations that have significant consequences for the relationships between stakeholders and ultimately, for the project outcomes* (see Section 2.6.2) and the analytical framework I crafted and applied to them (see Section 4.6.3), this section now turns to an analysis of the *critical incidents* at the nano, micro, meso and macro levels. Once inventoried, critical incidents related to the computer labs were clustered into two categories: *misuses* and *underuses*. Misuses are instances where Belgians lamented an abuse of project contributions, while Burundians' considered them legitimate. Underuses are cases where Belgians complained that project contributions are not being fully exploited, or not at all (Cuban, 2001; Oppenheimer, 2003), whereas the Burundians' reported a normal or even optimal use of them. As a backdrop to both these categories, a third cluster — *uses* — includes the rare occurrences in which the Belgian and Burundian narratives seem well aligned and the project goals fulfilled. These are not critical incidents as such, yet they help provide a fuller and more balanced understanding of the project workings.

5.3.1 Profiling actors' voices

To understand the alignments and misalignments of the Belgian and Burundian narratives concerning the uses and misuses of computer labs, it is necessary to first clarify whose narratives I am referring to, since some characters are more prominent than others (Goffman, 1959). In the Belgian camp, four voices — Cédric's, Firmin's, Gilbert's and Julie's — dominated, and co-constructed the 'Belgian narrative'. Their organisational roles were interlinked in a delicate balance. As AESTP project leader, Cédric was the highest-ranking member in the organisation. When asked what was the hardest part of his job in that role he answered:

Cédric: "C'est motiver les gens. (...) Motiver les gens sans donner les motivations des primes. Motiver les gens dans tous les domaines; pour que ça change, pour que ça s'améliore, pour que on puisse organiser les plans. C'est motiver les gens, c'est tout. Le reste c'est les petits problèmes de tous les jours mais bon..."

[Be1a, 11.03.2010]

Cédric: "It is to motivate people. (...) To motivate people without resorting to monetary incentives. To motivate people in every domain, so that it changes, so that it gets better, so that we can organise plans. It is to motivate people, that's all. Everything else are little everyday problems, but hey..."

[Be1, 11.03.2010]

Faced with this challenge, Cédric found in Firmin his best Belgian ally, as he was hardworking and charismatic enough to ‘get things done’. In return, Firmin would influence Cédric’s decisions towards his own areas of interest and expertise, namely industrial technical subjects (electrical engineering, informatics and mechanics). This in turn disappointed Gilbert, who at that time was Firmin’s peer, as both were working for APEFE as technical assistants. He was responsible for the vocational training in agriculture and therefore mostly concerned with the four agricultural schools (ITAB) targeted by the project. Gilbert did not share Cédric’s and Firmin’s faith in the technological imperative. He contended that ITABs deserved more attention, given that Burundi economy is eminently agricultural: 93% of Burundian labour is employed in agriculture (source: The World Bank databank, 2011). In his first interview, during my second round of field research he declared:

Gilbert: “(...) on a tendance à faire miroiter aux gens que l’ordinateur c’est le bijou technologique les plus important qu’on peut mettre dans une école. Moi je ne partage pas ça, quoique je connais la valeur de l’ordinateur, et son importance dans le monde, dans la vie de tout le jour, et dans le monde de l’enseignement.”

[Be3a, 04.02.2010]

Gilbert: “(...) We tend to lure people with the computer as the most important jewel one can put in a school. I don’t share that view, though I know the value of computer and its importance the world across, in everyday life, and in the world of teaching.”

[Be3a, 04.02.2010]

Moreover, as a Congolese person, highly educated in Belgium, Gilbert’s ‘Development approach’ was much more dialogical than imperious, stressing the importance of a patient pedagogy attuned to the local conditions:

Gilbert: “Néanmoins moi je reste critique, très critique sur la méthodologie de l’introduction des outils innovants dans les écoles, sachant bien que les gens partent d’un néant, de zéro, et qu’ils connaissent pas, et qu’on vient leur emmener du matériel sans un accompagnement psychologique ni technique assez structure, ça peut amener des perturbations ou ce qu’on appelle en vulgarisation agricole, un rejet de la technologie.”

[Be3a, 04.02.2010]

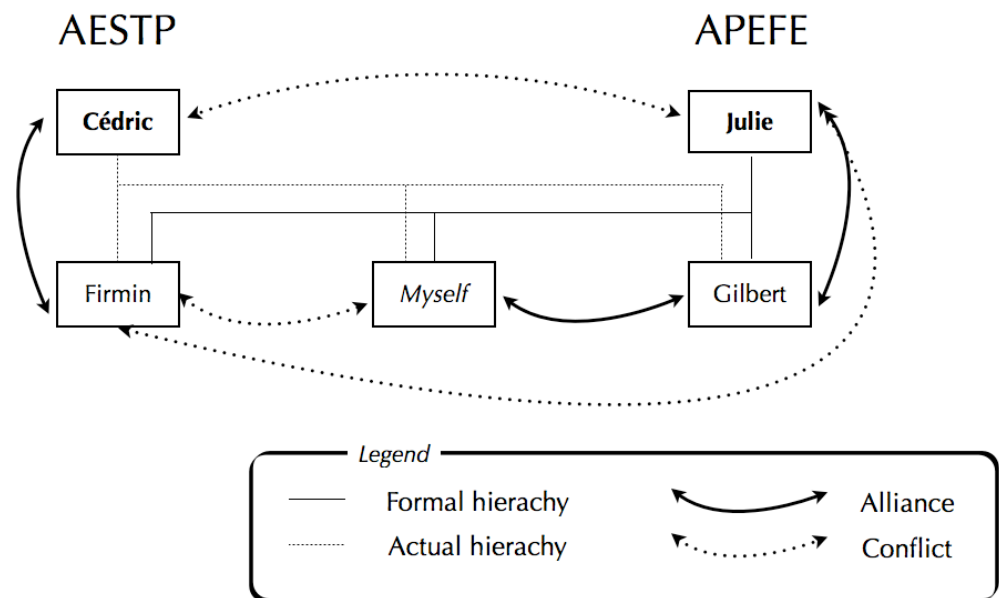
Gilbert: “After all I remain critical, very critical on the methodology adopted for the introduction of innovative tools in schools, well aware that people start from nothing, from scratch, that they don’t know and that we are bringing them some equipment without any properly structured psychological nor technical support, this may lead to perturbations, or — as we call it in agricultural popularisation — a rejection of technology.”

[Be3a, 04.02.2010]

This diversity in approach resulted in a latent tension between him and both Cédric and Firmin. Yet, while a peer on the APEFE organisation chart (Figure 5.3), Gilbert was older and more experienced than Firmin in such projects and had been working with APEFE for much longer, while Firmin had no previous

experience in Development projects. Being very blunt and ‘a doer’, Firmin had collided early on with their boss, Julie, APEFE’s country representative. Julie was mainly a bureaucrat, very concerned with formal correctness and paperwork, and less accustomed with the problems on the ground. Hence, Gilbert’s technical competences as ‘a man of terrain’, together with his political sensitivity and his diplomacy skills, prevented the Firmin-Julie conflict from escalating, thus maintaining a fragile yet viable balance within APEFE.

Figure 5.3. Relationships between my key European interlocutors in the AESTP project as per my perception.



Source: Author.

When I entered this social setting as the new technical assistant for informatics, I quickly found myself torn. I had been a good friend of Firmin before becoming his colleague (which had led to his endorsement during my recruitment process). However, I quickly realised that my approach with our Burundian counterpart was very different from his, and closer to that of Gilbert. Having to work on the Computer Labs sub-project in handover — Firmin laying out the infrastructure and myself the software configuration — this difference ultimately degenerated into an intense conflict. The pragmatic and theoretical implications of this dynamic are analysed in Section 8.5.3. As for now, the aim of this digression is to cast light on the interpersonal background against which the actors’ voices — mine included — projected their shadow, so as to facilitate the reader’s immersion in the context under examination.

5.3.2 Uses

By the time the Computer Labs sub-project was carried out, the pattern of relationships between the AESTP project leaders in the Belgian camp and the principals of the ten *targeted*²⁸ schools in which the computer labs were to be installed, had stabilised. Four schools were considered exemplary by the project staff (ET Bubanza, LT Kiremba, ETSA Gitega and ITAB Gifuruzi), two were described as very problematic (ETS Kamenge and ETP Gitega) and the remaining four (ITAB Karuzi, ITAB Kigamba, EPC Kiganda, ITAB Gihanga) were regarded as in-between. The main criterion behind this Belgian judgment was the degree of compliance with project desiderata and evidence of good governance “*en bon père de famille*”—‘As a good father’, with an idiomatic French expression often used by both Belgian and Burundians. Interestingly, the exemplary schools were all administered by principals:

- a. Who were capable of strong leadership when managing other people.
- b. Who had been educated — when not directly involved — in religious institutions, which in two cases (LT Kiremba and ETSA) still supervised the schools within the framework of a national State-Church agreement (*Écoles sous convention*).

For the sake of this section, I present only two cases, ET Bubanza and LT Kiremba, as these were the schools most frequently reported as being good examples. A short analysis concludes the section by comparing the two schools.

Lycée Technique de Kiremba Sud (LTK)

The Belgians often praised the LTK administration as a counterpoint to the unsatisfactory situation in other schools:

Firmin: “(...) *C’est partout pareil. Sauf dans quelques cas comme Kiremba où là la propreté c’est quelque chose d’essentiel parce qu’ils veillent au bien-être des élèves. Vraiment un souci du bien-être.*”

[Be2b 23.11.2011]

Firmin: “(...) It is the same everywhere. Except in few cases like Kiremba where the cleanness is something essential, because there they care about the wellbeing of pupils. Really, a concern of wellbeing.”

[Be2b 23.11.2011]

In this case, the principal had been able to extend the school by having the pupils build some new classrooms as part of their practical training, finding

²⁸ *Ciblées*. This was the official French term used in the project official documents, which carries an implicit unidirectional, active-to-passive approach.

ways to co-finance the AESTP project contributions with local resources. The administrative staff were cohesive, with a very committed school treasurer (who was also recruited as a trainee for the lab management course), a diligent *Préfet des études*²⁹ responsible for the day-to-day bureaucratic administration of the school, and a zealous *Préfet de discipline* — responsible for the discipline of the pupils outside school hours, especially in the dormitories.

A small village in the middle of hilly Bururi province, Kiremba had been a Swedish Pentecostal mission for many decades (Figure 5.4). Although located in a very remote, rural area, it has a distinctive atmosphere, immediately perceivable by any visitor: it feels clean and orderly, despite its bumpy dust roads. It even hosts a small university. Its inhabitants are remarkably more hospitable than anywhere else in Burundi I visited during my five-year stay. The other Burundian trainees who lodged there during the lab installation shared this perception. After the five years of the AESTP project (2005-2010), the performance of the pupils in the State exams had become the best among all of the vocational schools, including urban schools. While it is impossible to distil a recipe for this success, the team spirit developed by the principal and its closest collaborators contributed significantly. Regarding the computer lab specifically, in November 2011 its manager would spend 10-12 extra hours per week there as a volunteer, granting access to both LTK pupils and external students from the neighbouring university. This was possible because the rural environment was less demanding in terms of survival, as basic needs were met by fertile land and livestock. Furthermore, there was not much to do in town after office hours in terms of night life, and so visiting the lab became quite appealing (see Chapter 8 for a thorough discussion on the symbolic value of ICTs).

²⁹ In the Burundian school system, this figure is responsible for the day-to-day bureaucratic administration of the school.

Figure 5.4. Trainees in front of the Swedish Pentecostal church, Kiremba Sud.



Source: Author (04.04.2009).

École Technique de Bubanza (ETB)

The principal at ETB was very proactive and entrepreneurial. He invested the project's financial aid to extend and renovate his school buildings. Also, he co-opted pupils attending the masonry specialisation in his school to do the installation work — for free — as a practical workshop. Moreover, he was a skilled financial administrator and helped reduce wasteful expenditure, as he proudly declared:

Théophile: “(...) je n’ai jamais eu des problèmes avec les fonds. A chaque année, sauf la première où j’ai liquidé la dette d’au bout de 8,000,000BIF, la deuxième année je suis resté avec un reliquat de 25,000,000BIF, la troisième je suis resté avec un reliquat de plus de 35,000,000BIF. (...) Alors pour vous dire que moi dans la gestion je n’ai jamais eu de problèmes et c’est pour cela que pour moi garder, maintenir les équipements placés par l’AESTP, pour moi ça ne me posait pas de problème. Alors chaque fois que j’ai un problème, j’écrivais: comme j’écrivais au projet AESTP, j’écrivais au ministère, au ministre qui

Théophile: “(...) I’ve never had problems with funds. Every year, except the first year when I’ve evened the debt amounting to 8,000,000BIF, the second year I remained with a surplus of 25,000,000BIF, the third year with a surplus of 35,000,000BIF. (...) This is to say that as far as management goes, I’ve never had any problems, and that’s why form me to keep and maintain the equipment given by the AESTP, for me it was not a problem. Thus every time I had a problem, I wrote: as I wrote to the AESTP project, I wrote to the ministry, to the minister to give me the funds. And before

me donne des fonds. Et avant que le ministère donne des fonds, je touche dans les fonds de l'école et je remplace le matériel; et il me donne des fonds pour rembourser. C'est comme ça que j'ai travaillé, et j'ai pas eu de problème."

[Bu10b, 21.11.2011]

the ministry give the funds, I withdraw from the school funds and replaced the equipment; and it gives me the funds to reimburse. This is how I worked and I haven't had any problems."

[Bu10b, 21.11.2011]

The Belgians, especially Cédric, appreciated this proactive attitude. He had convinced a class in his former school in Bruxelles to raise funds to support their Burundian homologues. They collected €50,000 (\approx £40,000) and organised a school visit to Burundi to work with them and donate the money. Cédric channelled most of these funds to the ETB, in virtue of the entrepreneurial capacities of its principal. The latter had obtained a donation of 34 refurbished PCs from the President of the Republic himself and had installed an extra computer lab, besides the two that were installed during our project. It had been set up by his school teachers, who, being technicians, could adapt a regular classroom infrastructure appropriately (electric installation, iron bars on windows for security, etc.). The school's administrative staff worked well under his supervision. Despite the Ministry of Education not formalising the role of the lab manager, he led the administrative process within the school. He also alleviated the lab manager's teaching workload to allow him to perform his newly acquired duties. Moreover, faced with overcrowded classes, he allowed a particularly skilful pupil to lead a *Club d'Info* — a self-organised computer club — and teach basic computer literacy to his peers during afternoons.

This is in line with the learner-centered, constructivist, pedagogical approach advocated by many scholars in the ICT4E arena (Mitra, 2010; Negroponte, 2007), yet also criticised by many others (Hollow, 2010, p. 294; Kirschner *et al.*, 2006; Unwin, 2008) as insufficient. While I endorse a situated view swaying across the learner- to teacher-centered continuum (Majumdar *et al.*, 2005, p. 15; Selinger & Gibson, 2004), ETB's *Club d'Info* is particularly significant in that it subverted the traditional teacher-pupil hierarchy, so strongly embedded in Burundian culture (see Section 7.6.1), for the sake of exploiting the new facility to the best of its potential. Indeed the very idea of using the lab to teach subjects other than computer literacy (i.e. Electrical engineering or physics) gained impetus here more than in other schools. This was also due to the continuous scaffolding provided by Firmin after the end of the Computer Lab sub-project.

Discussion

These two case studies highlight four key principles:

1. *Context* is crucial (Avgerou & Walsham, 2001). In both cases, the new computer lab could be successfully integrated into the school ecosystem because the local actor-network was sufficiently robust and actors' interests *did* reassemble around it (Latour, 2005). Context here is much more than the physical environment. It also entails:
 - a. the history of the place;
 - b. the local micro-culture; and
 - c. the specificities of the actors as unique persons, irreducible to role boxes on organisation charts.

2. *Flexibility* and *local improvisation* are indeed important factors in determining the uptake of new technological facilities (Ali & Bailur, 2007; Heeks, 2002, 2008; Majumdar *et al.*, 2005). Especially in the case of ETB, the principal's capacity proactively to challenge tradition was a key element in ensuring fair use of the new facility.

3. *Local, committed leadership* is essential, in partial accordance with the conclusions of the large-scale IEA SITES³⁰ 2006 study on pedagogy and ICTs use across 22 countries (Law & Pelgrum, 2008, p. 276):

"The most important school-level factors influencing teachers ICTs-use for lifelong-learning practices are *the vision that principals have in regard to ICTs-use* supportive of lifelong-learning pedagogy and the technical and pedagogical support available to teachers and students." (italics mine).

Such accordance though, is only *partial*, because the vision of the ETB principal with regards to ICTs was well beyond their educational benefits and yet underestimated the importance of technical and pedagogical support for ICTs — no differently from everybody else in the project.

4. *Political intelligence* is also key. Both LTK and ETB principals were critical of certain attitudes and approaches revealed by the AESTP Belgian representatives, denouncing an authoritarian *modus operandi*. Yet both were capable of elevating themselves above the

³⁰ IEA is the International Association for the Evaluation of Educational Achievement. SITES is Second International Information Technology in Education Study.

unpleasantness of these attitudes, reminiscent of the colonial period. They complied to the extent of meeting their own objectives, without losing agency or dignity vis-à-vis the Belgian counterpart:

*Théophile, directeur ETB: "Moi ce que j'ai observé au cours de la réunion ou au cours de mes visites à l'AESTP, à la direction général ou même au BEET, ce que je trouve, il y a une sorte de bras de fer, une sorte d'hostilité ou de mécontentement. Par exemple les conseillers de la direction de la DGEST et du BEET ne voient pas d'un bon œil, spécialement Cédric. Alors ils sont contre Cédric et de là ils semblent être contre le projet, ce qui ne devrait pas se faire dans le cas. Parce que nous avons même longtemps discuté sur ce point lors de l'atelier. Cédric disait: «Moi je vous ai prévenu depuis longtemps que le projet va prendre fin, vous n'avez rien fait pour montrer que vous avez encore besoin du projet!». Alors comme ces conseillers sont contre Cédric, ils disaient: «Partez, même sans vous, nous avions survécu et nos écoles continuaient de fonctionner!» Alors on voyait que là ce sont des réponses sèches qui sont lancés. Alors nous [les directeurs] leur avons dit: «Entendons-nous sur une chose: ne confondez pas Cédric au projet AESTP! Et si le projet AESTP renouvelle le mandat, d'abord que le ministère [de l'Education] soit convaincu de l'utilité du projet AESTP et qu'il demande le renouvellement du mandat sans le renouvellement de Cédric, parce que ça ne doit pas aller de pair! Donc on renouvelle le mandat, mais on ne renouvelle pas le mandat de Cédric. Vous dites que vous n'avez pas besoin de lui, c'est tout, **nous sommes dans la coopération**, on nous donnera un autre mais il faut que le projet soit renouvelé parce que le projet à travaillé avec 20 écoles dans une multitude d'écoles. Il y a d'écoles qui n'ont reçu aucun soutien, mais qui ont besoin d'être soutenues, d'être appuyées pour qu'elles aussi puissent avancer»."*

[Bu10a, 08.02.2010]

*Théophile, ETB principal : "As far as I'm concerned, what I observed during the meeting or during my visits at the AESTP headquarters, or at the directorate [for vocational education] or even at the BEET, what I've found is that there is a kind of arm wrestling, a kind of hostility or discontent. For example the directorate advisors do not look kindly upon, Cédric in particular. Thus they are against Cédric and it looks like they are against the project, which shouldn't be the case. Because we've even discussed at length over this point during the workshop. Cédric was saying: «I've warned you for long that the project will reach an end, you did nothing, so as to show that you still need the project!» Hence since these advisors are against Cédric, they replied: «You can leave, even without you we have seen that the schools have survived and were still working.» Thus you could see these were harsh replies that were uttered. So we [the principals] told them: «Let's agree on one thing: do not mix up Cédric and the AESTP project! And if the AESTP project renews its mandate, let first the Ministry [of Education] be convinced of the AESTP project usefulness and ask for its mandate renewal without the renewal of Cédric's appointment, because the two things must not go together! Thus they renew the mandate, but they do not renew Cédric's mandate. You just tell you don't need him, that's all, **we are in the cooperation [framework]**, they will give us another [person], but it is necessary that the project will be renewed, because the project has worked with 20 schools amongst a multitude of them! There are schools which didn't receive any support, yet they need to be supported, to be buttressed so that them too could progress»."*

[Bu10a, 08.02.2010]

This passage illustrates the intensity of the strain between Cédric and his

Burundian counterparts. It also describes the interviewee's degree of awareness: he was well aware that the cooperation game had its rules ("*nous sommes dans la coopération*" — in bold), and that it is a political game one has to play intelligently. This degree of awareness and detachment was not matched in the Belgian camp. This echoes Mosse's (2005, p. 95) interpretation of the dynamics he experienced during a longstanding DFID project in rural India:

"Ultimately, 'local knowledge' was a collaboratively produced normative construct bargained between IBRFP staff and Bhil villagers that obscured diverging interests and manoeuvres (within project team and villages alike). In practice, what became prized as IBRFP's 'participatory planning process' (PPP) was not a process of participatory learning based on local knowledge, but rather a process through which Bhil farmers acquired a new kind of planning knowledge and learned how to manipulate it."

Similarly, 'support to vocational education' was "a collaboratively produced normative construct bargained between" the AESTP staff and the Burundian vocational education brokers (ministerial and pedagogical advisors, and school principals) "that obscured diverging interests and manoeuvres". The brightest among those Burundian brokers "acquired a new kind of planning knowledge and learned how to manipulate it" to their advantage. Thus, while affirming an idiographic approach to the local context, I maintain that bilateral Development projects do embed distinctive dynamics that interact with that context in ways that can be analogous across locations, time, and targeted sectors. The remainder of this thesis analyses those "obscured diverging interests and manoeuvres", presenting supporting evidence, so that it can propose an interpretive model aimed at navigating them more consciously.

5.3.3 Misuses

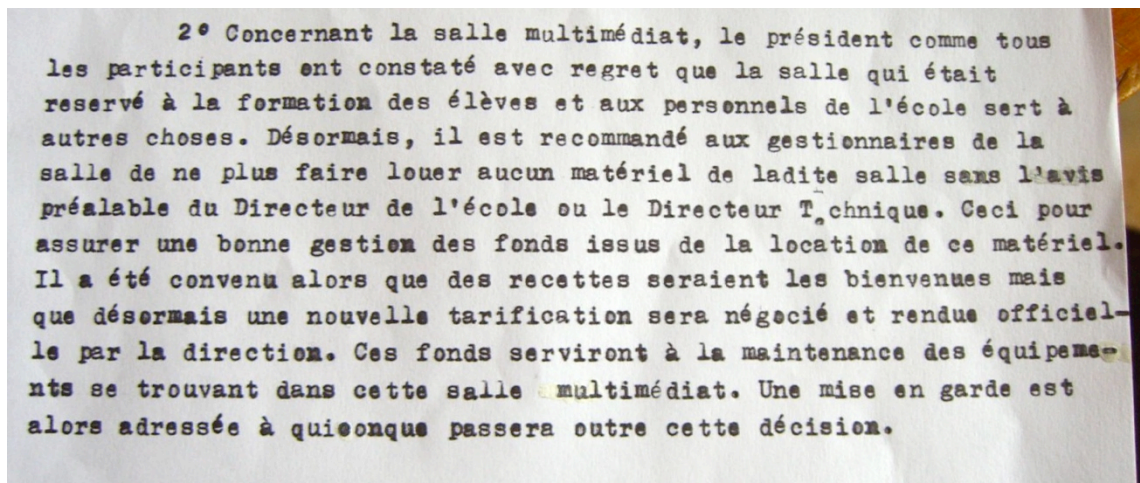
This section examines the critical incidents where AESTP project contributions were used in ways that were not planned and were criticised by Belgians, while considered acceptable by Burundians. A class of critical incidents that I termed paradoxical is presented: one related to *improper rental* of the newly acquired equipment and one related to the *unintended consequences of empowerment*, although the two are interrelated.

Improper rental

The École des Travaux Publiques (ETP) de Gitega was peculiar among the targeted schools in that it strikingly lacked leadership. Its principal had suffered from an illness that required him to be in and out of hospital, thus leaving the

school without strong guidance. For several months, for example, the school had no running water available in its dormitory. With the formal leader missing, Adélar, the technical director acted as principal. Being a former pupil of the school and a revered teacher there, he was very attached to the school and proud of it. When the lab training opportunity was presented, he could not participate because of his higher responsibility towards the school. After the training, Adélar discovered that one of the newly appointed lab managers secretly rented out the school video projector to university students for his sole economic benefit. For the acting principal, this was scandalous, and he sent out a *demande d'explication* — a formal admonition letter requesting a written justification for a teacher's disappointing behaviour, with the explicit threat of dismissal, followed by an official communication, *typewritten*, setting new rules to prevent similar episodes (Figure 5.5).

Figure 5.5. Official communication issued by the Technical Director to the Computer Lab manager to clarify the episode of Videoprojector rental.



Translation: "2. With respect to the computer lab, the president [of the school council] as well as all have ascertained that the lab that was reserved for the training of pupils and of the school personnel is used to other aims. Henceforth, it is recommended to the lab managers not to rent out any material belonging to the mentioned lab without the preliminary approval of the school principal or of the technical director. This is in order to ensure a proper management of the funds deriving from the rental of this material. It has then been decided that the revenues would be welcome, yet new rates will be negotiated and made official by the [school] administration. These funds will serve for the maintenance of the computer lab equipment. This is a warning to whomever may trespass this decision." Source: Author (01.03.2010).

However, when I interviewed him, the accused teacher claimed that everything had been properly registered, the rental service had been paid and a receipt issued to the customer. Moreover, the teacher stated that the technical director himself had asked to rent the video projector out to a friend in a neighbouring city for five days; a request he refused, considering it too risky. Unfortunately, time constraints did not allow me to investigate the case further. The unruly lab manager was still in charge two years later, and so was the technical director.

They had agreed not to rent out the lab equipment. Yet, for the sake of this analysis it is worthwhile observing that:

1. It is not unreasonable for teachers to rent computer lab equipment out as a service to the local community, especially if their salary is insufficient, and they had been told that the lab had to generate income for their school.
2. If the local school ecosystem lacks formal hierarchy and sufficient alternatives to the sustainability of the school, the introduction of technology is likely to disturb existing power relationships. This can potentially affect school life in more ways than those observable when looking at ICTs use *within* the computer lab alone — as much ICT4E literature does (Dillenbourg, 2013; Farrell & Isaacs, 2007; Nussbaum, 2011; Slay *et al.*, 2008)

Similarly, in other schools (ETSA, ETS) computer labs were rented out to external entities, such as NGOs or others. This was openly endorsed by the project leadership as a viable way to self-finance the school and the lab itself. This provided additional revenue for maintenance and employment fees. Firmin was particularly proactive in finding such customers, which in some cases were representatives of other CTB projects occurring in the country. This phenomenon occurred in two schools, the overcrowded ETS Kamenge (2000+ pupils) and the tiny ETSA Gitega (118 pupils). The obvious downside was that when used by these external groups, the labs were not available for the school population. Teachers or pupils were often forced to use the labs during inconvenient times, such as Saturday mornings, in the case of ETSA. In several other cases, the two official project goals — improving the quality of teaching and learning *and* setting up a self-financing system for sustainability — collided. Ironically, this led to Cédric himself complaining about it:

Cédric: “(...) à l’ETSA, ils louent leur salle [multimédia]. Ce que je trouve regrettable, c’est qu’on loue la salle pendant la journée pendant deux semaines; et pendant deux semaines les élèves ne peuvent pas aller dans la salle. Il faudrait louer la salle après les heures de travail, après les heures de cours pour que les élèves puissent en bénéficier pleinement.”

[Be1a, 11.03.2010]

Cédric: “(...) At ETSA, they rent out the [computer] lab. What I find regrettable is that they rent it out during the day for two weeks. Thus for two weeks pupils cannot access the lab. The lab should be rented out after working hours, after the courses, so that pupils could take full advantage of them.”

[Be1a, 11.03.2010]

At ETSA, the lure of easy money overrode pedagogical concerns. For the Belgians, both incidents, at ETP and at ETSA, were further examples of the Burundian 'innate' tendency to be money-driven and manipulative. Moral judgments aside, the socio-economic gap between Belgians and Burundians makes it difficult to understand and empathise the social pressure faced by a teacher earning approximately £56 per month and struggling for survival, while an expatriate earns several thousands pounds and subsistence is not an issue.

Empowerment side effects

ETSA's computer lab manager, Emile, was a dynamic and talented trainee, and passionate about informatics and teaching. This granted him a lot of respect from among the Belgian quarters: Cédric, Firmin and I were all praising his skills and devotion. However, it turned out that during his first school year as a lab manager, he had not honoured 75% of his teaching duties (Figure 5.6).

Figure 5.6. Teachers' absenteeism data, as collected and processed by ETSA's principal.

Highlighted in red the percentage of presence in class, calculated against the official total according to the ministerial program for informatics (a term which corresponds to basic computer literacy).

CLASSE										Total	% de rendement
Période /séance /branche	1 ^{er} Trim. : 10 sem.	2 ^{ème} Trim. : 11 sem.	3 ^{ème} Trim. : 5 sem.	1 ^{er} Trim. : 10 sem.	2 ^{ème} Trim. : 11 sem.	3 ^{ème} Trim. : 5 sem.	1 ^{er} Trim. : 10 sem.	2 ^{ème} Trim. : 11 sem.	3 ^{ème} Trim. : 4 sem.		
Français	11	26	9	11	22	9	10	16	4	118/195	60,51% ✗
Anglais	23	23	9	26	25	9	17	17	5	154/206	74,75%
Maths	26	56	23 (105/130)	25	54	27	20	52	4	178/230	77,39% ✗
Physique	0	6	3	0	7	3	0	4	11	182/230	79,13% ✗
Chimie	8	10	4	7	12	4	8	11	2	66/77	85,71%
Civisme	15	13	4	5	9	1	7	5	3	62/77	80,51%
Psycho	-	-	-	7	10	4	8	9	4	42/51	82,35%
EPS	8	7	2	5	11	3	6	10	3	55/77	71,42% †
DA	36	39	19(94/130)	36	61	29(126/130)	30	34	7(71/130)-		
PD	35	45	14(94/104)	28	44	16(88/104)	34	52	16(102/100)		
DT	36	49	19 (104/130)	28	40	9(77/104)	55	49	20(124/126)		
CER	25	27	15	27	36	12	32	44	16	234/308	75,97%
PUB	14	10	10(34/52)	09	16	8(33/52)	19	26	12(57/75)		
BUR	21	19	5	28	22	11	-	-	-	106/104	101,92%
INFO	-	-	-	-	-	-	4	9	0	13/52	25% ✗
HA	30	22	9	24	36	11	27	27	06	192/231	83,11%
TOTAL											

Source: Author (16.11.2011).

Instead, he was busy servicing other computers in town, and being paid for it over and above his school salary. In 2011, when asked about the financial benefits of the training he had received, he openly affirmed that his salary on average had tripled, with a record month when he earned as much as 13 times

his basic teacher's salary. Now he owned his own laptop and his living standard had improved significantly. At the community level — and through the intermediation of ETSA's principal himself — he had been contracted by a neighbouring Catholic private school to ensure the maintenance of their computer lab. When directly interrogated, both Emile and the principal denied any money exchange concerning this business. Thus, to understand why the principal tolerated Emile's absenteeism and why Emile, so passionate about teaching, neglected his teaching duties, it is necessary to examine the specific school context more closely. The principal was initially quite worried about the potential effects of the new lab:

*Claude, directeur ETSA: "En fait moi je le dit toujours, je le dis toujours! Il faudra faire attention: si les élèves fréquentent Encarta ou s'ils fréquentent autre chose vous risquez de ne pas répondre à certaines questions, et je crois l'avoir dit au cours de la réunion précédente. À ce moment là moi je ne suis pas gêné de ne pas répondre à tel ou tel autre question mais vous vous serez... vous allez remarquer qu'il y a des questions que vous ne serez pas a mesure de répondre. Donc il y a certains professeurs qui ont demandé quand est-ce qu'on va ouvrir [la salle multimédia]. J'ai dit: «Si vous voulez, c'est monsieur Emile qui est chargé de la gestion, il va organiser la salle de la manière que chacun pourra avoir sa période d'exploitation». À ce moment j'attends réellement s'ils vont répondre a cela, sinon je leur ai expliqué le **danger** qu'il y a, j'ai expliqué le **danger** qu'il y a."(bold mine)*

[Bu30a, 02.03.2010]

*Claude, ETSA principal: "In fact I always say it, I always say it! We'll have to be careful if pupils access Encarta or if they explore something else you will risk not to be able to answer certain questions and I believe I said that during last meeting. At that point I'm not bothered if I can't answer this or that question, but you will be... you will realise that there are some questions that you will not know how to answer. So there are some teachers who asked when are we going to open [the lab]. I replied: «If you wish, it is Mr Emile who is in charge of the lab management, he's going to organise the lab in such a way that everyone will have his time with the computer.» Right now I'm waiting to see if they are really going to answer to this, as far as I'm concerned, I explained to them the **danger** that is there, I explained the **danger** that is there." (bold mine)*

[Bu30a, 02.03.2010]

The use of the word *danger* signals the extent to which the new technological facility was perceived as a threat to the status quo. This resonates with the findings of a survey conducted by BECTA in the UK (Jones, 2004) in which teachers reported to be particularly afraid of entering the classroom with limited knowledge in the area of ICTs with their students knowing that this was the case (see also Bingimlas, 2009). Moreover, he was very concerned about *status*, particularly his own, within the school hierarchy. Thus while under the pressure of pleasing AESTP representatives, who insisted on having written computer lab rules, he organised and discussed the rules proposed by Emile and his colleague, which later become the template for all the other schools.

However, he never followed them through by paying the lab managers their share of the revenues generated by the renting of the lab, finding multiple excuses not to comply.

Such betrayal of agreement pushed Emile to take his silent revenge by 'taking his due money' elsewhere and being less responsive to the principal's calls. While the principal's initiative to track his teachers' performance was not limited to Emile, his poor performance alone was enough to risk dire sanctions, and eventually contributed to reduce Emile's absenteeism the following year.

I do not delve further at this stage into this interpersonal dynamic between principal and lab manager: its analysis continues in Section 8.5.2. Yet, it is relevant here to stress that:

1. Time and again, the unique alchemy of a specific context shapes the actual use (or non-use) of the lab: the talented Emile, his defiant principal, their unspoken rivalry, local income-generating opportunities, AESTP pressures, and many more elements that are likely to remain invisible to the occasional visitor.
2. Once individuals are empowered by the training they received, they are likely to use this to their advantage, which is coherent with their cultural background and therefore cannot be planned for or controlled by foreign project officials (Shrum, 2005). For instance, one of the first uses of the ETSA lab was to offer free computer literacy training for the local primary school principals. No praise for this initiative ever emerged during my interviews with the Belgian officials, as it was not an expected outcome of AESTP. Yet in this example, a sense of *ownership* was achieved, which is pivotal to Aid effectiveness. This can imply the surrender of control and predictability: not easy for any project manager and less so if he has to report to superiors who do adopt that logic!
3. The effects of such mismatches in the relationship between Belgian and Burundian partners was limited only because Emile's absenteeism was not evident to them. The domestic tension between Emile and his principal was also unspoken; both shared the goal of maintaining a positive image in the Belgians' eyes, to ensure their continued support.

5.3.4 Underuses

This section deals with the most frequent typology of critical incidents: those in which the AESTP project contributions were not properly exploited, according to the Belgian staff, while the Burundians' narrative was one of normal, proper use. The main critical incident is that computer labs were often found empty during school hours. This was in conflict with the project desiderata and with the wishes expressed by Burundian stakeholders before the Computer Labs sub-project was carried out:

Cédric: "La plupart des salles ne sont pas gérées du tout. Il y a très peu de bénéficiaires, élèves ou professeurs, dans les salles. Dans la plupart des cas, les salles restent vides."

[Be1a, Cédric, 11.03.2010]

Cédric: "Most of the labs are not managed at all. There are very few beneficiaries, pupils or teachers, in the labs. In the majority of cases the labs lie empty."

[Be1a, Cédric, 11.03.2010]

The reasons for such perceived underuse were various and depended on the specific context (Jhurree, 2005; Schiesaro, 2003). Nevertheless, a common issue is recognisable across the three largest schools in the project (ETS, ETB and ETP): overcrowded classes. The critical incident in point is twofold: first, I explain why class overpopulation is a major obstacle to the use of computer labs; second, I focus on the reasons why this phenomenon went unseen and unresolved throughout the implementation period, despite being literally 'in our faces' the whole time — where 'our' refers to both the AESTP project staff, me included, and the Burundian counterpart.

Overcrowded classes and ICTs-enhanced education

When I started working on the AESTP project, the 180 new PCs meant to equip nine³¹ computer labs had already been ordered and were on their way to Burundi. It seemed logical to distribute the equipment equitably across schools (therefore 20 PCs per school). Yet, the largest school, ETS Kamenge, had been allotted 40 PCs to equip two labs, given that its population exceeded 2000 pupils. AESTP experts, drawing on their experience in Europe, had judged that 20 machines per computer room was the optimal number to allow for a fair quality of the training. Had one considered the average class sizes in the target schools, 42 in 2007 (MEdu, 2009), this would have implied two pupils per

³¹ The number rose to 12 when the project actually started, thanks to the procurement of some extra refurbished PCs through a French NGO working in the same field.

machine, which was suboptimal but still acceptable. Yet, when unpacking this overall average, the three largest schools had class sizes of between 70 to 100 pupils, with a maximum of 122.

In the relevant literature, there seems to be a consensus that ‘size matters’ (Little, 2008) and overcrowded classes ($n > 60$) reduce the quality of learning (UIS, 2012, p. 2; UNESCO, 2010, p. 166) with or without computers. This is even more the case when dealing with vocational education, which should provide pupils with environments that are conducive to practical learning, such as workshops and laboratories. While technological devices such as the multi-mouse (Nussbaum, 2011; Pawar *et al.*, 2006) have been devised to address this issue, the AESTP project experts never considered such experimental solutions.

The new Burundian ministerial programmes had been crafted through a lengthy process involving the AESTP and APEFE experts, the relevant officials in the Burundian Ministry of Education and also some entrepreneurs as prospective employers. They suggested that every class had to spend a minimum of two hours a week in the computer lab to learn office automation (*Bureautique*). Yet, despite overpopulation, by November 2011 the five³² labs at ETS Kamenge remained largely unused. During that third round of field research, I visited the school twice and only one of the five labs was in use at the time. Pupils and teachers lamented the lack of access, confirmed by my former trainees and lab managers in the case of ETB and ETP:

PB: “Est-ce que vous voyez que les salles sont normalement occupées la plupart des temps ou bien souvent ils sont vides?”

ETS pupils: “Souvent elles sont vides.”

[Bu86b, 15.11.2011]

PB: “Do you see that the computer labs are occupied most of the time or are they often empty?”

ETS Pupils: “They are often empty.”

[Bu86b, 15.11.2011]

Conseillers Pédagogiques: “La fois passée nous étions à l’ETB, on voit encore qu’il y a des salles qui sont toujours fermées.”

[Bu05b, 25.11.2011]

Pedagogical Advisors: “Last time we were at ETB, and we still see there are some computer labs that are always locked.”

[Bu05b, 25.11.2011]

PB: “Est-ce que tu trouves que la salle était exploitée à maximum de sa capacité avec le temps?”

PB: “Do you reckon that the computer lab was exploited to the maximum with time?”

³² Three computer labs complemented those installed during the sub-project.

Juvenal, lab manager ETP: "Non."

[Bu21b, 13.11.2011]

Juvenal, lab manager ETP: "No."

[Bu21b, 13.11.2011]

Cédric considered such under-utilisation to be a scandal, given the glaring need, and an upsetting failure. The other European staff involved in the project (myself included) shared this disappointment: *"Look! We gave them everything they need, and they [Burundians] don't use it!"*. Next, the management layer is examined to help understand why this mismatch occurred.

Management intricacies

In 2009, in order to address this issue, the ETS school administration decided to split large classes into groups of up to 40 pupils each, to accommodate two students per computer. This implied either having the informatics teacher repeat the same lesson twice with each subgroup (*double shift*), while having the rest of the class left alone or supervised by another teacher, or to appoint a second teacher to teach the two half classes in *parallel*. The first solution was regarded as impracticable because it overburdened the teacher (without overtime pay) and prevented him³³ from fulfilling the ministerial program in view of the final exam. Given the inability of the Ministry of Education to hire new computer teachers due to a chronic lack of funds, the school administration co-opted some of the existing teachers skilled enough to teach office automation. Their workload was redistributed to other colleagues.

Yet, when class sizes expanded to more than 100 pupils in 2010 and 2011, such an arrangement became increasingly complicated to handle. ETS teachers preferred to devote their free time to seek other sources of income (Bennell & Akyeampong, 2007; Mulkeen, 2010, pp. 125-126):

Zéphirin, gestionnaire ETS: "En Europe, tu viens enseigner, on te paie juste, même si tu vas pas rester avec quelque chose tu vas parvenir à vivre! Si tu ne parviens pas à vivre, comment tu vas enseigner? Si tu n'as pas mangé le soir, est-ce qu'au cours de la journée tu vas bien enseigner? C'est pas possible. Si tu as des problèmes, on est le 15, où est-ce que je vais aller à la fin du mois? le loyer du mois passé je n'ai

Zéphirin, ETS lab manager: "In Europe, you come teach, they pay you fair, even if you are not going to have something left you will manage to survive! If you don't manage to survive, how are you going to teach? If you haven't eaten the night before, do you think you are going to teach well the following day? It's not possible. If you have some problems, we are the 15th,

³³ There were few female teachers working at ETS and none was involved in teaching in the computer labs.

pas payé, qu'est-ce que je vais faire ce mois? Tu ne peux pas enseigner correctement; donc ça aussi c'est un autre aspect."

[Bu82b, 14.11.2011]

where am I going to go at the end of the month? The rent of the previous month I haven't paid, what am I going to do this month? You cannot teach properly. Hence this too is a facet."

[Bu82b, 14.11.2011]

While this is not the only reason to explain the under-utilisation of those computer labs, it calls attention to the too often forgotten 'no man's land' of school management (Harber & Davies, 1998; Taylor, 2011; Vota, 2014). The current ICT for Education debate tends to revolve around techies' discourses on technological infrastructure (such as the ratio of pupil-to-device — Bernard, 2007; Light & Pierson, 2012; Mozelius, Rahuman, & Wikramanayake, 2012; Slay *et al.*, 2008); pedagogues' arguments on educational approaches (instructional vs. constructivist, teaching with ICTs vs. teaching ICTs - Karsenti *et al.*, 2011; Law & Pelgrum, 2008; Nussbaum, 2011; Selinger, 2009; Unwin, 2008; Were *et al.*, 2011); and high level ICTs policy recommendations (Jhurree, 2005; Selinger, 2009; Wong & Unwin, 2012; Yusuf, 2005). Less attention is devoted to organisational matters within the single school, although some literature does indeed address this critical issue:

"It is not necessarily the case that a school with low access does not have enough equipment; it may be that the amount of equipment is adequate but inappropriately organised in the school. Equipment should be organised in such a way to ensure maximum access for all users." (Jones, 2004, p. 3)

Technology, pedagogy and policy are definitely crucial. Yet, such discourses tend to underestimate the organisational challenges faced by school administrators and the complexity of change management (Bates, 2000; Cuban, 2001; cited in Jones, 2004, p. 4) that is supposed to follow the introduction of ICTs. It is precisely in this gluey organisational terrain that project expectations are constrained.

Pedagogical intricacies

The assumption that being trained in basic office automation skills was enough to teach such skills to pupils was also unrealistic. To plan and perform a lesson in a computer lab requires developing specific pedagogical skills (Bingimlas, 2009; Gaible & Burns, 2005; Isaacs, 2004; Law & Pelgrum, 2008; Selinger, 2009; Unwin, 2005b). This task becomes even more challenging when the pupil-to-computer ratio is very high (three to five). Yet, when Firmin trained those

pedagogical advisors who later trained teachers in ICTs, he never faced the challenge of an overcrowded computer room with multiple users per machine. In his case, the course computer-to-trainee ratio was one-to-one.

Orchestration — the actual classroom management in the computer room — is acknowledged to be challenging in technologically advanced countries (Dillenbourg *et al.*, 2013). This becomes much more complicated when dealing with 40+ people on 20 PCs, since it requires shifts between the multiple users manipulating the same machine, privileging some at the expenses of others. The AESTP project neglected this basic issue and did not provide any specific training to teachers in the real situation, nor did they provide any pedagogical support to reinforce their self-confidence with ICTs, nor to scaffold experimenting with other pedagogical approaches such as group-work (Nussbaum, 2011; Razani, 2008), possibly more promising in those circumstances. Instead during the lab managers training, the issue was addressed by teaching how to use iTALC (<http://italc.sourceforge.net/> — last accessed 04.09.2013). This is an open source software that provided monitoring capabilities for the teacher by displaying live miniatures of every workstation screen. iTALC included the possibility for the teacher taking remote control of any workstation, either to assist individual pupils or to block them, should they be distracted (Figure 5.7). When tested in the real situation with pupils, this solution turned out to be too complex and was never integrated as a teaching practice. However, the enthusiasm it aroused in both the Belgian and Burundian camps was an indication of the command-and-control mentality that they shared as a pedagogical paradigm: a lesson implies a teacher telling and showing the students how to do things on the computer, almost click by click. This approach was common practice in the majority of the schools studied. I sometimes observed pupils secretly browsing the Encarta encyclopaedia while waiting for slower classmates to complete the teacher's instructions, and then swiftly closing the program when the teacher was nearby, as if they had been surfing prohibited websites (Fieldnotes 03.11.2011).

Features versus benefits

Computer teachers at ETB preferred to use what my European eye would consider a sloppy computer room, with 27 heterogeneous, refurbished, standalone PCs, with botched cabling (Figure 5.8) — but capable of hosting 75 pupils. This was a different arrangement than the lab built during the sub-

project, which featured 18 brand new PCs, each protected by a UPS, connected to a server with proper cabling and fitted within ad hoc furniture (Figure 5.9), with a sophisticated set of software already installed — but much less spacious (Figure 5.10). It was not so much the technological sophistication of the infrastructure — the *quantity* of its potential features — but rather the *quality* of a few key features, such as spaciousness, functional to the local situation, which made one computer room more suitable than the other. While this seemed sensible and almost obvious from a researcher's standpoint, from my former information designer's perspective this realisation felt counterintuitive, given my *techie's* compulsion to install the latest update.

Figure 5.7. iTALC remote control software screenshot. On the right side of the picture the nine live miniatures of the remote workstations used by pupils.



Source: <http://italc.sourceforge.net/>

Figure 5.8. The large computer room at ETB Bubanza equipped with less technologically advanced equipment.



Source: Author (02.11.2011).

Figure 5.9. The small computer room at ET Bubanza equipped with more advanced technological equipment.



Source: Author (02.11.2011).

Figure 5.10. The same small computer lab when occupied by a class of pupils.



Source: Author (22.02.2010).

5.3.5 The technological imperative *in vivo*

Now that the issue of overcrowded classes has been analysed thoroughly in terms of its pragmatic consequences, the second and perhaps more intriguing question needs to be addressed: how was it possible that such a critical factor went seemingly unnoticed throughout the project?

In 2008, a few days before the Computer Labs sub-project was launched, Firmin met with the ETB principal and technical director to discuss the installation of the two computer labs in their school. He selected seven Burundian technical teachers from different schools and one pedagogical advisor from BEET to carry out the required work (chairs and table construction, electrical and network cabling). This allowed my group to come after, plug in the computers and configure them. The report of that meeting reads:

“[La salle multimédia] comprend 20 postes informatiques et 20 tables de classe libres. Cette installation permet d’accueillir une classe entière. Elle permet un usage individuel alterné des machines ou de travailler par binômes.”
 (Source: FORMATION À LA RÉALISATION DE DEUX DE SALLES MULTIMÉDIA À BUBANZA — AESTP project internal

“[The computer lab] includes 20 workstations and 20 tables left free.

This installation allows to host an entire class. It allows an alternate individual usage or working in pairs.” (Source: FORMATION À LA RÉALISATION DE DEUX DE SALLES MULTIMÉDIA À

document)

BUBANZA — AESTP project internal document)

This excerpt illustrates that the issue of overcrowded classes had indeed been raised and addressed — on paper. The vision here was to build computer labs capable of hosting an entire class, half of which would work on the PCs, while the other half sat at PC-less tables, to allow for rotation. As Figure 5.9 and Figure 5.10 clearly show, this arrangement was incompatible with the size of the rooms selected to host the labs. Yet, both parties eventually ‘forgot’ about this difficulty and carried out the lab installations *as if* classes were not overcrowded. This is an example of the *technological imperative in action* (see Section 8.2): the drive to set up or own the lab, for the Belgians and the Burundians respectively, eventually overrode all contextual concerns and discouraged any attempt to address the issue at the systemic level. The latter would have implied tackling the problem at the ministerial level, intervening in the delicate process of routing the new cohorts of pupils to different schools. This was not a mere administrative issue, but rather a political one, as explained thoroughly in Section 7.6.2. It is my contention that:

1. The *technological imperative* as a powerful narrative shared by Burundians and Belgians intensified the optimism embedded in any such project at its inception, and steered it towards wishful thinking, blinding people against a necessary contextual analysis.
2. This bias maintains the coherence of the role-play on the Aid stage — à la Goffman (1959): the interests of different actors differ widely, yet they overlap in the computer lab as an important stepping stone to achieve their higher goals.

Although largely unconscious, such collusion bears a cost. Thus, before providing more evidence in support of this contention (see Chapter 7), its consequences at the level of interpersonal relationships between the two parties are analysed and an interpretive model is proposed in the following chapter.

5.4 Conclusion

Table 5.4 summarises the previous three sections.

Table 5.4. Summary of the reasons for computer lab uses, misuses and underuses (see Section 5.3, 5.3.2, 5.3.3, 5.3.4).

Type	Reasons	Schools
A. Uses	<ol style="list-style-type: none"> 1. Favourable local context (school and community) (see Toyama, 2010b) 2. Flexibility and local improvisation (see Heeks, 2002) 3. Local, committed leadership. (see Walton & Heeks, 2011, p. 5) 4. Political intelligence (see Mosse, 2005) 	LTK Kiremba ETB Bubanza (2010)
B. Misuses	<ol style="list-style-type: none"> 1. Hidden conflict or misalignment of interests between local stakeholders (see Heeks, 2002, p. 107). 2. A perception that the lab privileges its income generation potential over its educational one (see Heeks, 2002, p. 107). 3. Private financial interest overriding the school's interest (see Heeks, 2002, p. 107; Mbangwana, 2008; Cossa & Cronjé, 2004). 	ETSA Gitega ETP Gitega
C. Underuses (No use included)	<ol style="list-style-type: none"> 1. Unfavourable systemic constraints unmatched by the computer lab infrastructure and school personnel (i.e. overcrowded classes, lack of trained teachers to organise parallel lessons, strong financial pressure for teachers in urban environments) (see Haddad & Draxler, 2002; Batane, 2006; Toyama, 2010a; Chigona <i>et al.</i>, 2010) 2. Lack of endorsement and support by leadership (principal, technical director), reluctant to conceive, approve and enforce the lab regulations and to provide funds for the Internet connection via GPRS modem (see Unwin, 2005b; Cassidy & Paksima, 2007; Law & Pelgrum, 2008; Miller <i>et al.</i>, 2006; Walton & Heeks, 2011, p. 5). 3. Lack of formal recognition of the Computer Lab Manager role by the Ministry of Education (unrealistic expectation of unlimited voluntary work) (see Cassidy & Paksima, 2007). 4. Lack of in situ pedagogical training and tutoring to teachers and lab managers (ICTs-enhanced lesson design, practice and orchestration techniques) aimed at building capacity and self-confidence when in a real class situation (see Batane, 2006; Bingimlas, 2009; Law & Pelgrum, 2008; Miller <i>et al.</i>, 2006; Nwachukwu, 2006; Selinger, 2009) 5. Excessive focus on technical features versus actual benefits (see Irani <i>et al.</i>, 2010) 	ETS Kamenge ETB Bubanza (2011)

Source: Author.

Across the board (a., b. and c.), the local context was crucial. In the two schools where the computer lab was exploited most effectively, it was an *alchemy* of factors that came together, which had less to do with the technology and more with the local culture and the capacity of the school leader. This supports some scholars' emphasis on the key role of ICT4D champions (Unwin, 2009, p. 366; Kamal, 2010; Renken & Heeks, 2013) capable of "assembling" (Latour, 1992, 2005) stakeholders interests around a project by foreseeing the benefits they could reap and making them understandable. In line with an ecological perspective, Renken and Heeks (2013, p. 129) stress champions' ability to leverage their network of relationships in order to achieve the desired result:

"[A champion is] any individual who makes a decisive contribution to the ICT4D project by actively and enthusiastically promoting its progress through critical stages in order to mobilise resources and/or active support and cooperation from project stakeholders".

This aspect is analysed further in Sections 7.6.2 and 8.4.

Misuses are much less cited in the ICT4D literature (Cossa & Cronjé, 2004; Mbangwana, 2008), which tends to be exalting ICTs' potential benefits. Critical voices have long questioned the actual emancipatory potential of ICTs in thin-tech countries and in education (Sharma, 2005; Warschauer, 2004; Weigel, 2004), highlighting that ICTs often empower the already privileged, ultimately widening the gap with the underprivileged:

"[The question is how can we] ensure that ICTs do not become yet another means whereby large segments of the world population are further systematically disadvantaged." (Unwin, 2009, pp. 29–30)

Emile was initially leveraging his new role for his own benefit to the detriment of his pupils. Yet, when widening the scope, he was reducing his poverty and enabling his customers — such as the higher class, Catholic school. An ecological perspective invites to follow the thin threads radiating from the centrepiece, the computer lab, so as to grasp the complexities of its integration into the local ecosystem and the *redistribution* of power it may engender.

Almost symmetrically to the meritorious schools, those in which the lab was not used at its full potential were characterised by adverse local conditions, both in terms of infrastructure and weak leadership, lack of institutional recognition and support by the Ministry of Education for the new role and an excessive focus on technology itself, rather than on its management *in situ* (Hutchins, 1995; Mantovani, 1995; Suchman, 2007).

Table 5.5 compares these observations against Bingimlas' framework (2009, p.

243) which neatly considers both the *micro* and the *nano* analytical levels (see Section 1).

Table 5.5. Barriers to the ICTs uptake observed in the Computer Labs sub-project categorised according to Bingimlas' framework (2009, p. 243).

Barriers	For schools (<i>micro</i>)	For Teachers (<i>nano</i>)
<i>Lack of access</i>	<p>- Providing ICTs resources, including hardware and software</p> <p>> <i>Both were provided, except Internet access, due to lack of coverage by local telecommunication operators</i></p>	<p>- Taking advantage of resources offered at schools</p> <p>> <i>Only few teachers did, on a voluntary basis. Lack of endorsement by principals to teachers other than those in charge of office automation courses (bureautique)</i></p> <p>- Access to ICT resources at home</p> <p>> <i>No personal computer was provided to teachers and computer lab managers</i></p>
<i>Resistance to change</i>	<p>- Training in new pedagogical approaches</p> <p>> <i>The lab managers training presented a new pedagogical approach, yet few trainees adopted this when working with their pupils.</i></p>	<p>- Being open minded towards new ways of teaching</p> <p>> <i>The majority of teachers were shy to explore the software available. Lab managers were more proactive, but did not foster this attitude in other teachers</i></p>
<i>Lack of time</i>	<p>- Providing sufficient time: reducing the number of teacher lessons or increasing the daily lesson time</p> <p>> <i>Some principals reduced the lab managers' teaching workload, yet none offered special practicing time for teachers.</i></p>	<p>- Acquiring skills of self-organisation and time management</p> <p>> <i>General pedagogic training was organised by AESTP in late 2009 on lesson structuring, yet with no reference to ICTs use.</i></p>
<i>Lack of training</i>	<p>- Providing training courses to deal with new devices, modern technologies, and pedagogical approaches</p> <p>> <i>Computer literacy was extensively provided to teachers, principals and administrative staff. Higher technical skills training to Computer Lab managers. Specific training on the pedagogical use of ICTs to teach other subjects was provided by Firmin, but with low attendance rates.</i></p>	<p>- Preparing themselves (pre-service) by self-training</p> <p>> <i>Not planned or done for pre-service. Some proactive teachers did it on their own.</i></p> <p>- Taking up opportunities for training offered at schools</p> <p>> <i>Two schools offered training to the local community as self-financing</i></p> <p>- Knowing how to access resources</p> <p>> <i>Insufficient deliberate effort by AESTP trainers to simplify access, and by</i></p>

		<i>teachers and lab managers to experiment and explore autonomously.</i>
<i>Lack of technical support</i>	<p>- Providing continued technical support</p> <p>> <i>Computer lab managers did provide such support. Occasionally, I did provide on-demand support to them via email from abroad and Firmin did provide occasional support locally.</i></p>	<p>- Relying on themselves to be able to solve problems in their use of ICT</p> <p>> <i>Insufficient effort on this by both AESTP and the lab managers</i></p> <p>- Accessing available support</p> <p>> <i>Heterogeneous evidence: lab managers varied in their helping attitude to teachers and fellow managers. Two travelled long distances to troubleshoot a colleague's lab in another school. Several consulted each other via mobile. Pedagogical advisors who participated in the training were also called upon on occasion.</i></p>

Source: Author.

Though rich, Bingimlas's framework was based on literature mostly in thick-tech countries and therefore it leaves out many of the problems that surfaced in this case study. From a management perspective, it does not consider the organisational challenge of managing the computer lab when dealing with overcrowded classes, which exacerbate the four *lacks* mentioned in the table (Little, 2008). From a principal's perspective, it also does not include the issue of appointing and managing a lab manager whose role is not yet formalised by the Ministry of Education and therefore has no specific budget line attached to it.

From the teachers' point of view, it ignores the subsistence imperative that affects underpaid teachers (Mulkeen, 2010; Mulkeen *et al.*, 2007). This prevents them from committing time to improve their technical skills for teaching purposes. Those who do are pressured to exploit those skills more profitably, boosting absenteeism (Mulkeen *et al.*, 2007, p. 23). There is a lack of formal and financial recognition from the ministerial authorities for the training, and an absence of any quality control system for teachers' performance. This does not provide any incentive to engage in professional development, which is left solely to individual initiative. Similarly, Law and Pelgrum (2008) in their SITES 2006 study did not find any 'correlation between the level of ICTs access (student-to-computer ratio) and the percentage of teachers who reported using ICTs in their teaching' (http://www.iea.nl/sites_2006.html — accessed 23.04.2013). Yet, among the 22 countries they examined, South Africa was an

outlier for class size, averaging over 40 pupils per class (Phurutse, 2005).

While stressing the importance of contextual factors, the considerations above do not encompass the contextual layer of Development projects, namely the dynamics specific to the Aid provider and recipient. This case study is therefore particularly relevant, as it involves the former coloniser and colonised. Chapters 6 and 7 address these peculiarities in depth.

6 Structuring an interpretive framework: the dispositional route and its consequences

6.1 Introduction

- [1] *Gilbert, assistant technique APEFE* : “Les gens voulaient faire les salle multimédia. OK **ça fait bien** quand on dit: «Nous avons installé une salle multimédia dans une école». **Ça fait beau, ça fait moderne ce mot là, ‘m u l t i m é d i a’**. On a tendance à cela.
- Gilbert, APEFE technical assistant*: “People wanted to setup the multimedia [computer] labs. OK, it **feels good** when you say: «We have installed a computer lab in a school.» **It looks good, it sound modern that term ‘m u l t i m e d i a’**. There’s a tendency to that.
- [2] *Mais derrière ce mot-là on oublie qu’il y a des hommes et de la technologie qu’il faut manier avec dextérité, avec prudence parce que, j’insiste, une technologie ne s’introduit pas n’importe comment: il y a une démarche. (...)*
- Yet, behind that term we forget that there are men and a technology that must be handled with mastery, with caution because, I insist, **a technology must not be introduced improvising: there is a process. (...)**
- [3] *Je ne dis pas que pour l’instant les salles multimédia c’est un échec, mais le nombre des colloque qu’on a organisé pour comprendre, nous prouve que l’attendu n’est pas le même, le résultat escompté est en train de balbutier et qu’il faudrait peut-être corriger le tire.*
- I’m not saying that at present the computer labs are a failure, but the number of gatherings we have organised to understand, it’s a proof that **the expectations were not the same**, the envisioned result it’s stuttering and it would be necessary to adjust the aim.
- [4] *Mais comme nous sommes des humains et le gens n’aiment pas reconnaître une erreur pour corriger, on persiste et on se met des barrières, on met la faute aux autres, on met la faute aux burundais, que le burundais ils veulent l’argent, qu’ils veulent pas travailler...*
- But since we are humans and **people don’t like to admit a mistake to fix it**, we persist and we set ourselves barriers, **we blame the others, we blame Burundians**, claiming that Burundians are after money, that they don’t want to work...
- [5] *Mais on est pas encore dans le niveau où on devrait parler de travail! On devait parler encore de l’introduction de la technologie, de l’appropriation de la technologie.”*
- But we are not yet at the level where we should be talking about work! We should still be talking about the introduction of technology, of **the appropriation of technology.”**
- [Be3a, 04.02.2010]
- [Be3a, 04.02.2010]

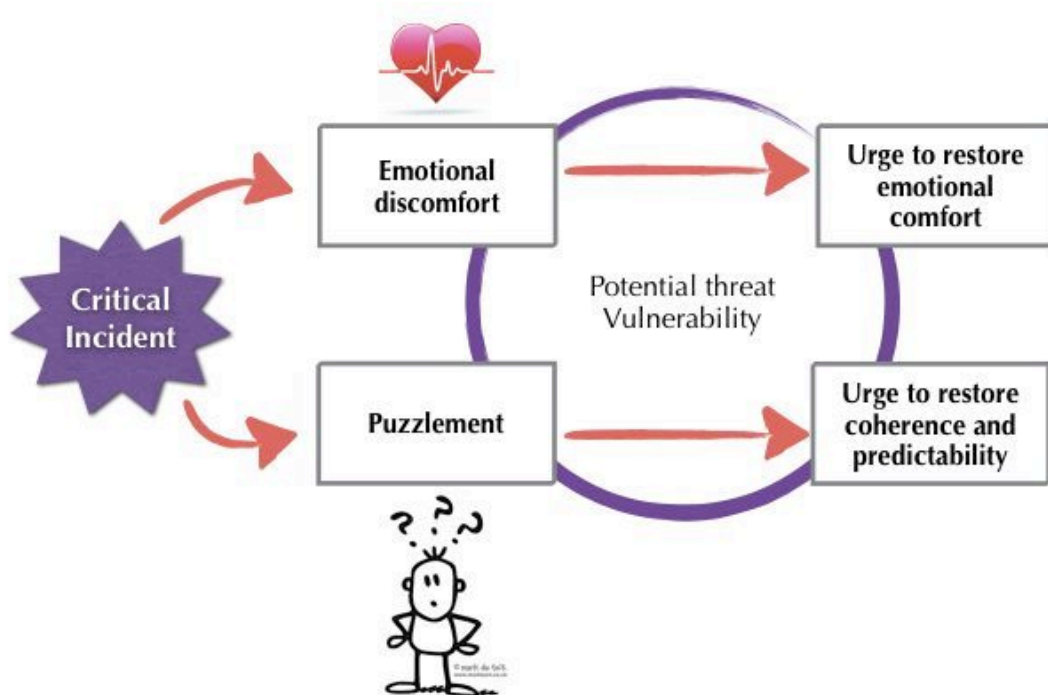
This interview excerpt by my former colleague Gilbert, a Congolese and Belgian APEFE Technical Assistant, captures the main themes developed in the remaining analytical chapters. Paragraph [1] acknowledged the symbolic value of ICTs, its halo of modernity, explored in Chapter 8. Paragraphs [2] and [5] relate to the social embeddedness of ICTs, discussed in Chapter 7. This chapter focuses on paragraph [3] and [4]: it resumes the discussion on the theoretical underpinnings of critical incidents by exploring how they were confronted by Cédric and Firmin, the two lead 'Belgian' figures in the performance in which I participated over the five years of my empirical research.

The aim of the chapter is to develop a framework to understand the consequences of critical incidents as observed in the field. In particular, this framework relies on Attribution Theory, originally proposed by social psychologist Heider (1958). Attribution theory is still under development and is applied in social psychology (see the special issue "*Fifty years of Attribution Research*", in *Social Psychology*, 2008, 39, 3, for an extensive review) and in organisation studies, where it has been coupled with studies on trust (Jones & George, 1998; Mayer *et al.*, 1995; Tomlinson & Mayer, 2009).

6.2 Theoretical underpinnings

Recalling the argument presented in Section 2.6, I believe that human beings strive to organise their flow of experience by pursuing meaning (Blumer, 1969; Bruner, 1990). Conversely, they hardly to tolerate *anomie*—the condition in which society provides little moral guidance to individuals to orientate their behaviour, thus reducing interactional uncertainty (Durkheim, 1897/1951; Goffman, 1959, 1974). From an evolutionist perspective, uncertainty always entails a potential danger, as it is the opposite of predictability, and therefore is instinctively associated with a sense of vulnerability, which provokes some emotional discomfort. In the context of my research, the person experiencing a particular critical incident feels urged to restore coherence in the flow of his/her experience to reinstate a sense of safety (Figure 6.1).

Figure 6.1. Visual representation of the theoretical underpinnings of the interpretive framework proposed.



Source: Author.

Heider (1958) proposed *causal Attribution Theory* to explain how people make sense of a puzzling behaviour carried out by others. The core assumption of Attribution Theory is that we all act like intuitive psychologists when interpreting others' behaviour by explaining it through *causes*. These can be either *dispositional*, that is ascribed to the internal characteristics of the actor (e.g. personality traits, cognitive faculties), or *situational*, that is related to the circumstances which induced the actor to behave in a certain way.

The very same year Winch (1958) and Peters (1958) claimed that explaining human behaviour through causes was invalid, since human are telic beings whose behaviour must be explained in terms of *reasons*. Since then, Attribution Theory has been refined (Manusov & Spitzberg, 2008), although the tension between these two approaches is ongoing in (social) psychology (Buss, 1978; Fiora *et al.*, 1988; Hewstone, 1989; Marhaba, 1976; Maruna & Mann, 2006; Zamperini, 1993) as well as in the sense-making of everyday life. According to Manusov and Spitzberg (2008, p. 45):

“Attribution Theory was developed originally as a universal theory of human sense-making, but research has limited its scope. Most research investigates contexts in which conscious attributional efforts are most likely: contexts involving actual or potential negative consequences and violations of expectations. (...) Furthermore, there is increasing evidence that attributional

thought processes may be culturally moderated to some extent. For example, Eastern and Asian cultures may be more situational in their attribution biases, compared to the West's dispositional attribution bias (Choi *et al.*, 1999)."

There are four main arguments for using this approach. First, in order to come up with *reasons* to understand others' behaviour, one must be familiar with their cultural universe, to recognise some underlying coherence. The more challenging this process becomes, the stronger the drive to resort to simple causal explanation.

Second, research attempting to explore the heuristic value of Attribution Theory in a 'Western'-African intercultural dealing is rare (Lalljee, 1987). Beyond experimental research settings, Attribution Theory has also been used in organisation studies (Barry & Crant, 2000; Bartunek, 1981; Iles & Hayers, 1997; Martinko *et al.*, 2007, 2011; Weiner, 2011). Its application is similarly uncommon in Development contexts (see Sloan & Oliver, 2013 for a notable exception) and I could not find any research that pertained to an African context.

Third, "attribution theories have the advantage of making good intuitive sense" (Manusov & Spitzberg, 2008, p. 45), thus deeming the framework sufficient for non-academic 'Western' Development practitioners. Furthermore, this theory has been applied to organisations, although apparently only in 'Western' countries, in relation to building, maintaining and restoring trust (Mayer *et al.*, 1995; Tomlinson & Mayer, 2009). Finally, the strongest motive for adopting this theory concerns both the epistemological and pragmatic benefits of a transition from a positivistic, essentialist worldview to a constructionist one, where the focus is on the *relationships* linking interactants rather than in the individuals themselves, as it will become apparent by the end of Chapter 7.

Nevertheless, this theory admittedly oversimplifies experience by assuming that the puzzled one (*observer*) has *only* two possibilities: a *dispositional explanation* or a *situational explanation*. It does not contemplate the possibility that the observer makes a deliberate effort to stay in the uncomfortable state of puzzlement to gather more information, for example by asking the actor for a first-hand explanation of the behaviour (Sclavi, 2003). This kind of response was not common in this case study, since trust between the Belgian and the Burundian counterparts has been already eroded enough to discourage any attempt to understand the Other (see Chapter 7).

Rather, four decades of research in social psychology in 'Western' cultures have

offered significant evidence for a *fundamental attribution bias* (Ross, 1977). This is the tendency of the observer to over-emphasise the actor's responsibility while underestimating the role of circumstances (Gilbert & Malone, 1995; Hewstone, 1989; Jones & Harris, 1967; Zamperini, 1993). In other words, the observer tends to assume that their perception of the situation is as valid or relevant as the actor's. Therefore, when s/he cannot identify the cause(s) of the puzzling behaviour in the situation — *external to the actor* — they must necessarily assume an *internal* explanation.

Weiner (1974, 1986) developed the theory suggesting that the choice between these two classes of explanations is affected by two other factors: perceived *controllability* ("Was the puzzling behaviour under the actor's control?") and *stability* ("Was the behaviour irregular and temporary, or a stable/familiar characteristic of the actor?"). Most relevantly, it is influenced *by*, and feeds back *into* the level of *trust* existing between the observer and the actor (Jones & George, 1998; Tomlinson & Mayer, 2009).

Mayer *et al.* (1995, p. 712) define trust as:

“...the willingness of a party to be vulnerable to the actions of another party based on the expectation that the other will perform a particular action important to the trustor, irrespective of the ability to monitor or control that other party”.

Tomlinson and Mayer (2009) build on this delicate relationship between causal attributions and trust. They posit that, when faced with a negative mismatch of expectations, the observer/trustor cognitively assesses the *ability*, *benevolence* and *integrity* of the violating actor/trustee (see also Mayer *et al.*, 1995). This concerns his/her *capacity* to meet the expectations, *willingness* to do good, and *coherence* with a set of values shared with the trustor. This assessment accords with three basic emotions: *fear*, *hopelessness* and *anger* as a function of the perceived stability and controllability of the puzzling behaviour. Thus:

1. If the trust violator is perceived to be steadily *unable* to meet expectations, the first reaction is fear (of another disappointment occurring in the future). Such fear may turn into hopelessness and resignation (Weiner *et al.*, 1978), especially when the trustor cannot withdraw from the relationship.
2. If the trust violator is perceived to have had *control* over the disappointing outcome, this is attributed to a lack of benevolence and integrity — commonly referred to as *bad faith* — and will arouse anger

in the trustor who will feel to have been intentionally betrayed (Lewicki & Bunker, 1996).

In summary, whenever observers/trustors are confronted with a critical incident and their perceived locus of causality is not ascribed to the situation or to themselves, it is inevitably ascribed to the actor/trustee (*dispositional attribution*). The latter can then be classified either as *deficient* or as *evil* as a function of the complex mix of stability and controllability perceptions and of the pre-existing level of trust. This assessment will re-evaluate the actor's/trustee's trustworthiness and therefore will inform subsequent interactions.

When attributions are ascribed to *individuals as members of a different community (outgroup)* from the trustor's (*ingroup*), heuristics such as stereotypes and prejudices may be ascribed to culture (*culturism*) or ethnicity (*racism*) (Holliday *et al.*, 2004, pp. 21-24). This specific layer was investigated in my research by analysing interviews and by looking for implicit or explicit references like "Belgians are..." or "Burundians are...". Iles and Hyers (1997, p. 109) warned that:

"Stereotyping, though useful in ordering and simplifying the social world, may attribute negative traits to all members of the out-group, as well as generate attributional errors favouring the in-group."

More precisely, social psychologists (Duncan, 1976; Hewstone, 1989) have observed a self-serving bias in intergroup relationships called *ultimate attribution error*: the tendency to adopt dispositional attributions to explain the positive behaviour of in-group members while resorting to situational attributions to justify negative behaviours. Conversely, positive acts by out-group members tend to be attributed to circumstances, while negative behaviours are explained in terms of personality (e.g. stupid, mean, lazy; Duncan, 1976; Hewstone, 1989). While the interethnic dimension has not been investigated (see Section 9.7), different skin colour made the distinction between Europeans and Burundians immediately visible. Consequently, the separation between *ingroup* and *outgroup* members in these terms was apparent in my research.

6.3 Empirical support

When I first interviewed the AESTP project leader, Cédric, his disappointment

with the results of the computer labs sub-project was palpable:

- | | | |
|-----|---|---|
| [1] | <i>Cédric: “Je dois dire que le résultat escompté n’est pas atteint parce que en faisant le tour dans les écoles, je constate que les salles multimédia ne sont pas gérées comme on l’entendait faire.</i> | <i>Cédric: “I must say that the expected result has not been attained because when touring the schools, I ascertain that the computer labs are not managed as we intended to do.</i> |
| [2] | <i>La plupart des salles ne sont pas gérées du tout. Il y a très peu de bénéficiaires, élèves ou professeurs, dans les salles. Dans la plupart des cas, les salles restent vides.</i> | <i>The majority of them are not managed at all. There are very few beneficiaries, pupils or teachers, in the labs. In the majority of cases, the labs remain empty.</i> |
| [3] | <i>Dans certains cas les salles sont occupées après les heures de cours par des gens qui n’ont rien à voir avec l’école.</i> | <i>In certain cases the labs are occupied after school hours by people who have nothing to do with the school.</i> |
| [4] | <i>Ces sont des salles qui sont louées; c’est un projet d’autofinancement dont on n’a pas de trace.</i> | <i>They are labs which are rented out, it is an auto-financing project of which there is no trace.</i> |
| [5] | <i>En ce qui concerne la gestion de la salle, il y a très peu d’entraide entre les différents gestionnaires des salles et les gestionnaires des salles eux-mêmes ne sont pas en mesure de régler les petits problèmes auxquels ils sont confrontés tous les jours et qu’ils devraient pouvoir résoudre.</i> | <i>With regards to the lab management, there is very little mutual help among the different lab managers, and the lab managers themselves are not able to troubleshoot the little problems they are confronted with every day and which they should be able to solve.</i> |
| [6] | <i>Moi, j’avais pensé que (...) la formation effectivement aurait servi à quelque chose, mais je dois constater que le résultat est assez décevant, quoi.”</i> | <i>I had thought that (...) the training would have actually be of some use, but I must ascertain that the result is pretty disappointing, you see.”</i> |
| | <i>[Be1a, 11.03.2010]</i> | <i>[Be1a, 11.03.2010]</i> |

Points [1] and [2] represent the ‘raw’ critical incident: Cédric was puzzled with an unexpected negative outcome that contradicted his desiderata.

Points [3] and [4] represent an initial causal attribution to explain point [1] (yet leaving [2] unexplained). Implicitly he accused the Burundians in charge of abusing the facility for their own private interest rather than for the interest of the intended beneficiaries. In his eyes, this mismanagement is voluntary (*controllable*) and betrays the shared values upon which the cooperation is based (*lack of integrity*). Consequently the attribution is one of *bad faith* and is accompanied by the emotion of resentment for the violated trust — coherently with the model.

Points [5] and [6] are left basically unexplained, with him doubting whether to ascribe the cause of this disappointment to (a) the lack of capacity of the

Burundian trainees or (b) to mine, as their former trainer, or (c) to both, or (d) to a controllable lack of commitment on the side of the Burundians. I am very confident that Cédric at that moment did not doubt my earnest commitment, only my ability to deliver the training satisfactorily. Later in the interview this ambiguity was resolved and Cédric's narrative focused on Burundians: his causal attributions were almost always dispositional, oscillating between *deficient* and *bad faith*. As Sirolli (1999) polemically affirmed, *developers'* attitude towards *developees* is either *paternalism* or *patronising* (see also Khoza, 2006). The data I generated seem to support this statement: a *deficient* attribution was associated with a paternalistic approach, whereas a *bad faith* attribution was accompanied by a patronising attitude. The same person could alternate these two attitudes repeatedly. While it may be simplistic to reduce all *developers'* attitudes to this binary distinction, relying on my experience in Development I agree with Sirolli that these two attitudes are very common, if not prevalent, in expatriates' conversations, well beyond my own projects, and therefore it is pragmatically sensible to craft an interpretive framework around them. Nevertheless, in Chapter 7 and 9 alternative interactive modes are envisioned and discussed.

6.3.1 Paternalism

The following interview excerpt illustrates the first attitude:

- | | | |
|-----|--|--|
| [1] | <i>Cédric</i> : "J'ai même donné une prime pour pouvoir euh... les motiver parce qu'ils disaient «On n'a pas ceci, on n'a pas cela» et c'est comme cela qu'on ne peut pas gérer les salles. J'ai donné une petite prime en disant «Voilà, si effectivement c'est un problème financier, on vous donne mais envoyer votre rapport et expliquez votre problème et ainsi on sait comment on peut intervenir». On a rien." | <i>Cédric</i> : "I even gave him an incentive in order to... to motivate them because they were saying: «We don't have this, we don't have that, and that's why we can't manage the computer labs.» I gave them a small incentive saying «Here it is! If it is truly a financial problem, we give you, but send us your report and explain what your problem is, so we know how we can intervene.» We have nothing." |
| [2] | <i>PB</i> : "Attend: quand tu dis «donner la prime car c'était un problème financier» c'est à dire que, eux ils avaient dit qu'ils avaient un problème financier?" | <i>PB</i> : "Wait, when you say «I gave them an incentive because it was a financial problem» you mean that they had lamented a financial problem?" |
| [3] | <i>Cédric</i> : "Bah, ils ont dit... c'est certainement un problème de motivation car ils doivent travailler en plus pour gérer la salle. Oui, c'est partiellement vrai. Je comprends qu'ils doivent rester un peu plus d'heures pour... mettre les antivirus à" | <i>Cédric</i> : "Well, they said... it was certainly a motivation problem since they have to work more to manage the computer lab. Yes, this is partially true, I understand they have to stay few extra hours to... update the" |

jour, pour regarder si tous les ordinateurs fonctionnent etc. etc. Et éventuellement si une serrure est cassée, pour pouvoir la remplacer. Si une multiprise a disparu, pour pouvoir la remplacer. Donc j'ai donné la prime pour gérer la salle, une petite prime, ne sachant pas à combien cela pourrait s'élever, j'ai dit «Voilà 40.000 Francs par salle pour voir où on va» et j'ai demandé «Envoyez vos rapports» C'était d'abord pour le 26 février pour le 5 mars mais jusqu'à présent, je n'ai rien.”

[Be1a, 11.03.2010]

antivirus, to check if all the computers are working, etc. And should the case arise that the door lock is broken and they have to replace it or a multi-socket has disappeared they have to be able to replace it. So I gave an incentive to manage the computer lab, a small incentive, as I didn't know to how much it may amount, so I say, «Here you are 40.000F per computer lab, to see where we are going» and I asked them «Send in your reports». It was first for the 26th of February then for the 5th of March but up to now, I have nothing.”

[Be1a, 11.03.2010]

This passage has great heuristic value since it manifests Cédric's implicit assumptions about:

1. The kind of problems a computer lab manager was confronted with.
2. Their consequences in terms of extra workload.
3. The proper way to deal with this extra workload.
4. With regards to the first point, the problems highlighted were:
 - a. Technical (update the antivirus, make sure all PCs are working properly).
 - b. Security-related (change the lab door lock, replace a multi-socket that has been stolen).

Thus according to Cédric, lab managers' problems were at the *nano* level, within the lab, and were related to the infrastructure — not to the management of the facility within the school (*micro* level, i.e. schedule, lack of computer teachers, overcrowded classes). Foreshadowed in b) is the belief of a high risk of theft in the schools due to previous cases, which denoted an underlying mistrust towards Burundians.

With regard to the second point, Cédric admitted that lab managers were requested to provide extra effort which was not financially rewarded, implicitly acknowledging that at the ministry level the computer lab manager role had not been formalised and therefore it depended on *voluntary* efforts. Yet the *tone* of his voice was rather condescending and appeared to convey: “Come on,

managing a computer lab is not such a big deal! The problems you face are mundane, they may require only few extra working hours". At the time of the interview the newly appointed lab managers across schools were reporting between 15 and 21hrs/week on top of their statutory workload (18hrs/week) to perform their new duties, granting access and supervision to the school population in some instances until late at night (22h00). These conspicuous self-reported extra workloads were in striking contrast with the "empty labs" denounced by Cédric in the very beginning. In ETB and ETP this was explained by lab managers working alone in the lab for their private purposes, namely typing dissertations as a paid service to external clients and self-teaching using the Microsoft Encarta encyclopaedia, but not proactively promoting the access to the room for teachers or pupils. Thus Cédric's attribution is double: Burundians were prone to theft and rather lazy, both controllable behaviours which then implied bad faith. However they are also poor — *deficient* — and therefore deserved compassion, as it is reasonably hard to be motivated to work unpaid when afflicted by poverty. Notably, this was not a situational explanation, in that *to be poor* was considered a stable trait of Burundian teachers, not a transient circumstance. Hence in this instance the *deficient* attribution prevails and Cédric adopted a paternalistic attitude, offering an admittedly small lump-sum of 40.000BIF ($\approx 17\text{€}$) *per lab*, to be shared between lab managers, as the remedy to their lack of motivation ([3] above). Besides explaining 'the state of the world' from his perspective, Cédric was managing his self-image and also the image of the CTB he represented to my eyes (Beach, 1990; Goffman, 1959, 1974; Gumperz, 1992c; Schulz von Thun, 1997). He was aware of his notoriety as severe and strict, and therefore his displaying of a compassionate side was functional to convey a milder, more balanced picture of himself and of his organisation. With regards to his counterparts at the time of the narrated events, 'the 40.000BIF solution' supposedly served as an opening to recover a relationship that had become very tense: many Burundian interlocutors were irritated by Cédric's authoritarian manners (see Section 5.3.2, *Discussion*, point 4.). The lump-sum was an attempt to restore a better relationship in order to reduce the risk of an excessive polarisation. Indeed, he asked lab managers for the reports as a tangible proof of a corresponding goodwill towards a renewed cooperative spirit. Yet, as Schoorman *et al.* (2007, p. 350) rightly pinpoints:

"If you trust a partner, you do not need to verify. Doing so would be the clearest indication that you do *not* trust." (Italics in the original)

Thus, not surprisingly the move did not work as intended. Before exploring

why, I analyse another excerpt that portrays the *patronising* attitude, so as to allow a thorough examination of the wide range of reactions enacted by the Burundians to both Belgians' attitudes in the subsequent section.

6.3.2 Patronising

The following is an excerpt from the interview I conducted with Firmin in November 2011, almost a year after the AESTP project had officially ended.

- | | | |
|-----|---|---|
| [1] | <i>Firmin: "Moi je suis arrivé ici au Burundi et on m'a dit: «Voyez Monsieur Ferroux, nous sommes un peuple très pauvre, très courageux; si on a du matériel et on a des formations, vous allez voir qu'on va ... qu'on va avoir l'Internet, cela va aller.»</i> | <i>Firmin: "When I arrived here in Burundi they told me: «You see Mr Ferroux, we are a very poor, yet very courageous people. If we have some equipment, and some training, you will see, and with the Internet, things will go well».</i> |
| [2] | <i>Une fois je les ai réunis et j'ai dit: «Voilà, vous avez demandé du matériel, vous l'avez eu, vous avez demandé des livres, vous les avez eus, vous avez des formations, vous les avez eues, vous avez demandé des salles multimédias — climatisées parce qu'il fait chaud — vous les avez eues, il n'y a toujours pas de résultats.</i> | <i>One time I gathered them and I told them: "Here we are: you asked for equipment and you got it, you asked for books and you got 'em, you asked for training and you got it, you asked for computer labs — with air conditioning because it's hot — and you got 'em and still there is no result whatsoever.</i> |
| [3] | <i>Qu'est-ce qu'il faut?</i> | <i>What do you need?</i> |
| [4] | <i>Il vous faut des pots de courage — comme on dit chez nous en flamand — mais ça on n'en vend pas! (...) Je suis écoeuré. Parce qu'en Europe, on dit qu'il faut aider les écoles, des choses ainsi, ouais, ce serait quand même bien... Et que tu vois ici ils ont tout et qu'ils ne font rien, tu te dis qu'on se fout de la tête des gens, franchement!"</i> | <i>You need buckets of courage — that's what we say back home in Flanders [Belgium] — but those are not on sale! (...) I'm disheartened. Because in Europe they say that we have to help schools, stuff like that, sure, it would be good... And here you see they have all, and they do nothing, you tell yourself they make a fool of people, frankly!"</i> |
| | <i>[Be2b, 23.11.2011]</i> | <i>[Be2b, 23.11.2011]</i> |

While a patronising posture was most common both in his and in Cédric's wider narratives, this particular passage captures very well the substantial change in attitude that occurred over time: Firmin was an electricity and electronics teacher in a Belgian secondary school who had been recruited as technical assistant for a cooperation project for the first time. He arrived in Burundi in 2005 full of hope and goodwill and ended up five years later bitterly disappointed and somewhat lacking in hope. Firmin's tone when

impersonating the Burundians' voice had three characteristics. First [1], it was caricatural. He spoke very slowly, imitating a certain submissive Burundian accent, typical of the pupil who is not fluent in French and shyly asks the teacher for compassion. Then [2] his tone changed abruptly, becoming peremptory and climaxing to exasperation. He started speaking fast, listing everything the project — often via himself — had done for them over the years, fulfilling all their requests, even beyond the commonly accepted standards (“*with air conditioning because it’s hot*” — his tone was bitter and derogatory) and yet the results are almost non-existent compared to his expectations. Then his question [3] was the manifestation of the painful critical incident he experienced repeatedly throughout the years: “Why? How come the outcome is not as I expected it to be if I were in Belgium dealing with Belgians?” — was his implicit question. It is hard to convey on paper the thickness of the frustration embedded in Firmin's paralinguistic and non-verbal expressions, his sense of betrayal for having earnestly put his best effort to help the intended beneficiaries to emancipate themselves and ‘become developed’ and having to admit failure instead, felt as *his* failure too. Yet, rather than questioning his premises in an attempt to understand Burundians’ reasons, Firmin ascribed the cause the disappointing behaviour to a stable deficiency: the lack of courage [4]. However, in Firmin's perspective courage is a matter of will and therefore it is under the control of the trustees, who did not honour the trust the he bestowed upon them, nor demonstrated any gratitude for his and his fellows' generosity, provoking a sense of betrayal (“*they make a fool of people, frankly*”), and a resentment culminating in resignation (“*I’m disheartened*”). Hence the *bad faith* attribution is much stronger than the *deficient* one.

Firmin's default reaction to this discomfiting disappointment was a rebuking attitude accompanied by increased control and dressing injunctions:

Firmin: “...le lundi je passais à Kiremba et le vendredi à Kiryama, et je demandais: «Où est l’horaire [de la salle multimédia]? Où est l’horaire? Où est l’horaire?»”

[Be2b, 23.11.2011]

Firmin: “...Mondays I passed by at Kiremba and Fridays at Kiryama and I asked: «Where is the [computer lab] schedule? Where is the schedule? Where is the schedule?»”

[Be2b, 23.11.2011]

Increasing command-and-control was the same coping strategy adopted by Cédric in similar instances. For example, having the opportunity to receive 2000 refurbished computers as a donation from a Belgian firm, Cédric decided,

together with his CTB superior, *not* to import them given the apparent incapacity of the schools management as well as the Ministry of Education to use them properly:

Cédric "Alors, tant qu'il n'y a pas de gestion réelle de la part des écoles, de la part du ministère, la situation reste telle quelle. Il y a des ordinateurs dans les salles multimédias; ils font preuve de bons gestionnaires et après, on peut voir et on peut penser à équiper les écoles avec plus d'ordinateurs, et d'autres écoles qui n'en ont pas."

[Be1a, 11.03.2010]

Cédric: "Thus, as long as there is no real management by the schools, by the ministry, the situation stays the same. There are some computers in the computer labs, they demonstrate to be good managers and then, we can see and we can consider equipping the schools with more PCs or those who haven't got any."

[Be1a, 11.03.2010]

Judging his decision is outside the scope of this analysis, which ultimately aims at portraying how the two most influential actors in the AESTP project shared:

1. The tendency to react tactically by reinforcing their command-and-control approach in intensity, in symmetrical fashion, thus increasing the relational distance they were trying to bridge.
2. A similar prolonged bewilderment when confronted with the ineffectiveness of this tactic.
3. The same propensity to make dispositional causal attributions to restore a coherence in their understanding of the world, falling victims of the *fundamental attribution error*.
4. Kindred coping strategies, oscillating between paternalism and patronising, with an inclination for the latter.
5. The incapacity to zoom out, step aside of their own interpretive framework and questioning it by temporarily assume the point of view of their counterpart, in an attempt to earnestly understand their worldview (Sclavi, 2003 see Chapter 7), especially with regards to technology (see Chapter 8).

Moreover, as the leader of the largest CTB project worldwide, Cédric was under tremendous pressure vis-à-vis his hierarchical superordinates, whose interests and rationale remained inaccessible to me, yet surely influenced heavily Cédric decision making. This manifested itself vividly during the negotiation for our Memorandum of Understanding (see Section 4.3).

6.4 Burundians' meta-reactions

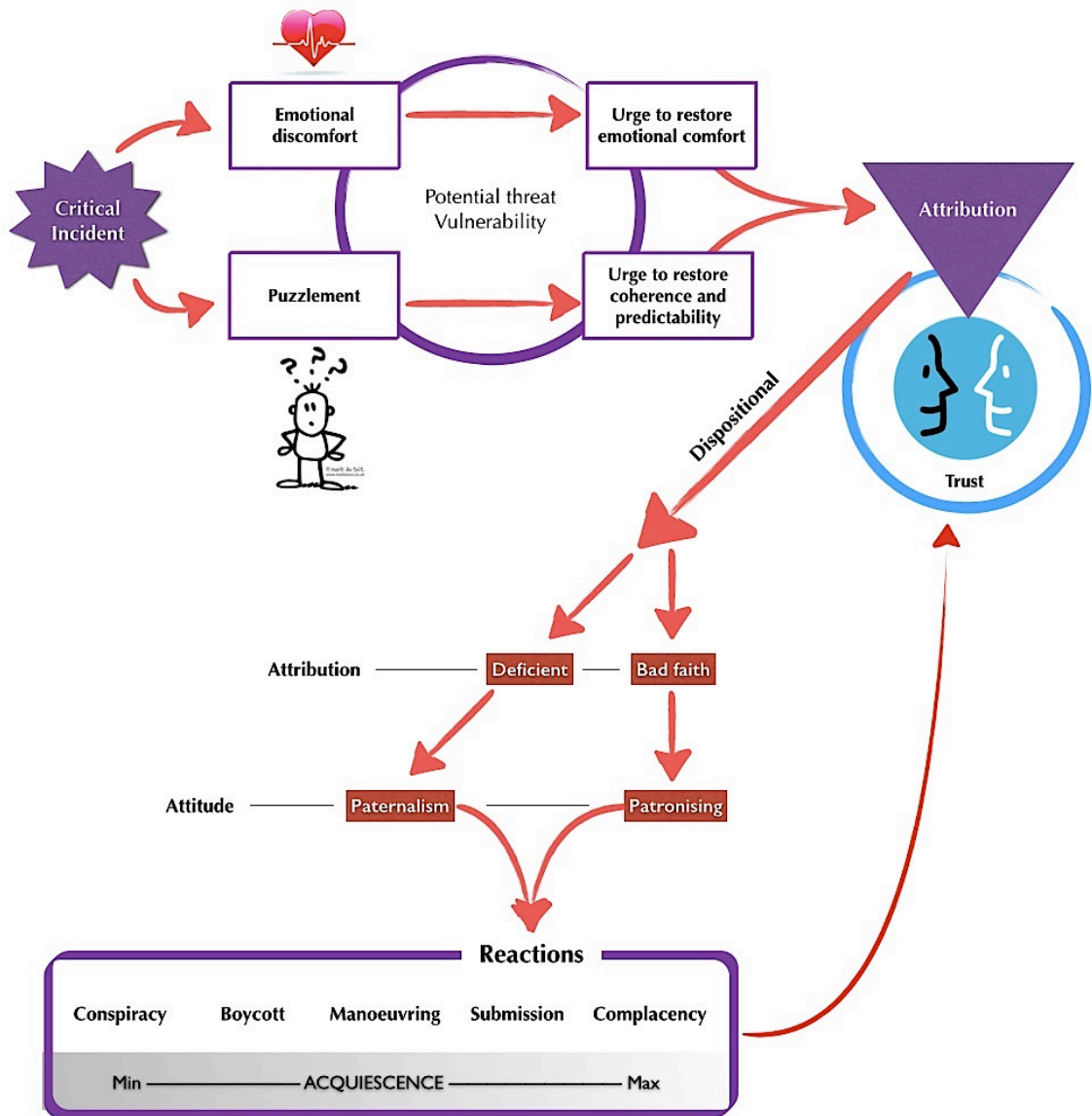
Burundians' reactions to these attitudes varied. Five main reactions can be identified and ordered along a continuum based on the degree of *acquiescence* with respect to their Belgian counterparts (Figure 6.2):

1. **Complacency** — Burundians do their best to please the Belgian counterpart, uncritically.
2. **Submission** — Burundians accept obeying Belgian orders, but do so unwillingly and they manifest their dissent, either verbally, paralinguistically (i.e. with silence), or non-verbally (i.e. with grimaces).
3. **Manoeuvring** — Burundians promise to comply, pretending willingness and commitment, to induce a benevolent attitude in their Belgian counterpart so as to obtain the best deal during the negotiation, yet they do not maintain their promises.
4. **Boycott** — Faced with demands they consider unacceptable, Burundians actively sabotage the process proposed by Belgians in confrontational fashion.
5. **Conspiracy** — Burundians covertly plot against the Belgian counterpart who is perceived to be utterly an enemy to be eliminated, either by expulsion from the country or with violent means (i.e. life threats, aggression, murder).

In the circularity of human interactions to *punctuate action, reaction and reactions to the reactions* is an arbitrary way of segmenting the flow of experience (Sclavi, 2003; Watzlawick *et al.*, 1967). Since the dispositional route of the interpretive framework presented so far aspires to capture a *Eurocentric* perspective, it appeared convenient to consider the critical incident as 'the action', the Belgians' attitude as 'the reaction' and the Burundians' responses as 'the reactions to the reactions' — *meta-reactions*.

In the rest of this section the five *meta-reactions* are each explored in turn.

Figure 6.2. Interpretive framework: the dispositional route and its consequences.



Source: Author.

6.4.1 Complacency

PB: "Donc, qu'est-ce qui s'est passé depuis la fin de la formation?"

Joel, gestionnaire EPC: "OK, merci de la question. Après la formation qui a été très bénéfique pour nous, nous nous sommes engagés à entretenir cette salle comme convenu, vous saviez bien que vous aviez insisté sur la maintenance de la salle c'est à dire l'entretien des machines, nous nous sommes engagés et nous avons tout fait s'il y avait une machine qui est en panne nous avons essayé de réparer jusqu'à l'heure où nous sommes toutes les machines restent fonctionnelles."

[Bu41a, 03.03.2010]

Firmin: "C'est celui qui est un peu simplet, à Kiremba, je pensais un peu fou mais le gars est très très bien. Il s'occupe de tout le monsieur. Il est très bien. Ce n'est pas parce qu'il est un peu plus timide qu'il... il est bien. Je lui explique et il fait bien."

[Be2b, 23.11.2011]

PB: (...) So, what happened since the end of our training?

Joel, EPC lab manager: "OK, thank you for your question. After the training, that was very beneficial for us, we strove to maintain this lab as agreed, you surely remember that you had insisted on the lab maintenance, that is to say servicing the machines, we committed ourselves and we've done everything and if there was a PC out of service we have tried to repair it and until now all workstations are working properly."

[Bu41a, 03.03.2010]

Firmin: "Is the one that is a bit simpleton, I thought he was a little crazy, but in fact he's very very good. He does everything that guy. He's really good. It is not because he's a bit more shy that... he's good. I explain to him and he does well. "

[Be2b, 23.11.2011]

These excerpts represent well the attitude adopted by some Burundians involved in the project with regards to their European counterparts. EPC's lab manager was very eager to impress me, very much the same way a good pupils wants to impress his teacher, to the point of denying any problem — and there were! — in order to look good. Highlighted in bold are those expressions that carry his complacent attitude more vividly.

The person described by Firmin instead was the *Préfet de discipline* (the person in charge of the pupils' supervision when outside the class) at LT Kiremba. His attitude was always extremely kind and rather subservient, to the authority in general, but especially so with white expatriates like Firmin and myself. His pleasing attitude evoked that of a sacristan with his priest. As noted earlier (see Section 5.3.2) Kiremba micro-culture was extremely hospitable and altruistic compared to everywhere else in Burundi, and the legacy of the Swedish Pentecostal mission was evident both in the architecture and in people's attitude (Nyberg Oskarsson, 2004). Nonetheless, when the same attitude was adopted in a working relationship with a Belgian expatriate whose attitude

mimicked so closely that of the former coloniser, the resulting relationship could easily become servile and self-denying. However, when both parties colluded steadily in this asymmetrical commander-executor relationship, the interaction could be very smooth. The repeated praise expressed by Firmin clearly shows how this obedient attitude was the one he held as ideal: “I explain to him and he does well.” In his landmark book *The Pedagogy of the Oppressed*, Freire (1970) conceptualises this complacent attitude as the interiorisation of the oppressor by the oppressed. Hierarchy and status inform social interaction in Burundi, as in most African countries (Van Stam, 2012a), to a much higher degree than in Europe. Ironically this very asymmetry appears to undermine the emancipation of the disadvantaged declared as the overall goal of this bilateral cooperation — as discussed in Chapters 7 and 8.

6.4.2 Submission

Adélar, directeur technique ETP: “Oui, de même, parce que à un certain moment on vient, on s'improvise coopérant dans des choses qu'on ne connaît même pas, et on vient on exploite la patrie, à un honoraire que... qui ne vaut rien, alors que c'est eux [les Burundais] qui travaillent à leur place.

Il suffit que le petit pauvre il ait sa petite somme, il se contente de cela, mais quand même il voit! Il voit quelque chose de démesuré: je le vois, il le voit! Moi j'ai contacté les conseillers pédagogiques: à un certain moment on leurs avait promis un prime de qualité, avant, mais il se sont contentés, sinon c'était leur travail quotidien, ils devaient le faire, faute de mieux sinon, [ils auraient du s'opposer — sous-entendu] parce que le projet devait marcher, parce que la coopération c'est la coopération, qu'est-ce que voulez... Là on sous-entend l'aide.

Voilà: [il me passe un feutre rouge] moi je donne à Paolo, il me donne, moi je lui donne, alors comme sa vient dans l'autre sens, qu'est-ce que vous voulez? Nous devons rester avec qu'un feutre!”

PB: “Là, que je te donne le rouge alors que tu veux le bleu, toi tu doit garder le rouge car c'est un cadeau: c'est ça que tu dis?”

Adélar: “Ouais, voilà! Je t'ai pas demandé du rouge, mais comme moi je voulais du bleu, tu m'as fait le rouge, je dois accepter comme tel, voilà, c'est ça.”

Adélar, ETP technical director: “Yes, indeed, because at a given moment you come, you act as Aid worker on stuff you don't even know, you come and exploit the homeland, with a salary that... that it's worth nothing, when it is them [the Burundians] who work on their behalf.

It is sufficient that the little poor has his little sum, he is satisfied with that, but nevertheless he sees! He sees something disproportionate: I see it, he sees it! I have contacted the pedagogical advisors: one day they had been promised a quality reward, before, but they found happiness, although it was their everyday work, they had to do it, lack of better options [they should have opposed themselves — implicit in the tone] because the project has to work, because the cooperation is the cooperation, what do you expect... Here I mean Aid.

Here you are: [he hands me a red marker] I give this to Paolo: he gives me, I give to him, so, since it comes from them, what do you expect? We have to stay with only one marker!”

PB: “So, I give you the red while you want the blue, you, you have to keep the red because it is a gift: is this what you're saying?”

Adélar: “Yeah, right! I haven't ask you for the red, but since I wanted the bleu, you passed me the red instead, I have to accept it

[Bu20nb, Net-Map, 03.11.2011]

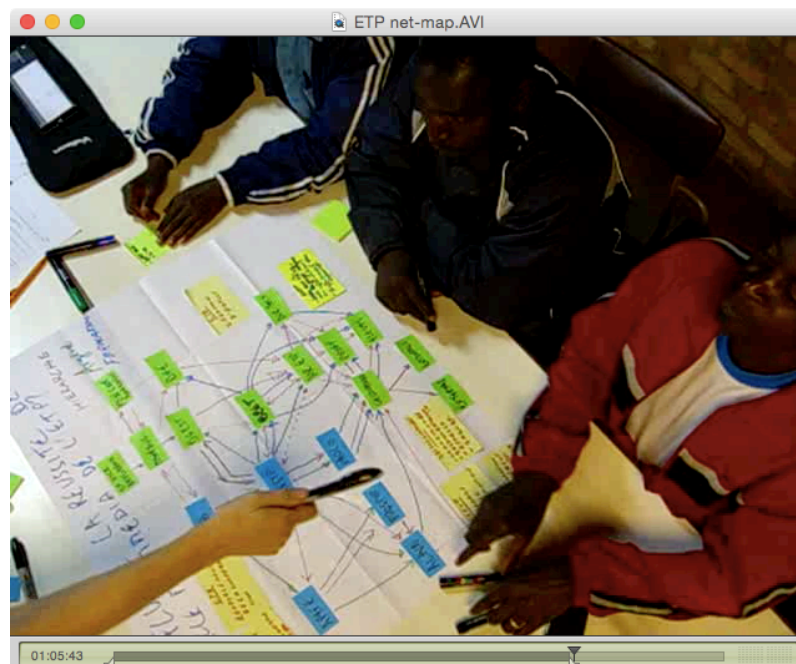
as it is, that's it, full stop."

[Bu20nb, Net-Map, 03.11.2011]

This excerpt represents very well the *submission* meta-reaction. The interviewee was the technical director of ETP. He was an alumnus of the school and had always worked there, thus he had a very strong bond to it. He was proud both of his school and of his homeland Burundi as well. Thus here, one hour into the Net-Map he had been drawing together with the newly appointed school principal and the computer lab manager, he expressed openly his critical views on Aid practices. He blamed both the foreign aid workers, as incompetent and overpaid exploiters, as well as his fellow compatriots for colluding with the exploiters and finding happiness with much less than what they deserved instead of fighting for their rights. Interestingly he censured himself when talking about Aid workers' salaries — which he evidently considered outrageously high — by interrupting his speech (“à un honoraire que...”) and then flipping the judgement with irony (“qui ne vaut rien”), thus emphasising even more the paradox between the low value of the expatriates' work and the huge sums they were perceived to be gaining (Carr *et al.*, 2010; Toh & DeNisi, 2005).

The ‘marker’s exchange’ scene described above is hard to render in written, as his gestures carried most of the meaning (Figure 6.3).

Figure 6.3. Frame from the videorecording of the Net-Map session held at ETP representing the ‘marker exchange’ scene.



Source: Author (02.11.2011).

Thus my verbal intervention was simply putting words to what he was clearly enacting by giving and taking the red and the blue markers and his immediate reply (*Voilà!*) clearly confirmed by the tone of his voice a complicity with me: “*You know I shouldn’t be talking like this, especially in front of my superior, but this is the reality as I see it and I’m glad you get it.*” — this was his implicit message. Indeed, both the principal and the lab manager were visibly uncomfortable hearing him be so politically incorrect. Realising it, the interviewee hurried to rebalance his declaration by praising some of the interventions carried out by the Belgian cooperation immediately after:

Adélarde: “*Mais quand même il faut dire une chose, cette histoire de Cooperation Technique Belge venait au bon moment, car le programmes [ministeriels] dataient de très longtemps: 1988! Bon comme ils sont venus, on a procédé au nouveau programme de l’enseignement technique... ça va, ça va...*”

Directeur ETP: “*Vraiment ce n’est pas dans cet angle que je voudrais parler. Peut-être c’est le point faible de l’AESTP, sinon c’est le renforcement de la cooperation dont on parlait et M. Paolo a demandé pourquoi. Moi je dirait c’était d’améliorer la qualité de l’enseignement technique...*”

[Bu20b, 03.11.2011]

Adélarde: “*Yet, truth be told, this Belgian Technical Cooperation thing arrived at the right time, since the [ministerial] programmes were severely outdated: 1988! So, since they came, the new programme for vocational training has been put underway... It’s ok, it’s ok...*”

ETP principal: “*Honestly, it is not under this perspective that I would like to talk. It might be a weakness of the AESTP project, nonetheless is about the reinforcement of the cooperation we were talking about, and Mr Paolo asked why. I’d say it was to improve the quality of vocational training...*”

[Bu20b, 03.11.2011]

However, after having complained about the complacent attitude adopted by many of the Burundians involved in cooperation projects, the interviewee himself ended up being guilty of the same by watering down his criticism in order to be perceived as less confrontational by his compatriots and by me. Indeed I was still perceived as a representative of the category “Aid workers”, despite all of my efforts to convince them that I was now an independent researcher no longer involved with the Belgian cooperation organisation. Hence, having just introduced the two representatives of the ST Foundation, who were proposing further technological assistance to the school, invoked that old interactional frame (see Section 4.4.1). The principal eventually intervened to restore political correctness and realigned his narrative with the AESTP project statutory goals. With this last conversational move the meta-reaction was no longer classifiable as submission, but rather as *manoeuvring*, in that there was a deliberate effort not to spoil the relationship with the Aid provider, avoiding any open criticism, so as to minimise the risk of an interruption of Aid

flows due to interpersonal retaliation.

The submissive attitude was very common and not only in the context of the relationship with Belgians, but also among Burundians, whereby the subordinates may covertly criticise their superiors, but without taking any action towards changing their situation. This is by no means a Burundian exclusive; such submission can be found in most organisations the world across. Yet the kind of resignation observable among Burundians, when victims of power abuse by a superior in the hierarchy, was reported as a distinctive trait by both some Europeans and Burundian interviewees and is further discussed in Chapter 7:

Maurizio, délégué à la co-gestion CTB: "Quello che hanno si tengono: è uno dei limiti per cui il Burundi non si alza. Perché è un popolo rassegnato alla sua storia alla sua condizione."

[Be6b, 28.11.2011]

Juvenal, gestionnaire ETP: "Nous sommes un peu... nous sommes un peu peureux, on n'a pas à faire des aventures, je ne sais pas si vous avez constaté ça, ils ne font pas beaucoup d'aventures [les Burundais]."

[Bu21b, 13.11.2011]

Maurizio, CTB co-management delegate: "What they have they keep: this is one of the limits why Burundi does not raise. Because it is a hopeless people, resigned to its history, to its condition."

[Be6b, 28.11.2011]

Juvenal, ETP lab manager: "We are a bit... we are a bit fearful, we are not adventurous, I don't know if you have realised that, [Burundians] they don't go much for adventures."

[Bu21b, 13.11.2011]

Maurizio was an Italian project manager, living in Burundi for seven years and working with the Belgian Technical Cooperation in a similar project on vocational education with a position homologous to Cédric's (see Sections 7.4.1 and 9.9).

6.4.3 Manoeuvring

Distinguishing the five meta-reactions listed earlier is but an analytical tool. Indeed they blur into one another. The following excerpt links back to the submissive attitude described earlier, but with a twist:

Robert, conseiller pédagogique: "D'ailleurs le jour du colloque Cédric, il a dit que voilà, ils avaient étudié, ils avez vu que tout de même celui qui gère la salle, les gestionnaires des salles des écoles, qu'ils doivent avoir quelque chose. Il a débloqué une somme pour les encourager: 40.000BIF ((en riant))

(...) Cédric nous a donné 40.000 pour que nous puissions partager, 8.000, 8.000...((Rire))"

Robert, pedagogical advisor: "As a matter of fact, on the day of our gathering Cédric told us that here you are, we have studied, and we've realised that the one who manages the lab, the managers of the computer labs in the schools, they have to receive something: they unlocked a sum, they encouraged them with 40,000BIF ((chuckling))"

[Bu05a, 12.03.2010]

(...) Cédric gave us 40,000 so that we could share, 8,000, 8,000... ((Laugh))"

[Bu05a, 12.03.2010]

This excerpt is the meta-reaction to Cédric's '40,000BIF solution' to the computer lab managers' problems quoted in Section 6.3.1. The interview was held in a very informal setting, a bistro, right after leaving the office, in the evening, and four of the five pedagogical advisors who had been trainees were present. The atmosphere was very jovial and beer was on the table. In other words, it was the Burundian version of the British pub gathering with colleagues. While technically challenging because of the background noise and dim lights, this setting was conducive to greater confidentiality and less political correctness. Thus when interrogated on the episode, the main narrator's answer went from very serious to a contained laugh, which clearly indicated a mocking attitude towards Cédric's small monetary incentive — which was even smaller for them since it had to be split into five. In fact, the five pedagogical advisors had reconfigured the BEET computer lab (with my assistance) as a way of practising what they had learned during the training. Hence the final sum for each one was equal to the cost of six beers. Interpreting the ensemble of verbal and non-verbal cues in that specific passage, this answer appeared as a way to 'escape' from an oppressive situation through humour. All interviewees had been collaborating with the Belgian cooperation organisation since 2005 and the narrator in this instance had been involved in other cooperation projects before. Therefore his laugh sounded like that of an old veteran of Aid. He was well aware that Cédric's attempt to address the complex problems faced by computer lab managers and the tension that had grown between him and them with 'a tip' was ridiculous. It is my understanding that the power asymmetry was so lopsided against them and so deeply rooted in their colonial past, together with the power-distance being so embedded in Burundian culture, that they had long lost hope of rebalancing their relationship and preferred to accept-and-adapt rather than enact a fierce opposition (Freire, 1970). There was in the narrator's voice a sense of detachment and resignation that the Belgo-Burundian social drama was crystallised and could not be changed: "*All you can do is try to play along to reap whatever benefit can be reaped for as long as the pièce is on and don't take it too seriously.*" — could have been the caption for the conversation. This I termed

manoeuvring. ETB's principal explained this attitude as follows:

Théophile: "Il faut tout simplement savoir jouer sur la psychologie des gens: si j'ai connu ta manière d'agir, et puis dans notre culture burundaise, il ya un proverbe qui dit que «Uwujja kwica ubukombe arabwagaza»: pour tuer un boeuf, il faut d'abord savoir le caresser, si tu vas directement pour l'affronter, tu n'y parviendra pas mais en le caressant petit à petit, tu vas y parvenir. Alors, si tu sais qu'il est dur, qu'il est arrogant, alors que tu cherche à gagner quelque chose auprès de lui, c'est toi qui doit savoir les démarches à entreprendre pour que tu puisses arriver à tes fins."

[Bu10b, 21.11.2011. See also section 5.3.1]

Théophile: "You need to know how to play on people's psychology: if I've known your way of behaving, and then in our Burundian culture, there is a saying which says that «Uwujja kwica ubukombe arabwagaza»: in order to kill an ox, you need first to know how to caress it, as if you go to confront it directly, you're not going to get it, but if you caress it little by little, you're going to make it. So, if you know that he's tough, that he's arrogant, while you seek to gain something from him, it is up to you to know the steps to take in order to attain your goals."

[Bu10b, 21.11.2011. See also section 5.3.1]

Having such a lucid, detached awareness of relationship dynamics was not common among the Burundians I interviewed, yet this 'playing along' was definitely a broadly practised manoeuvring art among most of them (see also Section 6.4.4). This echoes Mosse's (2005, p. 229) account of a pluriannual bilateral project by DFID on participatory development in rural India:

"[The project] was not a hidden hand consolidating self-reliance by executing participatory development policy; it was a powerful external source of patronage interacting with regional and historical processes of change. For its ... beneficiary communities it was a means to access external resources, to articulate broader social ambitions and cultural re-evaluation as well as individual economic and political mobility."

Nevertheless, the Belgian counterpart was repeatedly confronted with the effects of this skewed communication and felt fooled around: "*You tell yourself they make a fool of people, frankly*" (see Firmin's quotation in Section 6.3.2, [4]). The long-term effects of this form of behaviour practised by the both parties are examined in the conclusion of this chapter.

6.4.4 Boycott

I experienced the boycott meta-reaction first hand. The critical incident that best portrays this reaction involved me directly. Here is the relevant excerpt from my second ethnographic snapshot (15.12.2008):

1. "What other priorities come first for them? Why ?
2. Once we passed from declarations to practice, other priorities show up in all their might. In the final day of my first week of training, we discussed the

management of the per diem — the daily amount of money participants perceive as a reimbursement of the expenses they had to sustain to be able to participate to the training. Now, the presidential law states that each participant coming from outside the town where the meeting is held (foreign participant), has right to receive 25.000BIF per day of training, while the average monthly salary of a secondary school teacher is 80.000 francs. So, 3 days of training worth almost as a full month of regular work. Participants living in the same town, since they don't have to incur in extra expenses to eat and lodge, will not get any per diem.

3. *While conceiving the training, I planned to equally redistribute the sum of all per diem allotted to the foreign amongst all participants, based on the fact that we will have lived and lodged together for the whole training. What could appear as unfair with regards to the outsiders for this one training session, would be totally fair if applied to the whole project, as the next training sessions will be held in other cities, so that the roles of resident and foreign will be swapped.*
4. *Plus, I had explained that 50% of what was left from the per diem after having paid the food and lodging would be left to the participant, while the other 50% would have constituted a start up fund to pay the connection fees.*
5. *Even if I had clearly stated this mechanism when presenting the initiative, during the selection process, and I had the selected people sign a sort of contract as a condition for participation, I could tell that they weren't happy with the system and their signature wasn't deliberate, but rather forced. So I decided to re-open the discussion on the final day, after having worked and lived together for four days and thus having given them a touch and feel of the training quality and style.*
6. *No way. By no means this rule I had imposed could be applied, not even if amended by renegotiating the percentage. The per diem is individual and everyone has the right to administer his/her money as s/he wants, end of story. Why such a strong and stiff resistance? Well, clearly people participating in such a training are under a lot of social pressure from their relatives who know perfectly how lucrative these training are: almost automatically this forecasted extra income is being allotted to satisfy this or that need, so that inevitably the prospect of not earning the whole 'loot' equals to an unpleasant trade-off." (see Annex 15)*

The style of this excerpt does not render well the animated debate that actually took place that day, when it became clear that had I not dropped that rule, they would have boycotted the training, as one of the pedagogical advisors admitted later when interviewed:

Pierre-Clavert: “(...) parce que vous êtes venu avec des idées peut-être européennes (...), mais ce que j’ai vu, vous vous êtes adaptée après, ce qui est une très bonne chose. Si non on allait risquer de passer six mois dans des problèmes interminables, mais ça s’est passé un mois uniquement.”

Robert: [superposé] “Oui, mais après il nous a écouté on s’est entendu!”

Pierre-Clavert: “Après, on s’est entendu, vous vous êtes adapté ce qui est un point très positif que je reconnais, mais au début c’était dur!”
[Rires]

[Bu05a, 12.03.2010]

Pierre-Clavert: “(...) because you came with Europeans ideas, perhaps (...), but what I saw, you have adjusted thereafter, which is a good thing. Otherwise we risked to pass six months in never-ending problems, but it only lasted one month.”

Robert: [overlapping] “Yes, but then he listened to us and we reached an agreement!”

Pierre-Clavert: “Then we reached an agreement, you adjusted, which I find to be a very positive point, I acknowledge that, but in the beginning it was hard!”
[Chuckles]

[Bu05a, 12.03.2010]

Recapitulating, faced with my closed, authoritarian attitude, training applicants' resorted to submission, by silently expressing their contrariness towards this unconventional arrangement via non-verbal cues — which I deliberately ignored. They then resorted to manoeuvring: they solemnly signed a document in the presence of their principal, formally committing to adhere to this displeasing rule hoping that they would have gained from the course anyway. However, they also knew that I had no legitimate authority to enforce it, since I had no place in the Ministry of Education hierarchy:

*Pierre-Clavert: “M. Paolo, je l’ai très bien expliqué que, ces signatures là que les enseignants ont signé, que ça veut rien dire; parce que il [M. Paolo] n’a pas de prison, il n’a pas de cachot, je lui ai même dit, s’ils se révoltent je serais un observateur neutre, c’est le terme que j’ai utilisé, **parce que au Burundi, nous disons le contraire de ce que nous pensons**, je m’excuse. [Rire]”*

[Bu05a, 12.03.2010]

*Pierre-Clavert: “Mr Paolo, I have explained it very well that those signatures, those signed by the teachers, they are meaningless, because he [Mr Paolo] has no prison, he has no jail. I even told him: if they turn against you, I’ll be a neutral observer, **because here in Burundi we say the opposite of what we think**, I beg you pardon. [Chuckles]”*

[Bu05a, 12.03.2010]

Here there is an open admission of resorting to duplicitousness not only with Belgians, but rather as a typical Burundian cultural habit (in bold above). This was confirmed also by several accounts by missionaries who had lived many

years in Burundi as well as in neighbouring countries (DRC, Rwanda, Uganda).

Finally, when the rule was to be applied for the first time, they openly threatened a boycott. When the opposition is not against *something*, but against *someone*, the meta-reaction can escalate to conspiracy, which is treated in the next section.

6.4.5 Conspiracy

Conspiracy was the most extreme of the five meta-reactions: the foreigner was perceived as an enemy to be eliminated, either by forcing him or her to leave the country, or in the worst case scenario, by assassination. During my stay in Burundi two Aid workers I knew were killed in ambushes, one was shot but survived, and another one left the country after receiving bullets in an envelope.

Luckily, nothing so dire happened during the AESTP project, but in the project circles everybody was aware that there was a fierce ongoing conflict between Cédric and the ETS Kamenge principal. According to the ETP technical director:

Adélard: "Je sais que Cédric a fait... il a, il a essayé de faire des démarches pour faire démettre le directeur [de l'ETS] et le directeur était plus puissant que lui. Il n'a pas pu. Plutôt c'est Cédric qui a fallu partir à cause du directeur!"

[Bu20b, 03.11.2011]

Adélard: "I know that Cédric has... he tried, he tried to have the principal [of ETS] removed, but he was more powerful than him, so he couldn't. On the contrary: he's Cédric who had to leave because of the principal!"

[Bu20b, 03.11.2011]

Cédric's authoritarian attitude and management style had earned him the hostility of all his main Burundian interlocutors, namely, all three directors of the Ministry of Education units targeted by the AESTP project (DGEST, DGBP and BEET – see Figure 3.6) and many of the school principals (see Section 5.3.1). In one case he succeeded in having a principal replaced by threatening not to support the school any longer. However, a similar attempt with the ETS principal failed since he was a highly ranked member of the ruling party. In Burundi, secondary schools are precious political outposts and ETS traditionally counted as a prestigious strategic asset: with more than 2000 pupils paying the tuition fees and many workshops servicing the local market, the ETS generated a considerable financial turnover. Consequently, from Cédric's perspective, the principal was not serving the statutory educational goals since he was often absent to attend political meetings and was suspected

of embezzling money. Therefore he had to be replaced.

From the principal's perspective, while on the one hand he was welcoming the conspicuous amount of expensive, cutting-edge equipment brought in by the project, he did not at all like having the Belgians present in his school as 'resident guests' (in the case of Firmin), constantly pressuring him and questioning him about his governance. Early on in the project implementation he decided to collaborate only the bare minimum and to limit his encounters with Cédric as much as possible, patiently waiting for the project to end and the Belgians to leave, so as eventually to regain his full power over the school.

6.5 Conclusion

This classification of meta-reactions emerged from my data, yet a similar categorization was conceived by Villarreal (1994, p. 9) in her study of a Development project in Mexico.:

“However, what one might identify as points of resistance, of defiance and challenge, are intertwined with elements that can be described as compliance, conformity and submission. Hence, when speaking of subordination, one implies both an action imposed from 'outside', and a self-inflicted condition.”

I do not claim this to be generalizable nor exhaustive. Moreover, these meta-reactions can coexist and recombine depending on the individuals or groups who are involved in the critical incidents. Yet I stress the role of cultural differences in shaping these dynamics. In Burundi the sense of belonging to a group and its cohesion appeared to be much stronger than I observed and experienced in Europe. For example, in the case of the contract signed and then disregarded (see Section 6.4.4), those who, as isolated individuals, had initially agreed to comply with the foreign authority (though unwillingly), changed their mind when the chance of complying with new and higher status local leaders arose (pedagogical advisors), and they felt the protection of a cohort. Again, this is not qualitatively different from what can be observed in European cultures, but the *degree* by which this group cohesion and identification with the leaders occurs in Burundi seems to be considerably higher, as discussed further in Chapter 7.

Taking the initiative to challenge imperious authority is rather risky behaviour and requires an alchemy of conditions to occur. In this case-study the following three such conditions could be identified:

1. There must be some leaders, capable of assembling the discontent emerging amongst individuals and turn it into action — in this case, the pedagogical advisors, who were hierarchically one step above the teachers and more familiar with the power dynamics of Aid projects.
2. A locally accepted rule must have been trespassed and this violation considered dire and upsetting — a serious threat to the established order.
3. For the conflict to emerge explicitly, there must be a perception that a space for negotiation is there, however minimal. Otherwise the boycott will be covert, in the form of lack of authentic cooperation or sabotage.

When the conflict becomes highly polarised and the relationship escalates and the perception that a negotiation is still possible finally ceases, then conspiracy and the elimination of the enemy can become the ultimate solution. According to Bateson (1935; see also Hobbs, 2011), this escalation can assume two forms: *symmetrical schismogenesis* — when the opposing parties try to take each other over, as in the case of Cédric and the ETS principal — or *complementary schismogenesis* — when the bullying party exaggerates and the submissive party eventually turns around and fights back. In either case the result is a sudden rupture of the relational pattern and a radical change in the relationship, such as an open conflict (Rich & Craig, 2012). In ecological terms, the threshold of the ecosystem's resilience has been exceeded, as when an international NGOs decided to leave Burundi after one its employed was assassinated in an ambush (<http://bit.ly/1vTtleb> — accessed 28.08.2014).

In my research, I could not directly identify any complementary schismogenesis. Nevertheless during my second round of field research Firmin declared:

Firmin: "Maintenant lui, Cédric, il doit faire attention parce que ils [les directeurs des écoles ciblées] sont très fachés, tous. Kiremba est furieux avec Cédric."

[Be2na, Net-Map, 28.02.2010]

Firmin: "Now him, Cédric, he has to be careful because they [school principals] are very angry at him, all of them. Kiremba is furious against Cédric."

[Be2na, Net-Map, 28.02.2010]

As already mentioned in Section 5.3.2, Kiremba micro-culture was very respectful and obsequious to the guests and to authority (Nyberg Oskarsson, 2004). The Lycée Technique Kiremba was the best performing school with

regards to the computer labs and well beyond. Its principal had made this very rural school outperform all other vocational schools in the country in the state exams in 2010. He was one of the principals who were wise and detached enough to manoeuvre the AESTP project impulses to the school's advantage, without reacting emotionally to Cédric's authoritarian attitude. Yet according to Firmin who at that time was visiting Kiremba almost on a weekly basis — thus far more than any other AESTP staff member — Kiremba was “*furious with Cédric*”. In Bateson's (1935) framework, this is configured as a *complementary schismogenesis*, in that the bossy and the complacent attitudes had diverged apart so much to be on the verge of rupture. In other words, in a long-standing relationship dispositional attributions tend to crystallise the interaction and erode trust (Long, 2001, p. 69).

The following chapter further elaborates in this direction by enlarging the perspective, explicitly problematizing the bilateral relationship from a third-eye observation point that encompasses history and cultural differences, to make sense of the attrition observed in the research setting.

7 Structuring the interpretive framework: exploring the situational route

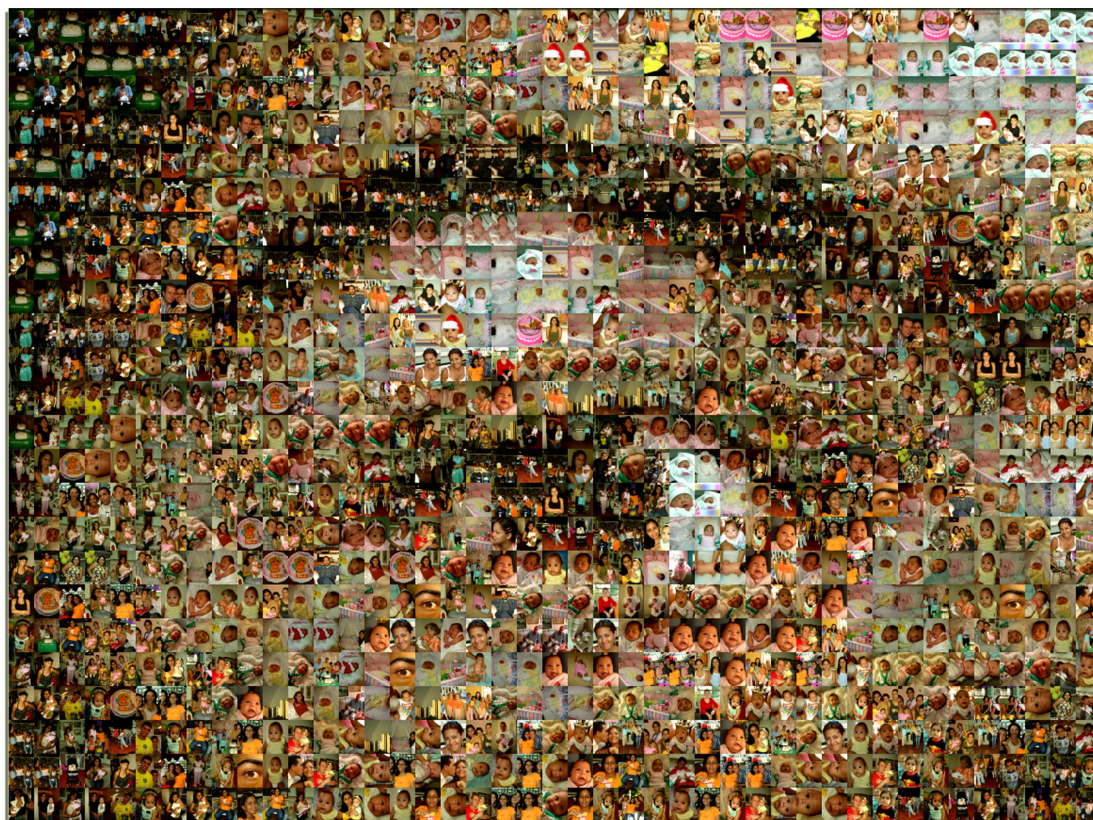
7.1 Introduction

As argued in Section 2.5.1, learning to *contextualise* (Gumperz, 1992b) is an essential part of the socialisation process during upbringing as it provides humans with the capacity to make sense of the world and coordinate their interactions. Sharing an interactional *frame* (Goffman, 1974) with an interlocutor drastically reduces the number of possible behaviours and offers us a manageable set of interactive repertoires and *scripts* (Schank & Abelson, 1975), such that our interaction is not perfect, but *smooth enough* to preserve a sense of coherence. This essential meaning-making process is hampered when the interlocutors do not share the same culture and consequently do not share the same set of frames or the same way of using them. That is, they do not share the same way of contextualising, as this too is culturally defined (Shweder & Sullivan, 1993; Vygotskij, 2010). Therefore, for the purpose of this research one can think of culture as *the art of contextualisation*. Moreover, culture is inherently historical: in a socio-constructionist perspective (Berger & Luckmann, 1966), it is the result of the *institutionalisation* of semiotic processes sedimented over generations — *phylogenetically* — “an adaptive process that accumulates partial solutions to frequently encountered problems” (Hutchins, 1995, p. 354). It is ‘*Adaptive*’ as it originates in the human need to conquer uncertainty enough to feel safe, thus increasing the chances of survival and fulfilment. *Ontogenetically*, every individual develops her own stack of maps, personalising those inherited by their primal community through experience.

This genetic conceptualisation of culture stands in stark contrast with the ahistorical approach adopted by most Development projects, which tend to abide by a logic of management that calls for fixed timeframes: history starts on the day of inception and ends when the final auditing report is submitted (Engwall, 2003; Escobar, 1995; Ika & Hodgson, in press). Paradoxically though,

the reasons why Aid projects timescales are often 'out-of-sync' with the different conceptions of time found in the contexts for which such projects are intended are historical: they are modelled on business projects practices en vogue in industrialised, Aid providing countries, in accordance to *their* needs and worldview (Chambers, 1997; Diallo & Thuillier, 2004; Muriithi & Crawford, 2003; Van Stam & Van Oortmerssen, 2010). These countries often carry a past as colonisers, as in this case study. Hence in the next section, the analytical timeframe is expanded, stretching back in the past, to offer a deeper understanding of the relationships amongst the AESTP project stakeholders at the time of this research. History is the first element of the *situational route*, which is proposed here as an alternative to the dispositional (Figure 7.2). Its other elements will be expounded along the way, throughout this chapter, namely the ongoing co-construction of *the Other* in relationship to one's ingroup as well as the role of *cultural matrices*. This is metaphorically in the photomosaic in Figure 7.1, where our image of *the Other* is the aggregate of a multitude of memories of interactions, some experienced directly, some vicariously, yet each taken from a specific angle — that of the photographer.

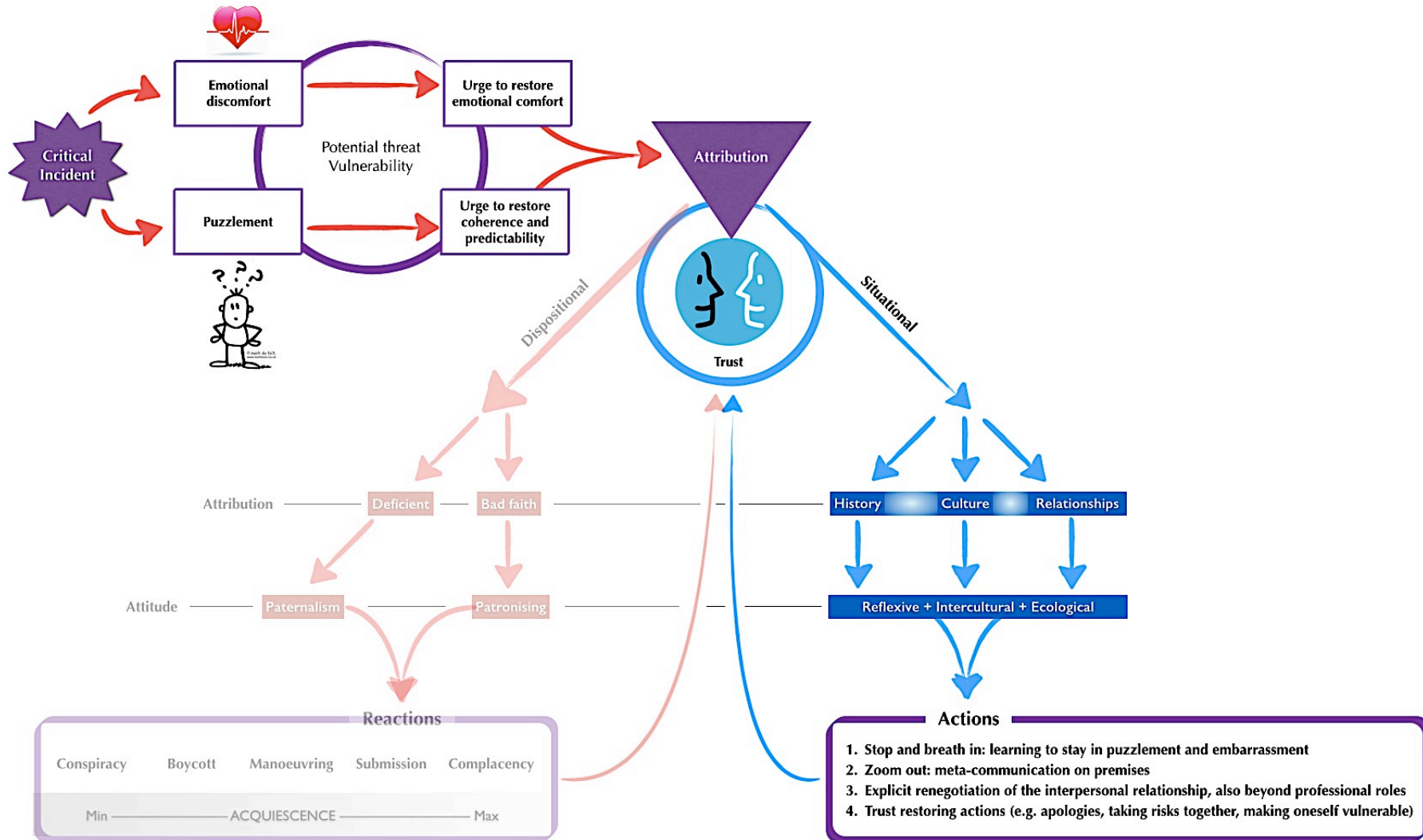
Figure 7.1. A metaphorical representation of the co-construction of *the Other*.



© 2008 walter seifert

Source: Courtesy of Walter Seifert © 2008

Figure 7.2. The interpretive framework for critical incidents: the situational route.



Source: Author.

7.2 History matters: the Hutu, the Tutsi and the Belgians

“It is upon the Tutsi that the Belgian administration politics rested” (Lugan & Fournel, 2009, p. 650).

Belgium obtained the mandate to administer the region now known as Burundi in 1919, by the League of Nations, as part of the post-World War I negotiations (see Section 3.2). As distant and foreign rulers, Belgians were aware that in order to maintain control over Burundi they had to support the existing Tutsi minority (20% of the population) which was already dominating the Hutu majority (Figure 7.3)—(see Murithi, 2007, p. 14). Indeed, had they supported this majority, they would have been directly exposed to the risk of being overthrown.

Figure 7.3. Two Tutsi and a Belgian colon (≈1900).



Source: <http://bit.ly/1urWCLZ> - accessed 29.08.2014.

This age-old *divide et impera* strategy worked well for the Belgians until the late 1950s, when the Tutsi elite aspired to remove their white rulers, Belgians and missionaries, who reacted by shifting their support to the Hutu majority in an attempt to rebalance the power distribution. The same politics was applied in neighbouring Rwanda, where a civil war started in 1959, with the Hutu majority gaining power and killing Tutsis by the thousands, forcing the traditional king into exile (Lugan & Fournel, 2009). Fearing the same destiny, the Burundian Tutsi elite tried to secure its power by occupying the army top ranks and suppressing any Hutu opposition.

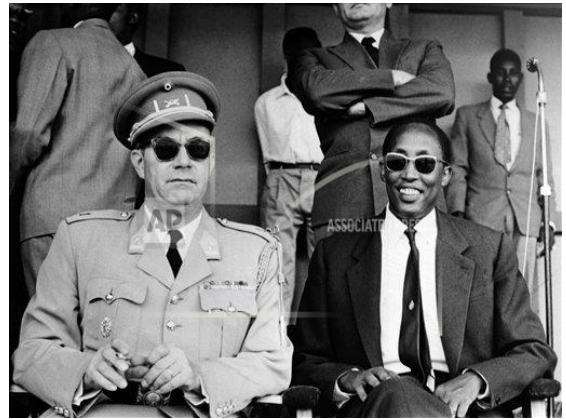
The charismatic prince Louis Rwagasore, who had fiercely called Burundians to boycott the Belgian administration and gain national independence, won the elections and became Prime Minister in 1961. Shortly after, a Greek killer hired by the opposing party, supported by the Belgian local authorities, shot him. The fragile equilibrium eventually collapsed: on June 30th 1962 the murderers, sentenced to death (Figure 7.4) were shot by a Burundian battalion commanded by a Belgian officer. The following day Burundi proclaimed its independence (Figure 7.5)—(Leclerc, 2009; Lugan & Fournel, 2009).

Figure 7.4. A scene from the trial held in June 1962, ensuing Prince Rwagasore assassination.



Source: Iwacu Burundi

Figure 7.5. The Belgian authority representative in Burundi, Colonel É. Henniquiau, and the first Prime Minister of Burundi as an independent country, André Muhirwa.



Source: Associated Press archives.

The end of Belgian rule marked a sudden shift from a period of relative stability to a much more troubled time, with five military putsches, many political murders and recurrent inter-ethnic massacres, culminating in a civil war lasting 13 years (1993-2006), resulting in the deaths of 200,000 people (Scaruffi, 2009 — Figure 7.6).

Figure 7.6. Burundi's recent history timeline. In red the interethnic massacres. In green the coups. In blue, the UN Peacekeeping mission.



Source: Author

It is not disputed that ethnic tensions played a key role in these tragic events. This was still felt quite strongly during my stay in Burundi, which started in

October 2004. It was difficult to approach this issue as a researcher, since it was a real taboo for many Burundians who wanted to move beyond ethnic rivalries and ignore that variable to find a new unity as simply Burundians. Others though, held on to it, engineering a rift between the two ethnic groups in order to prevent a democratic election, possibly tempting the winning Hutu majority to seek revenge against the Tutsi minority. These concerns motivated the decision of the UN Security Council to establish a peacekeeping mission in Burundi in May 2004 (ONUB), to prevent violence, while helping to draft an ethnically balanced constitution — considered by the UN as a prerequisite for holding new democratic elections. My research/practice began just at this intriguing time for the country.

The new Burundi Constitution (<http://www.assemblee.bi/Constitution-de-la-Republique-du> — accessed 14.06.2014) was approved via referendum on 28 February 2005. Its articles 129, 143 and 164 establish capped ethnic quotas: a maximum of 60% of the government/national assembly/public companies members can be Hutu and a maximum of 40% can be Tutsi, whereas senators must compose 50% from each ethnic community (article 180). By the time my formal research started (2008), the ethnic homogeneity of political parties was decreasing. Although the ruling party (CNDD-FDD — Figure 7.7) had a strong Hutu representation and political connotation, some Tutsi members were serving as deputies and ministers. Increasingly, political arrangements were made considering both party membership and ethnicity.

7.2.1 Implications for this research

There are three reasons why these factors are relevant to my research:

1. The education system was politicised: provincial superintendents, high school principals, and technical directors were indeed considered political positions, more or less important depending on the school size and location. Those in such positions were sometimes dismissed abruptly for political reasons, with dire consequences. This instability affected the macro, meso, and the micro level as well, and consequently the computer lab management as well (see Section 7.6.1).

Figure 7.7. A Conseil National de Défence de la Démocratie-Force de Défence de la Démocratie party political gathering (CNDD-FDD).

FDD was the armed guerrilla once led by the current President Pierre Nkurunziza, before signing the peace agreements, dropping the arms and entering the parliament.



Source: <http://www.iwacu-burundi.org/> — accessed 29.08.2014

2. Such ethnic tensions resulted in a methodological and ethical challenge concerning my empirical research. Eventually, I decided not to focus on the ethnic and political distinctions, as I felt it would have aroused conflict and suspicion among my local interlocutors. It may also have compromised the trust and confidentiality that was required to explore the subtle dynamics occurring in the schools and in the project itself (Hammersley & Atkinson, 2007, Ch. 3).
3. Colonial history had shaped the relationship between the Belgian and Burundian counterparts in the AESTP project. To explore the subject, I later asked interviewees to devise an *analogy* to represent such a problematic relationship visually (see Section 4.5.3).

The following two sections examine the answers to these questions given by the two parties.

7.3 The CTB-Burundians relationship: *developees'* perspectives

Burundian interviewees produced a variety of analogies to represent the relationship between Belgian Aid workers and Burundians. I clustered these into six classes, ordered according to their popularity:

1. Father and son
2. Teacher and pupil
3. Beggar and benefactor
4. Runner and pulled
5. Driver and car
6. Handshake

I termed these as *developees'* perspectives to stress the passivity inscribed in all of them, including the handshake. Conversely, I termed *developers'* perspectives as those produced by European interviewees. This choice seemed the most loyal to the mutual self- and hetero-attributions that emerged from this analysis, yet with critical intent.

7.3.1 Father and son

Juvenal, gestionnaire ETP: "La coopération belgo-burundais c'est comme un papa, une mama, ou un papa et son enfant: il y a ce que le papa fait, et l'enfant ne comprend pas, le parent doit expliquer ce que l'enfant ne fait pas bien."

[Bu21b, 13.11.2011]

Juvenal, ETP lab manager: "The Belgo-Burundian cooperation is like a dad, a mom, or a dad and his child: there is what the dad does, and the child does not understand, the parent has to explain what the child is not doing well."

[Bu21b, 13.11.2011]

The *Father and son* analogy was recurrent in the interviews with Burundians. Six people resorted to it and two more mentioned an 'older brother-younger brother' relationship. Given the great importance of hierarchy in Burundian culture (see Section 7.6.1) these two instances were grouped under the same class, since the older brother is a sort of vice-father and is expected to be responsible for the younger brothers, especially if the father went missing.

A rich account of this relationship was offered by the ETB principal:

Théophile: "Je pense à l'époque coloniale, si on interroge l'histoire, depuis que la Belgique nous

Théophile: "I think that during the colonial époque, if we interrogate history, since

a colonisé, elle est restée très active dans le pays, beaucoup plus que d'autres, d'où alors elle prendrait l'image du père à l'enfant, le Belgique se prendrait le père et qui doit aider ou subventionner l'enfant que elle a vu naître. C'est dans ce sens que je le vois. Je ne sais pas si j'ai bien répondu à ta question. (...)

PB: "Donc vous dites que le père se voit comme un père de l'enfant, et l'enfant se voit comme un enfant avec son père."

Théophile: "C'est mon constat."

PB: "Est-ce que vous trouvez qu'il a quel âge cet enfant? C'est un petit gamin?"

Théophile: "Ce n'est pas un petit gamin. Dans notre culture **quand vous donnez la femme à votre fils**, il construit son *rugo* (Figure 7.8), son appartement en face du votre. Et bien c'est ce regard alors, pour qu'il reste auprès de toi, pour que tu puisses voir qu'il avance très bien, afin que tu puisses le secourir. Alors, nous sommes indépendents, mais la Belgique a gardé un regard sur nous pour nous aider à avancer, au rythme du développement actuel ou de la démocratie aussi. C'est dans ce sens. Cette entrée qui est là, et bien le fils divisait comme ça: il prenait une partie à l'intérieur ou il construisait devant et les entrées devaient être parallèles, pour que tu puisses comme père garder un œil sur ton fils malgré que tu l'as laissé libre, mais s'il avance (...) après cinq ou dix ans il peut aller construire ailleurs."

PB: "Et si on reviens sur la coopération, est-ce que vous trouvez qu'on est toujours dans les trois/cinq ans qu'on est devant la maison [du père] ou bien le Burundi est en train de... On est dans quelle phase?"

Théophile: "Moi je trouve qu'il reste toujours dans cette cohabitation, les *rugo* sont toujours un face à l'autre."

[Bu10b, 21.11.2011]

Belgium colonised us, it remained very active in the country, much more than everybody else, that's why Belgium would impersonate the father who must help and subsidise the son whom he has seen coming to life. It is in this sense that I see it. I don't know if I answered properly to your question. (...)

PB: "So you are saying that the father sees himself as the father of the child and the child sees himself as the child with his father."

Théophile: "It is my appraisal."

PB: "What age do you reckon this child is? Is he a little kid?"

Théophile: "He's not a little kid. In our culture **when you give a wife to your child**, he will build his *rugo* (Figure 7.8) his apartment in front of yours. Well, it's that look, so that he stays near to you, so that you could watch his progress closely, so that you can assist him. So, we are independent, but Belgium has maintained a look upon us to help us advance, at the current rhythm of development, or of democracy as well. It is in that sense. This entrance that is there, well the son would split like that: he took a part inside [the court] or he built in front and the entrances had to be aligned, so that you, as father, could keep an eye on your son, despite the fact that you set him free, but if he advances (...) after five or ten years he can go build somewhere else."

PB: "And if we get back to the cooperation, do you think we are still in the three/five years when we are still in front the [father's] house or instead Burundi is on its way to... In which phase are we?"

Théophile: "In my view he is still in that cohabitation: the *rugo* are still facing each other."

[Bu10b, 21.11.2011]

Figure 7.8. Aerial view of a traditional Burundian home (*rugo*).



Source: Acquier (1986, front cover picture).

This excerpt captures both the local traditional relationships between father and son and how they lend themselves as an analogy for the relationship between Belgium and Burundi today. A father figure who “gives the wife to his son” (in bold) and watches him so closely for so long before allowing him to move out of the court and seek full autonomy may appear to be over-controlling and outdated. While Burundian society has evolved and this is no longer the case, the choice of this analogy is remarkable for two reasons:

- a. It depicts what is perceived as an imperious ruling attitude by the Belgian cooperation with regards to their Burundian counterparts;
- b. It illustrates how such an attitude corresponds to Burundian cultural traditions, as discussed in Section 7.6.1.

7.3.2 Teacher and pupil

Michel, directeur d'intervention: "Alors si tu veux que je mette une image, je mettrai quelqu'un qui me tient la main et qui me tire pour accéder à la clé: l'instruction."

Tu vois, quand vous prenez votre enfant sur le chemin de l'école, vous le prenez parce qu'il ne sait pas encore où il va: «OK, let's go! This way». Jusqu'à ce que cet enfant comprenne que ce parent qui le tirait voulait le conduire à un certain endroit."

[Bu02b, 18.11.2011]

Michel, intervention director: "Thus if you want me to give you an image, I would put someone who holds my hand and pulls me to access the key: education."

You see, when you bring your child on the way to school, you bring him because he doesn't know yet where he goes: «OK, let's go! This way». Until this child understands that this parent who was pulling him wanted to conduct to a certain place."

[Bu02b, 18.11.2011]

This excerpt restates the *father and son* relationship, yet it makes an implicit component of it explicit: the father knows best, he is the source of knowledge *and* he gives access to knowledge. Two interviewees used this analogy, yet during the first round of fieldwork, when I had a trainer role, it was particularly striking how this analogy seemed to the interpretations of trainees. In the first week of training, we conducted a Net-Map exercise, by dividing the 28 trainees into 3 groups, each having to draw its own net-map to represent the computer lab sub-project (see Section 4.5.2). Once every group had its net-map ready, they were placed side by side and compared (Figure 7.9). From these comparisons, one group had interpreted the aim of the Computer Labs sub-project very differently from the other two. A charismatic and experienced pedagogical advisor, who worked at BEET, led the first group. He considered the goal to be the creation of a *network* of computer labs across vocational schools *in the country*. The other two groups were led by trainees who worked in the schools and therefore tended to frame the sub-project as the installation of a computer lab in *their* schools. The implications of this difference are analysed further in Section 7.5.1. What is relevant here is their interpretation of such difference:

*"These differences were extremely useful and rich to nourish the discussion, but what was most interesting to me was to observe how they couldn't see these perspectives as complementary to one another and every group tried to prove to the others that they were the ones who interpreted the instructions of the trainer correctly. So, culturally speaking, what emerged was that all these teachers, who were most likely good students during their school career, were all complying to the golden rule of success in this school system, which is "Do **exactly** what the teacher asks you to do": the closer you can get to your teacher's idea of how*

*things should be done, the more successful you are. And therefore the two groups could not be simultaneously right to the same degree: no ex aequo is possible. Inevitably, they felt they were graded, and since I supported the need for a comprehensive and long term view, automatically I was implicitly saying that the third group had gotten a better mark than the other two, and some participant from these groups started protesting that their interpretation of my instructions was **the correct one** and if now it turns out that's not, well then it's my fault as I didn't express myself clearly enough."*

[Ethnographic Snapshot #2, 15.12.2008]

Figure 7.9. Net-maps produced by the three trainees groups places side by side for comparison



Source: Author (08.12.2008).

The teacher-pupil dynamic was so engrained in the trainees' mentality that it shaped both (a) their interpretation of the Net-Map experience, *as if* there was a pre-existing, 'correct' net-map hidden somewhere to approximate to, and (b) *the relationship with me*, as a representative of the Belgian cooperation, of the 'developed world', of the 'wise whites who know it better' (Figure 7.10).

Figure 7.10. A photographic representation of the *Teacher and pupil* analogy.

Source: Author (12.07.2006) with permission of Giuseppe Ziggio, the portrayed teacher.

Yet after the project was over, one of the two interviewees who explicitly used the *Teacher and pupil* analogy, did so critically:

PB: “Et donc comme image tu ferais quoi? Tu n’as pas décidé.”

Fabrice, co-gestionnaire ETB : [silence hésitant].

PB: “Il y a certain qui m’ont dit: c’est comme un père avec un enfant ou bien un professeur avec un élève.”

Fabrice: “Un mauvais professeur, vraiment!”

PB: “Pourquoi?”

Fabrice: “Puisque si par exemple tu viens, je vais t’apprendre l’ordinateur et après mon départ, tu vas... tu vas utiliser ça: je t’apprends comment on ouvre, comment on ferme, comment on met un programme, comment utiliser Word et Excel et je pars, et si la machine tombe en panne, je vais continuer à travailler? Donc, l’AESTP c’est comme un professeur qui enseigne les élèves, mais avec des réserves pour que je cherche à demander à mon professeur ce qu’il a caché, pour que j’aurais toujours besoin

PB: “So, what image would you use? You haven’t decided yet.”

Fabrice, ETB lab co-manager: [hesitant silence].

PB: Some of you told me: it is like a father with a child, or a teacher with a pupil.

Fabrice: “A bad teacher, really!”

PB: “Why?”

Fabrice: “Because if for example you come, I will teach you the computer and after my departure you... you are going to use it: I will teach you how to open it, how to close it, how to put a program, how to use Word and Excel, and I leave, then what if the machine breaks down, am I going to continue working? Thus, the AESTP is like a teacher who teaches the pupils, but with some reservations, so that I will look up my teacher to ask what he hid, so that I will

de lui.”

[Bu14b, 18.11.2011]

always need him.”

[Bu14b, 18.11.2011]

This critique is echoed by other interviewees, and is discussed further in Section 7.3.7.

7.3.3 Beggar and benefactor

Figure 7.11. Pictorial representation of the relationship between Europe and Africa in ETSA computer lab manager’s interpretation.



Source: Author (04.11.2011).

The drawing above (Figure 7.11) is the pictorial answer given from a former trainee in charge of the computer lab at ETSA, the only school of arts among the targeted schools, and when directly asked, he claimed to have come up with it himself. He explained:

Emile, Gestionnaire ETSA: “L’Europe dépense beaucoup de fonds pour aider le pauvre africain qu’il a colonisé et exploité plusieurs années, mais selon la disposition de la carte géographique de l’Afrique moi en tant qu’artiste je vois que la carte symbolise une tête d’un homme tourné vers l’Europe, entrain d’attraper une goutte d’eau, mais dernièrement elle s’est

Emile, ETSA lab manager: “Europe spent a lot of funds to help the poor African whom it has colonised and exploited several years, but according to the position of the geographical map of Africa, I as an artist I see the map symbolising the head of a man, tilted towards Europe, while catching a drop of water, although lately it turned to

tournée vers le monde arabe (...) car toutes les choses que nous utilisons (les habits, les médicaments, les appareils électroniques, les chaussures, les objets de ménages,...) sont fabriqués par les arabes, les chinois, les indiens, malgré que souvent sont de qualité médiocre. C'est regrettable selon mon constat: l'Afrique devrait par contre se pencher beaucoup sur l'Europe, car ils ont vécu les moments inoubliables dans l'histoire, par rapport à l'Asie."

[Bu32b, 04.11.2011]

the Arab world (...) since everything we use (clothes, drugs, electronics, shoes, home appliances...) are made by the Arabs, the Chines, the Indians, despite being often of mediocre quality. This is regrettable in my view: Africa should lean instead more towards Europe, because they've lived **unforgettable moments** in history, in comparison with Asia."

[Bu32b, 04.11.2011]

The tone of voice carried no resentment or condemning element in the opening sentence. Instead, the colonial exploitation mentioned is considered *unforgettable* and cherished, and is still preferred to the recent rise of Asian influence. This was quite surprising in the light of the negative judgement characterising the progressive rhetoric on the colonial domination (Fanon, 1961; Kapoor, 2008; Sachs, 1992; Said, 1978).

ETSA technical director, who was also lab manager, said:

Jean-Baptiste: "Parce que la Belgique devient le bailleur et l'autre devient... c'est comme un mendiant, quoi, parce qu'il est petit par rapport à lui, c'est lui qui cherche la dépendance."

[Bu31b, 16.11.2011]

Jean-Baptiste: "Because Belgium becomes the donor and the other becomes... It's like a beggar, you see, because he is small compared to him: it's him who seeks dependence."

[Bu31b, 16.11.2011]

The former head of the vocational education department at the Burundian Ministry of Education (DGEST), when asked about an image to represent the relationship between the Belgian Cooperation and Burundi answered:

Aristide: "Une main tendue." [en tendant la main pliée comme un mendiant]

[Bu01b, 28.11.2011]

Aristide: "A held out hand." [mimicking a beggar's gesture of a cupped hand]

[Bu01b, 28.11.2011]

Indeed the Burundian propensity openly to ask for favours, gifts or money displeases new expatriates who often discuss this attitude when chatting informally about their early impressions. Firmin's quotation in Section 6.3.2, vividly expressed the extent to which this mendicant attitude upset him, leading him to judge Burundians as cowards. Yet, the act of asking a benefactor for benefits is deeply engrained in Burundian culture, as indeed elsewhere in

Africa (Taiwo, 2014):

“Au Burundi on dit qu’il n’y a pire ingrat de celui qui pense n’avoir plus besoin de son bienfaiteur.”

[Extrait d’un discours officiel de remerciement écouté au Burundi]

“In Burundi we say that nobody is more ungrateful than the one who thinks he can do without his benefactor.”

[From a Burundian thanksgiving speech]

This quotation opened an official thanksgiving speech given by a parent representative during the inauguration of an extension building for their school by the NGO I was working with when I first arrived in Burundi. As a naïve and arrogant volunteer coming to Burundi from Veneto, one of the regions with the highest ratio of entrepreneurs per inhabitants in all of Europe, this sounded appalling: *“What?! But we came here to emancipate you guys! To stop being dependent!”*. Yet all the thanksgiving speeches I witnessed there ever since carried this very same message: *“Thank you for your help, we want more of it.”* When I asked a Burundian partner to clarify, he explained that in their culture, a Burundian visiting a friend would ask his wife what she would offer him to eat as a politeness ritual. The sheer fact of asking is a way to honour the host, considered as someone who is rich and generous enough to be expected to give. What to the European sensitivity tends to sound as belittlement and lack of dignity, in Burundian culture has no shame attached to it: on the contrary, it is a form of acknowledgement and gratitude. Nevertheless, there are Africans who fiercely condemned this attitude:

“We may continue and indeed we will be right to continue to use the power and influence which sovereignty confers, as well as the tactics and manoeuvres which international diplomacy legitimatises, to extract more and more alms from our benefactors. But the inherent evil remains—and it remains with us and with no one else: unless a beggar shakes off and irrevocably turns his back on, his begging habit, he will forever remain a beggar. For, the more he begs the more he develops the beggar characteristics of lack of initiative, courage, drive and self-reliance” (Awolowo, 1981, p. 30)

The issue is very complex and nuanced, yet my space is limited: the key point here is that the hybridisation of cultures embedded first in colonisation and subsequently in development cooperation has certainly blurred the line between these two interpretations and helped create the conditions for the tensions described in Chapter 6 to arise, as discussed further in the closing analytical summary (see Section 7.6.2).

7.3.4 Runner and pulled

Figure 7.12. A metaphoric image of the *Runner and pulled* analogy.



Source: Courtesy of Runners' World, retouched by author.

Nouveau directeur ETB: "Peut être la Belgique un homme qui est en train de courir ou de marcher et son bras qui tient quelqu'un d'autre, qui est derrière lui en train de courir derrière lui. C'est à dire quelqu'un qui tire l'autre [en riant]."

[Bu11b, 02.11.2011]

ETB's new principal: "Perhaps Belgium as a man who is running or walking and his arm hold someone else, who's behind him and running behind him. That is to say one is pulling the other [laughing]."

[Bu11b, 02.11.2011]

While this image of *Runner and pulled* was proposed by only one interviewee, when I cited it in informal conversations with other interviewees, many nodded in approval. It is an iconic representation of the idea of Development that was born with Truman's inaugural speech (1949) and is inscribed in the current terminology: *Developed* versus *Developing* countries, implicitly assuming a unilinear development path along which the latter are supposed to catch up with the first (Escobar, 1995; Kapoor, 2008; Sachs, 1992). I rarely heard this premise being questioned at any time in my five years in Burundi as an expatriate, including the time working on the AESTP project (see Section 2.2).

Both parties implicitly shared this narrative. Even during informal conversations with my Burundian interlocutors, when trust and confidentiality

were high and alcohol induced a certain uninhibitedness, the critical comparison was limited to other aspects of European culture. This pertained to the different ways to handle social life (friendship, marriage, death): it almost never tackled this overarching assumption about the nature of Development and rarely touched on the issue of Aid effectiveness. An exception to this trend was however put forward by a computer lab manager, who despite not having been involved in many cooperation projects, expressed his own version of a critique that recurs frequently in the Aid effectiveness debate (Booth, 2011; Easterly, 2007; Moyo, 2009):

Nouveau directeur ETB: "Je mettrais un blanc qui donne l'argent à un noir qui tire le petit peuple avec une corde."

[Bu11b, 02.11.2011]

New ETB principal: "I'd draw a white who gives money to a black who is pulling the hoi polloi with a rope."

[Bu11b, 02.11.2011]

This response is poignant in that it reframes the original question by moving beyond its simplistic contrast between the CTB and the Burundians and unfolds its multiple layers, pinpointing the lack of accountability of the Burundian political elite with respect to their voters (see Section 2.2.1).

7.3.5 Driver and car

Figure 7.13. A photographic representation of the *Driver and car* analogy.



Source: Courtesy of www.alvolante.it

Jean-Baptiste, directeur technique ETSA: “Je suis entraîné de penser un véhicule, un véhicule et un chauffeur, que le véhicule ne peut pas rouler sans chauffeur.”

PB: “Et c’est qui la coopération et c’est qui les Burundais dans ça?”

Jean-Baptiste: “Le chauffeur ça devient le coopérant qui donne, qui doit faire les manœuvres, toutes les actions pour que le véhicule marche sinon le véhicule reste: il est là mais il est presque nul au moment où il n’est pas fonctionnel quoi. Il ne peut pas rouler sans chauffeur. Et le chauffeur, il est là pour actionner la machine, mettre la machine en route.”

PB: “Et donc, le véhicule ça représente les burundais?”

Jean-Baptiste: “Voilà. Mais c’est un véhicule qui est là mais statique, qui ne peut pas se déplacer ou bouger sans... (...) Voilà ce que je peux dire, pour moi. On est là, on a tout, mais pour que les choses marchent il faut un appui quelque part pour pouvoir fonctionner.”

PB: “Et le carburant c’est quoi?”

Jean-Baptiste: [il rit fort] “Le carburant c’est tout [rires], il y a le chauffeur, il y a le carburant, il y a tout!” [il rit fort]

PB: “Le carburant, ce qui, qui le met? C’est le chauffeur ou c’est...?”

Jean-Baptiste: “C’est le bailleur! [il rit]. (...) C’est compliqué...” [Il rit]

PB: “Donc, l’argent c’est le carburant?”

Jean-Baptiste: “Voilà. C’est compliqué!” [il rit]

[Bu31b, 16.11.2011]

Jean-Baptiste, ETSA technical director: “I’m thinking of a vehicle, a vehicle and a driver, and the vehicle cannot run without a driver.”

PB: “And who is the cooperation and who is the Burundians in it?”

Jean-Baptiste: “The driver becomes the aid worker who gives, who has to do the manoeuvres, all the operations for the vehicle to run, otherwise the vehicle stays still: it is there, but it is almost nil as long as it is not working, you see. It can’t run without a driver. And the driver is there to operate the machine, to put the machine in action.”

PB: “So the vehicle represents the Burundians?”

Jean-Baptiste: “Indeed. Yet it is a vehicle that is there, yet static, which cannot move without... (...) That’s what I can say: we are here, we have all that is needed, but we need a push somewhere in order for it to work.”

PB: And what is the gasoline?

Jean-Baptiste: [he laughs aloud] The gasoline is everything [laughs]: there is the driver, there is the gasoline, there’s everything! [he laughs aloud]

PB: “And who’s putting the gasoline? Is it the driver or...”

Jean-Baptiste: “It is the donor! [he laughs] (...) It’s complicated...” [he laughs]

PB: “So, the money is the gasoline?”

Jean-Baptiste: “That’s right. It’s complicated!” [he laughs]

[Bu31b, 16.11.2011]

The *Driver and car* analogy is striking for three reasons:

1. The relationship is no longer between two persons, but between a person and a *thing*. This shift is negative with respect to the agency ascribed to the Burundian pole of the relationship, which is conceived as a mere tool at the mercy of the Belgian actor.
2. It concerns a third element, *money*, as the propeller of the relationship.

3. The interviewee was a former trainee who had previously held a high-ranking position in the Ministry of Education (*Directeur provincial* ≈ District superintendent). He had obtained his degree in France and early in the training had emerged as the social leader of the group. His view was thus seen as being authoritative.

As in all the previous analogies, the interviewee's tone expressed only light bitterness about the situation he had just described, promptly overridden by a benevolent acceptance: "*That's the way it is! You can't do much about it. It is wiser to play along.*" — could have been the verbalisation of his non-verbal and paralinguistic signs. Adding to this was the mild embarrassment of talking so openly about such a delicate matter, as signalled by the repeated laughter and by the expression "*C'est compliqué...*" which in that situation could be translated as "It's messed up..." pronounced with a tight lipped smile. Such attitudes are discussed more thoroughly in the conclusion of this chapter.

7.3.6 Handshake

Figure 7.14. Handshake between a black and a white man.



Source: courtesy of www.tafsons.com

The analogies illustrated so far were preceded in many instances by a more classic image: a white man and a black man shaking hands. This was more likely the case when interviewees were newly appointed people who replaced

the corresponding person who actually took part in the project. Therefore, I was a stranger to them and since I was accompanied by representatives of the ST Foundation as potential Aid providers (see Section 4.4.1), political correctness indicated by the handshake was the prudent approach. It was by mentioning some examples from other interviewees, their peers, that they felt comfortable enough to provide a less stereotypical image. This difference calls attention to the importance of trust and positionality: having been an insider within the project and having lived in Burundi for five years had a positive effect on my ability to gain trust. It can be noted, incidentally, that this was one of the real tangible benefits of undertaking my PhD on a part-time basis, enabling me to spend a very long time ‘in the field’ and build such trusting relationships.

7.3.7 Analytical summary

When comparing these analogies, two important similarities can be recognised. First, with the exception of the handshake analogy, the relationship between the Belgian cooperation and Burundians is always depicted as *asymmetrical*, with the Belgians having the upper hand. While this may not be surprising, the generalised acceptance by Burundians of this asymmetry as *natural* and *unchangeable* is noteworthy.

When asked for their recommendations on how to improve such a project, had it to be replicated, the Burundians still called upon the Belgians to amend what had not worked well. They suggested that, for example, the Belgians had to provide a fund for maintaining new technological infrastructure, or that more training was necessary to learn how to use it. Emile even suggested that the Belgians should have established regulations for managing the computer labs from the start, to prevent interpersonal frictions. This seemed to invoke an even more controlling and top-down approach. In most cases, criticism targeted the Belgian project leadership concerning its *operational choices* leaving the *asymmetry* of the relationship unquestioned. Indeed, five interviewees recommended that greater effort should be devoted to *asking* the beneficiaries *on the ground* — not in Bujumbura’s offices — about their needs:

PB: “Si tu étais le responsable d’un projet AESTP 2, qu’est-ce que tu ferais de différent afin d’éviter de répéter les mêmes erreurs du projet AESTP, vu ton expérience directe en ça?”

Zéphirin, gestionnaire ETS: “Moi, la première chose que je ferai, je vais approcher d’abord les

PB: “If you were in charge of a AESTP 2 project, what would you do differently to avoid the shortcomings of the AESTP project, given your direct experience in it?”

Zéphirin, ETS computer lab manager: “Me, the first thing I would do, I go approaching

bénéficiaires, je vais leur demander: «Qu'est-ce que vous avez besoin, qu'est-ce qu'on peut faire pour vous?» Et après, je vais analyser ce qu'ils ont proposé, et puis je vais voir aussi dans mon projet ce que j'ai prévu, puis je reviens dire: «Non, nous avons pris qu'on peut faire ça.» Et puis on leur montre nos propositions.»

[Bu82b, 14.11.2011]

the beneficiaries, I'll ask them «What do you need? What can we do for you?» And later I will analyse what they've suggested, and then I will see also in my project, what I have planned, and then I'll come back to tell: «No, we have decided that we can do this.» And then I show them our propositions.”

[Bu82b, 14.11.2011]

This passage exemplifies the extent to which the asymmetrical relationship had been internalised (Freire, 1970). In his response, Zéphirin ended up mimicking the very behaviour he had set out to provide an alternative to. Implicitly he assumed that (part in bold):

1. By the time he surveys the beneficiaries' needs, a project has seemingly already been planned;
2. His hypothetical answer to these expressed needs is still a “No: *this is how we'll do it*”.

There is no trace of irony or humour in the audio recording: the interviewee tried to answer my question seriously. His sliding into the problematic script was unintentional and intuitive.

The second similarity is to a certain extent a direct consequence of the first: Burundians often explain the shortcomings of the project by scorning their own culture with expressions such as:

Georges, enseignant ETS: “Au Burundi, il y a beaucoup de paresseux. (...) Souvent, au Burundi, les gens confondent une chose: être payé et travailler. (...) Moi je le dis en tant que burundais: les burundais aiment chipoter...”

[Bu85b, 18.11.2011]

Georges, ETS teacher: “In Burundi, there are a lot of lazy people. (...) Often in Burundi, people confuse one thing: being paid and working. (...) I say it as a Burundian: Burundians like to rummage around...”

[Bu85b, 18.11.2011]

The use of this kind of negative self-attribution widely accounted for disappointment about the project results, particularly in informal conversations. In order to deepen the understanding of this phenomenon, the next section examines the Belgian perspectives. Both perspectives are combined in the conclusion of this chapter.

7.4 The CTB-Burundians relationship: *developers'* perspectives

The perspectives illustrated in this section are by expatriates who worked with CTB, but who are not all Belgians: out of five interviewees Gilbert is Congolese and migrated to Belgium when he was 25. One is Italian and one is French. Nevertheless, they were all working (or had been working, in one case) with the CTB.

The analogies proposed by the interviewees were the following:

1. Two people handshaking/hugging.
2. Teacher and pupil.
3. A child and his tutor at the swimming pool.
4. “*Je t’aime, moi non plus*” — a locked-in marriage.

The following subsections discuss these in more detail.

7.4.1 Two people handshaking/hugging

Gilbert: “Deux groupes de personnes, deux peuples qui se donnent la main pour un monde meilleur. Et cela sans politique.”

[Be3b, 24.11.2011]

Gilbert: “Two groups of people, two peoples shaking hands for a better world. And that without politics.”

[Be3b, 24.11.2011]

Cédric: “Je mettrais l’amitié [hesitant] le travail commun, avec une main noir et une main blanche qui se serrent.”

[Be1c, 29.05.2014]

Cédric: “I’d put the friendship [hesitant]. The work in common, with a black hand and a white hand handshaking.”

[Be1c, 29.05.2014]

Maurizio: “Se dovessi farla rispetto agli ideali della CTB vedrei due persone che si danno la mano e un panier in mezzo — idealmente — un bianco e un nero. Poi invece nel caso ideale si abbracciano.”

[Be6b, 25.11.2011]

Maurizio: “Should I do it according to the CTB ideals, I’d see to persons who are shaking hands and a basket in between — ideally one white and one black. Yet in the ideal case, they hug each other.”

[Be6b, 25.11.2011]

These analogies are the most ‘politically correct’ of the series. When I spoke to these interviewees, stressing that I was looking for actual rather than idealistic representations of the relationship in point, they considered two other images: a car that could not run without gasoline (see Section 7.3.5) and the beggar (see

Section 7.3.3). While they were not surprised that their colleagues reported these less favourable analogies, they refused to do the same, and insisted on the idealised handshake/hug as their analogy for the official records.

The hug is particularly significant because it transcends the ritualistic handshake and refers to the fraternity between human beings, before any label or membership is applied. Yet, Maurizio was Cédric's homologue in a similar CTB project supporting lower vocational education (see Section 3.4). His feedback was perhaps related to the project he was leading, but certainly not the AESTP project in which the split between *them and us* was constantly emphasised.

7.4.2 Teacher and pupil

- | | |
|---|---|
| <p>[1] <i>[L'interviewee réfléchit en silence pendant 120 secondes avant de répondre à la question]</i></p> <p><i>Tony, mon homologue dans un autre projet de la CTB: "C'est comme la Mona Lisa: c'est très belle mais ça reste mystérieuse." (il rigole)</i></p> <p><i>PB: [il rigole aussi, complice] "Ça c'est à la limite cheesy! Un peu trop politically correct je dirais! Soyons un peu plus réalistes!" (Les deux rigolent ensemble)</i></p> <p>(...)</p> | <p>[The interviewee reflects in silence during 120 seconds before answering the question]</p> <p><u>Tony, my homologue in another CTB project:</u> "It's like the Mona Lisa: it is very beautiful, but it remains mysterious." ((he sniggers))</p> <p><u>PB:</u> [he joins the laugh complicitly] "This is almost cheesy! A little too politically correct, I'd say! Let's be a tad more realistic!" ((Both laugh together))</p> <p>(...)</p> |
| <p>[2] <i>[Encore 190 seconds de réflexion silencieuse avant de répondre]</i></p> <p><i>Tony: "Du point de vue Belge c'est surtout... comment dire... c'est le professeur de l'école qui est très sévère qui veut faire de bonnes choses, mais qui a des élèves qui ne comprennent pas toujours ce qu'il veut."</i></p> <p>(...)</p> | <p>[Another 190 seconds of silent reflection before answering]</p> <p><u>Tony:</u> "From the Belgian point of view it's mostly...how can I say... a strict teacher who is well-intentioned, yet he deals with pupils who do not always understand what he wants."</p> <p>(...)</p> |
| <p>[3] <i>Je sais un peu bien que du côté Burundais il voit la coopération comme... (...) de temps en temps ils ont l'idée qu'ils sont obligés à faire des choses qu'ils veulent pas, mais ils le font parce que comme ça ils vont avoir d'autres choses qu'ils veulent.</i></p> <p>(...)</p> | <p>I know fairly well that from the Burundian side they see the cooperation as... (...) from time to time they have the idea that they are forced to do things they don't want, but they do it so that they can have other things that they want.</p> <p>(...)</p> |

- | | | |
|-----|--|--|
| [4] | <i>On vient ici pour faire ce que on ne sait pas à réaliser en Belgique.</i> | We're coming her to do what we are not able to accomplish in Belgium." |
| | [Be5b, 25.11.2011] | [Be5b, 25.11.2011] |

This excerpt illustrates the uneasiness experienced by the interviewee when asked to devise a metaphor of the relationship between his organisation (the CTB) and its Burundian counterpart. In the video recording, the interviewee initially provided a politically correct answer [1] and then reflected for a few minutes, during which he looked at the camera and turned to the side, to avoid having it in his field of vision. In his subsequent answer he moved away from a first person account to a third person perspective, and described what he thought his colleagues tended to think [2]. He then inferred what the Burundians might think [3], eventually to suggest what might be seen as an acceptable metaphor [4]. This process is difficult to relay in written, since it is based on his paralinguistic and nonverbal cues.

Interestingly the Belgians' perceptions [2] match the *Teacher and pupil* analogy proposed by Burundians. Despite not being directly involved in the AESTP project, his response supported the existence of *collusion* between the two stakeholders of the relationship that went beyond the specific case analysed in this research. His hypothesis about the Burundians' perspectives [3] is also similar to the manoeuvring reactions described earlier (see Section 6.4.3) whereby project requirements are so rigid that Burundians are somehow forced to bend the rules to attain their goals. Indeed, as he explained [4], the bureaucratic standards enforced by Belgian authorities in Burundi (in the name of good governance — "*la Bonne Gouvernance*") are not matched by Belgians in Belgium.

Such paradoxes are even more apparent in the following two subsections.

7.4.3 The child at the swimming pool

Figure 7.15. . “Le gamin à la piscine”: the child at the swimming pool analogy.



Source: courtesy of Melinda Connor.

Firmin: “Le but c’est de maintenir le mort en dessus de l’eau.” [Il fait semblant de maintenir sa tête dans ses mains]

PB: “Ça veut dire quoi ça?”

Firmin: “Bein, le gamin à la piscine: tu maintiens sa tête hors de l’eau, tu l’empêches de sortir, tu l’empêche d’évoluer, tu l’empêche de couler parce que **s’il est mort tu n’as plus de boulot**, alors que peut-être tout seul il pourrait s’en sortir, mais ça, quand tout ça ici [il indique la portion de la net-map relative aux autorités scolaires Burundaises] est corrompu, on ne peut pas.”

[Be2na, 18.02.2010]

Firmin: “The goal is to keep the dead afloat.” [He mimics holding his head in his hands]

PB: “What do you mean by that?”

Firmin: “Well, the kid at the swimming pool: you keep his head out of the water, you don’t let him out, you don’t let him evolve, you don’t let him drown, because **if he dies you don’t have a job**, whereas perhaps by himself he could get himself out, but that, when everything here [he indicates the portion of the net-map regarding the Burundian school authorities] is corrupted, one cannot.”

[Be2na, 18.02.2010]

This metaphor emerged during the Net-Map exercise I conducted with Firmin during my first round of field research (February — March 2010) but is also relevant to the current discussion. This particular analogy echoes the *Father and son* or the *Teacher and pupil* relationships, but with an interesting twist: in this instance, the interest of the stronger party (“*le boulot*”) entered the picture and this was openly problematized (in bold). This represented a *co-dependency* between the two parties. According to him, the real motivation behind the mainstream, politically correct declarations I had heard was

- a. for school principals to have their schools grow in pupil population;
- b. for teachers to found their own private schools.

This would enable both to increase their income, with little concern about the constitutional educational aims of their institutions (“*tout est corrompu*”).

This narrative is low-spirited and could be seen as politically incorrect: it could easily appear as the cynical rant of a frustrated Aid worker with a colonialist attitude. Yet, African author Sikounmo (1992, p. 8) condemned this kind of misbehaviour by school authorities in Africa with even greater emphasis:

“One immediately sees the irreducible defects of a school system imbibed with corruption and excess, designed to oppress from the outside and divide the social body in a crowd of deprived servant to a handful of haughty repletes, emptied of all noble ambition — for themselves and for their people.” [Translation mine]³⁴

Thus, while it would be unfeasible to generalise such accounts, they cannot be easily dismissed. Instead, they provide a broader understanding of the complexity of the context; one that is not apparent in official documents or in the broader literature. The next subsection presents more evidence to support this point.

³⁴ “On voit tout de suite les irréductibles déféctuosités d’un système scolaire imbibé de corruption et de surcroît, conçu pour opprimer de l’extérieur et diviser le corps sociale en une foule de démunis au service réségné d’une poignée de repus hautains, vidés de toute ambition noble — pour eux-mêmes et pour leur peuple.”

7.4.4 A locked-in marriage

Figure 7.16. "*Je t'aime... Moi non plus*" – "I love you. Neither do I". A figurative representation of the *Locked-in marriage* analogy.



Source: Courtesy of www.wisdomproduct.com.

Emmanuel: "«*Je t'aime. Moi non plus*» [il rigole](...) *En fait c'est cela, une relation forcée, non consentie. Mais que tout le monde suppose harmonieuse.*"

[Be7nb, Net-Map, 12.11.2011]

Emmanuel: "«I love you. Neither do I» [he laughs] (...) In fact it is so: a forced relationship, **imposed**. But that everyone supposes to be harmonious."

[Be7nb, Net-Map, 12.11.2011]

Firmin: "«*Je t'aime. Moi non plus*»."

PB: "*Tu n'es pas le premier qui me le dit. Et qu'est-ce que tu donnerais comme image?*"

Firmin: "*Un couple, un homme et une femme, dos à dos... Mais un couple: obligés d'être ensemble mais se detestant.*"

[Be2b, 23.11.2011]

Firmin: "«I love you. Neither do I»."

PB: "You're not the first telling me that. And what would you give as an image?"

Firmin: "A couple: a man and a woman, back to back... But a couple: obliged to together, but detesting each other."

[Be2b, 23.11.2011]

"*Je t'aime... Moi non plus*" is a well known expression in the Francophone world, popularised by a very successful song by Serge Gainsburg (1969) which became

a French classic. The phrase is a play on words where the reply denies the first statement, while the context and the tone of the song imply “*Moi aussi*” (“So do I”) to make it linguistically coherent. In French, such a paradoxical saying has come to represent a hypocritical relationship, in which there is a striking contradiction between appearance and reality. Emmanuel was a Frenchman, who had lived and worked in Development in Burundi for 28 years, and was married to a Burundian. He had worked for CTB until 2010 in a position similar to Cédric’s as co-manager of a multi-million euro bilateral project. The second was Firmin. It is noteworthy that neither man hesitated in answering my question: “*Je t’aime... Moi non plus*” was an instantaneous answer — in stark contrast with all other interviewees. Moreover, throughout our interaction, they both appeared happy to have a chance to speak ‘the(ir) naked truth’ in an uncommon researcher-interviewee setting.

This analogy is important as it portrays a relationship that is not merely lopsided, with a stronger party (the Belgian cooperation agency) imposing itself on the weaker party (Burundians). Instead, it highlights the interlocking nature of the relationship in that *both* parties suffer the effects of *hypocrisy*. And yet neither seem to be willing or able to renegotiate the relationship itself in order to rebuild mutual trust (Tomlinson & Mayer, 2009). In couple psychology this has been termed *negative contracts* (Stone & Stone, 1989): partners make compromises to preserve an apparent harmony because they are too scared of the consequences of being honest, since that might lead to conflict.

The erosion of mutual trust is such that both parties have no hope that the relationship can be changed and improved. They prefer to endure the discomfort of mistrust rather than to address the issue directly and explicitly, by *meta-communicating* — that is, by communicating about their relationship (Bateson, 1972; Schulz von Thun, 1997; Watzlawick *et al.*, 1967):

Emmanuel: “Je ne crois pas beaucoup aux négociations. Tu sais, c’est comme un vieux couple: tu sais ce que tu peux demander à l’autre, ce que tu peux attendre de l’autre. C’est un peu la même chose. C’est une forme d’autocensure, mais aussi de ‘gentlemen agreement’. Un mi-terme entre les deux. C’est toujours consensuel.”

[Be7nb, Net-Map, 12.11.2011]

Emmanuel: “I don’t believe much in negotiations. You see, it’s like an old couple: you know what you can ask the other, what you can expect from the other. It’s a bit the same thing. It is a form of self-censure, but a ‘gentlemen agreement’ as well. A mid-term between the two. It is always consensual.”

[Be7nb, Net-Map, 12.11.2011]

It may seem contradictory that this same interviewee described the relationship

in point as both imposed and consensual (see bold in excerpts above), but it is not. As Simmel (1904) had already pointed out, “we are enemies at the level of behaviours, but we cooperate at the one of relational configuration” (Sclavi, 2003, p. 228). Thus, the two parties seem to perpetuate their interactional dance, as they are both sceptical that a different dance can be performed.

7.4.5 Analytical summary

Three significant similarities are evident in the Burundian and Belgian use of metaphors. First, the *Teacher-pupil* analogy recurs and is proposed by the interviewee Be6 as the most popular one among his colleagues. Both Tony and Fabrice describe it as unsatisfactory, and both ascribe the cause of such dissatisfaction to the other party, who “does not understand” (Tony) or who “does not explain duly” (Fabrice). Thus while they are both dispositional attributions, the first is *deficient* and the second is *bad faith*.

Second, *developers* were more open to provide a critical reading of the relationship: there is a certain frustration in the tone of their voice, as the situation is felt to be hopelessly unchangeable, ‘despite their best efforts’. This is different from the Burundian case where such frustration was less palpable. This may be due to my differing positionality over time in the eyes of the different groups of interlocutors: being a European myself, I nevertheless enjoyed a degree of confidentiality and empathy that was higher than with Burundian interviewees, especially towards the end of my time in the country. Most likely, this allowed the less politically correct explanations to surface, such as the *child at the swimming pool* and the *locked-in marriage*, as well as the last comments [4] of the *teacher and pupil* excerpt, in which the paradoxical side of the relationship was exposed.

Third, the *handshake and hugging* analogies, so iconic in the mass-media, were put forward by the interviewees who wanted to ensure that this analogy would be recorded under their names. However, from the rest of their interview, it was clear that the situation was not as rosy as this image conveys. There was a deliberate effort to stay within official rhetoric, thus reinforcing its message.

In the next section, the relationships between different stakeholders are analysed further by examining their net-maps.

7.5 Net-maps analysis

As illustrated in Section 4.5.2, Net-Map is a social network analysis technique aimed at visualising the relationships between stakeholders, by making their implicit knowledge explicit and attaining an understanding of the relative influence every actor has on the declared goal of their venture — the success of the computer labs. Its heuristic value is twofold:

1. Net-Map produces a physical artefact, the net-map³⁵ that depicts such understanding.
2. Net-Map is a narrative generator, as the mere act of drawing activates a different way of reasoning, more visual than verbal (Dodman, 2003; Harper, 2002; Vannini *et al.*, 2013), and defies conventional, words-only narratives.

In this research Net-Map proved more effective as a narrative generator than as an artefact to portray reality. I had hoped during the early part of my research/practice that the latter would be a valuable source of evidence for my analysis, but this proved to be less successful than I had expected (see Section 0). Nevertheless, a comparative analysis of the different net-maps did highlight some recurrent similarities, which are discussed below, before turning to the narratives that they prompted.

7.5.1 Net-maps as maps

Stakeholders and their relative influence

All Net-Map sessions started by asking the same key question: “*Who influences the success of the computer labs?*”. Not surprisingly, net-mappers differed in the pool of stakeholders they identified as salient from their position in the social setting. Thus bureaucrats mentioned actors in the highest ranks of the governmental hierarchy, such as the Belgian embassy or the Burundian Ministry of Foreign Affairs, while computer lab managers did not, and vice versa. The latter mentioned the local community neighbouring the school, while the first did not. Table 7.1 lists all the actors that were mentioned and the number of appearances.

³⁵ A reminder (see Chapter 4): I use net-map lower case for the resulting artefact and Net-Map for the method.

Table 7.1. List of stakeholders mentioned by net-mappers and their cumulative presence across net-maps. Acronyms are multiple as they include the original on the map and the digitised version.

Actor	Names on net-maps	Presences
School Administrations	<i>Écoles/Schools/Princ</i>	14
Computer Lab Managers	<i>CLm/Gestionnaires</i>	13
AESTP Project	<i>AESTP/UGP/Delco/DI</i>	13
APEFE	<i>APEFE</i>	13
Bureau for Vocational Education Studies	<i>CP/BEET</i>	13
Pupils	<i>Elèves/pupils</i>	12
Ministry of Education	<i>MinEduc/MEDU</i>	12
Neighbouring Population	<i>Entourage/NeiPop</i>	10
District Superintendent	<i>DPE</i>	9
Teachers	<i>Prof/Enseignants/Tchrs</i>	9
General Directorate for Vocational Secondary Education and Training	<i>DGEST/DGST</i>	7
Burundian Government	<i>Gouvernement/GovtBU</i>	6
Belgian Technical Cooperation	<i>CTB/BTC</i>	4
General Directorate for Pedagogical Offices	<i>DGBP</i>	4
Municipality	<i>Commune/AdmCom</i>	4
Ministry of Foreign Affairs	<i>MinRelExt</i>	3
Parents	<i>Parents</i>	3
Technical Director	<i>DirTech</i>	2
Belgian Embassy	<i>AmBe</i>	2
Trainer/Paolo	<i>Formateur/Paolo/APEFE AT</i>	2
Local Businesses	<i>Entreprises</i>	2
NGOs	<i>ONG</i>	2
School Administrative Staff	<i>Personnel Appui École</i>	2
Bilateral Supervisory Committee	<i>SMCL</i>	1
Pupils tutors	<i>Encadreurs</i>	1
Dormitory Director	<i>DirInt</i>	1
Vice-principal	<i>Prefet</i>	1
Firmin (APEFE Technical Assistant)	<i>Firmin</i>	1
National Teachers College	<i>ENS</i>	1
Belgian Government	<i>GovtBE</i>	1
Gilbert(APEFE Technical Assistant)	<i>Gilbert</i>	1
Province Administration	<i>Gouverneur/Province</i>	1
Belgian Cooperation for Development Unit	<i>DGCD</i>	1
APEFE Headquarters	<i>APEFE Be</i>	1
Belgian Technical Cooperation HQ	<i>CTB Be</i>	1

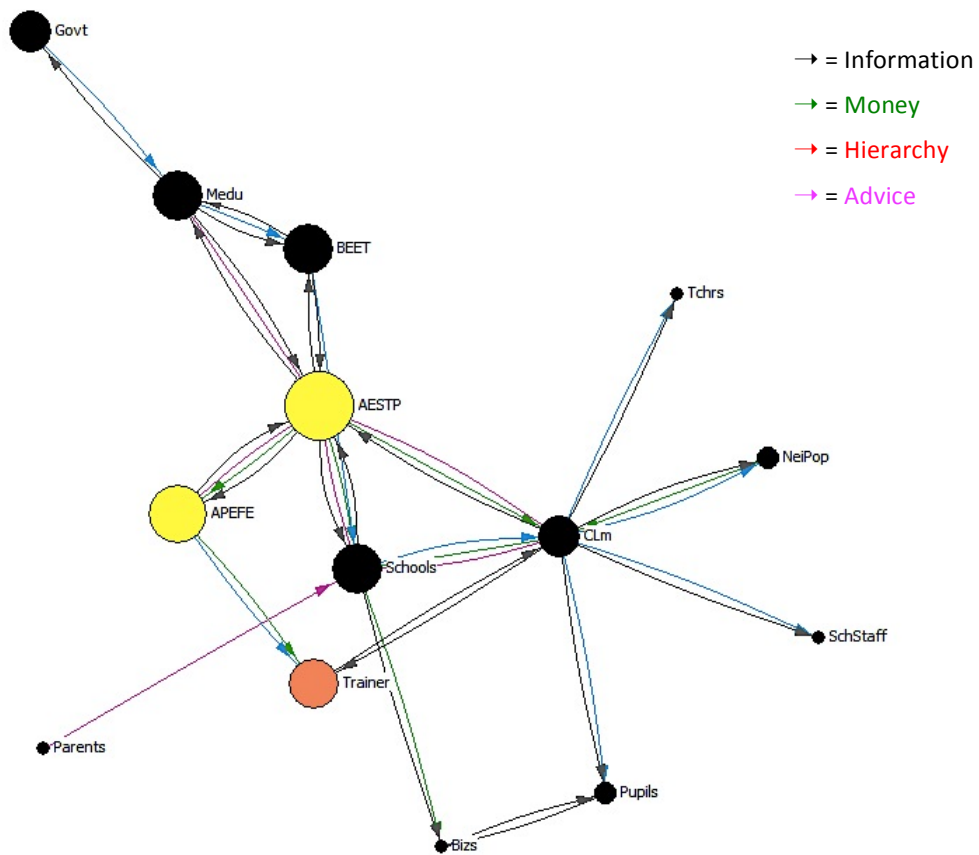
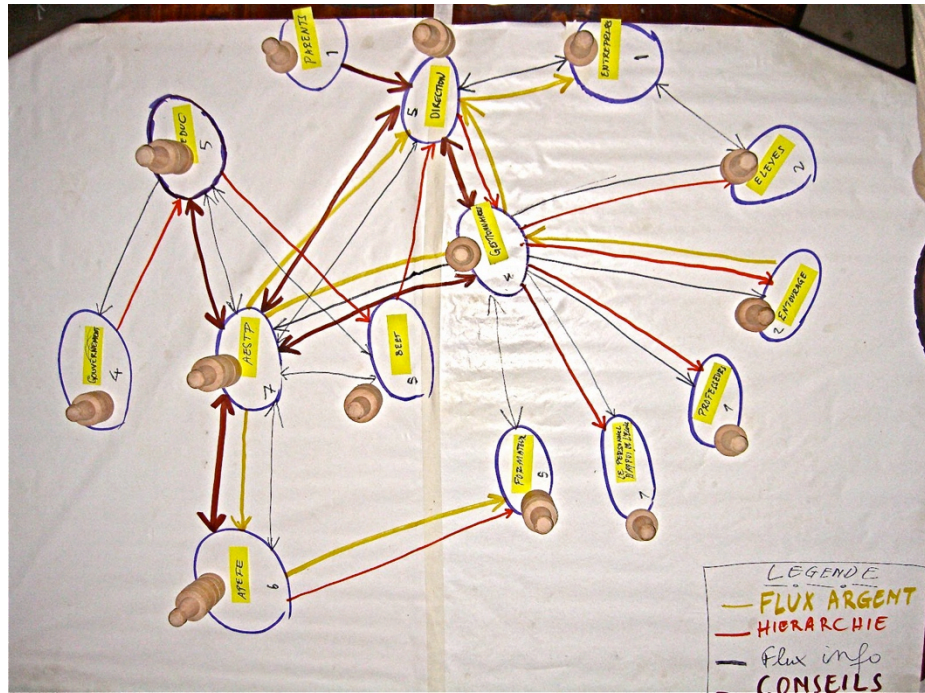
Source: Author.

This ranking reflects the organisational position of the specific people who I asked and accepted to do a Net-Map and therefore should not be taken as the consolidated map of all stakeholders. During the first round of fieldwork,

before the computer labs were installed, I split the trainees into three groups, and then asked them to draw a net-map (see Figure 7.17, Figure 7.18 and Figure 7.19). Most relevantly, two of the three groups of trainees attributed the highest influence (largest circle in the digitised version of the net-map) to the AESTP project and the APEFE, while one attributed it to the schools.

In hindsight, the relevance of the net-maps below was more in the *process* leading to them than in the final picture of the context they portray (see Section 0 for details). The discussion among net-mappers allowed for an informal leader to emerge in each group. In groups A and B, the leaders were working *in* the schools, while the most charismatic person in group C was an experienced pedagogical advisor working at a ministerial office (BEET), who was therefore more used to systemic thinking with a long term perspective (see Section 7.3.2). His group's net-map attributed a higher influence to Burundian stakeholders and in particular to school administrations, thus expressing an internal locus of control — "*Success depends on us*". The other two groups manifested an external locus of control by attributing the responsibility of success mostly to *developers*, as the providers of equipment, money (AESTP), and training (APEFE). This latter pattern was maintained in the second round of fieldwork, which occurred between February and March 2010, seven months after the computer labs were installed and only three months before the AESTP project was expected to conclude — it was then extended until the end of November 2010 (See Figure 7.20 and Figure 7.21).

Figure 7.17. Self-facilitated net-maps: original artefact (above) and digitised version using Visualizer 2.0 software: **Group A**.

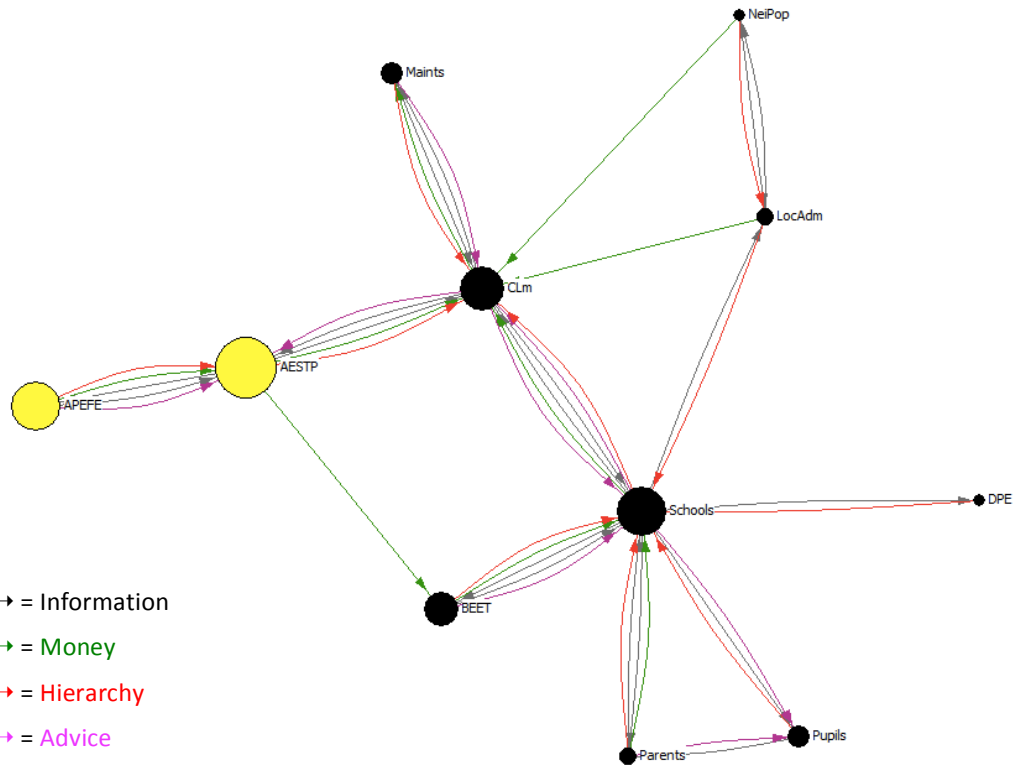
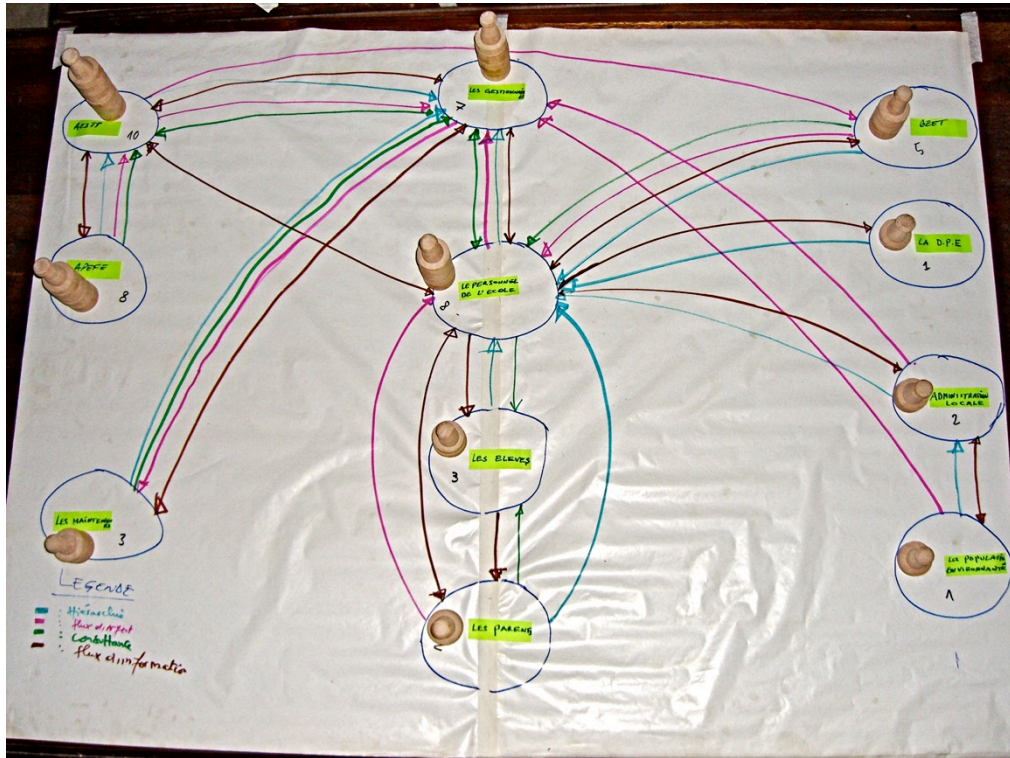


Key:
 Belgians in yellow. Burundians in black. Trainer, Italian, in orange.
Stakeholders key:
 Govt: Government
 Medu: Ministry of Education
 BEET: Bureau for Vocational Education Studies

CLm: Computer Lab managers
 NeiPop: Neighbouring population
 DPE: Superintendance
 Maints: Maintainers
 SchStaff: School personnel
The size of the bubble represents the influence attributed to each actor for the success of the project.

Source: Author.

Figure 7.18. Self-facilitated net-maps: original artefact (above) and digitised version using Visualizer 2.0 software: **Group B**. Source: Author.

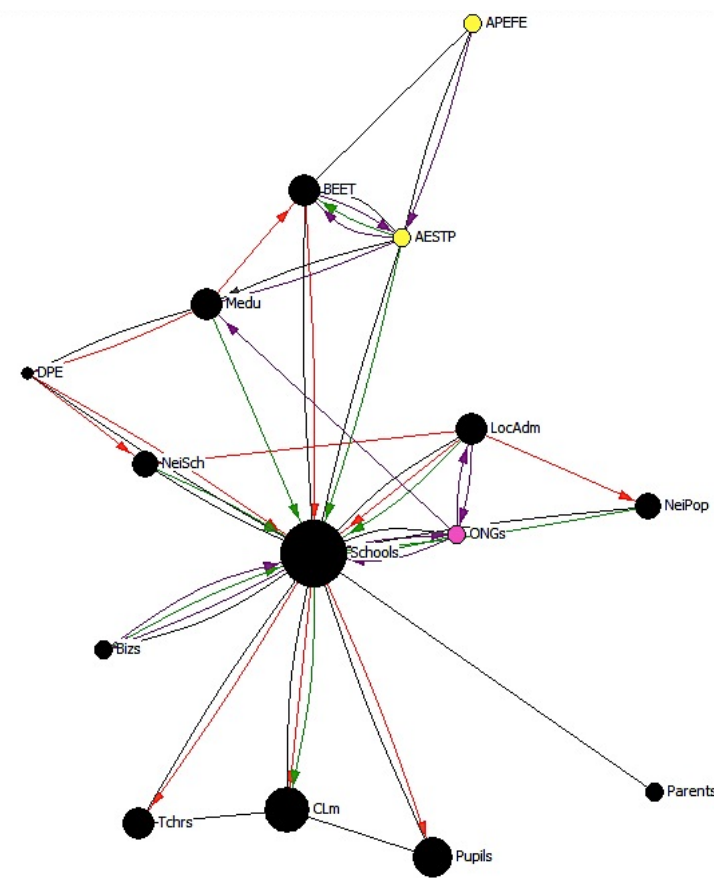
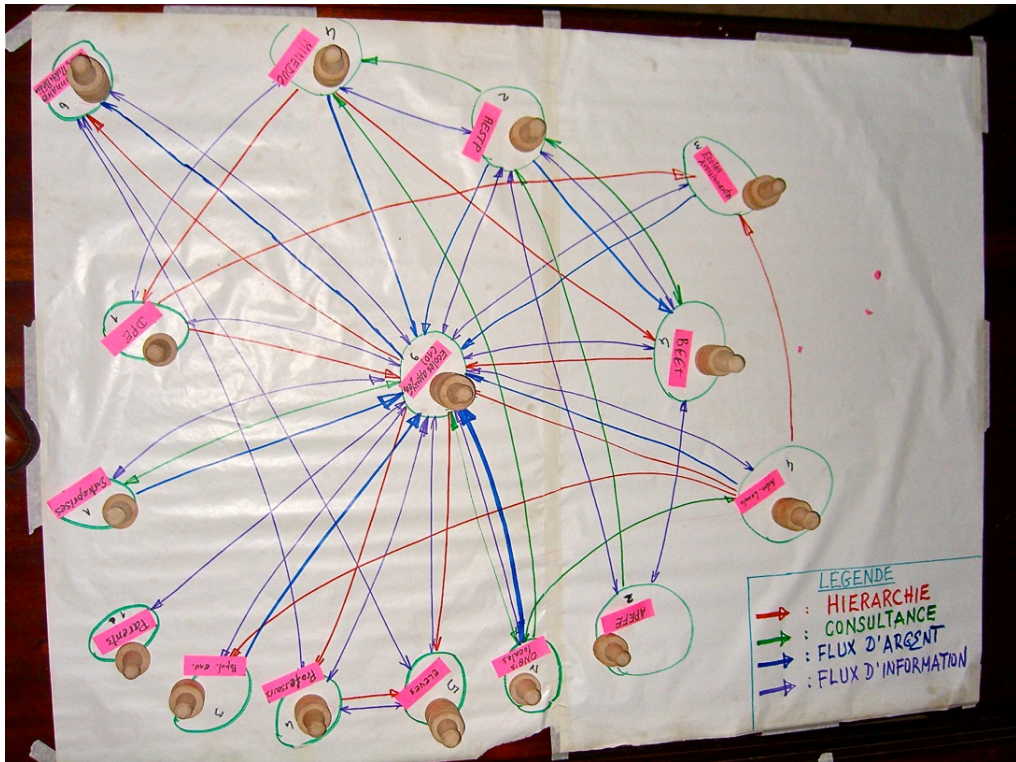


Key:
 Belgians in yellow. Burundians in black. Trainer, Italian, in orange.
Stakeholders key:
 Govt: Government
 Medu: Ministry of Education
 BEET: Bureau for Vocational Education Studies

CLm: Computer Lab managers
 NeiPop: Neighbouring population
 Tchrs: Teachers
 Bizs: Businesses
 LocAdm: Local Administration
The size of the bubble represents the influence attributed to each actor for the success of the project.

Source: Author.

Figure 7.19. Self-facilitated net-maps: original artefact (above) and digitised version using Visualizer 2.0 software: **Group C**.



- = Information
- = Money
- = Hierarchy
- = Advice

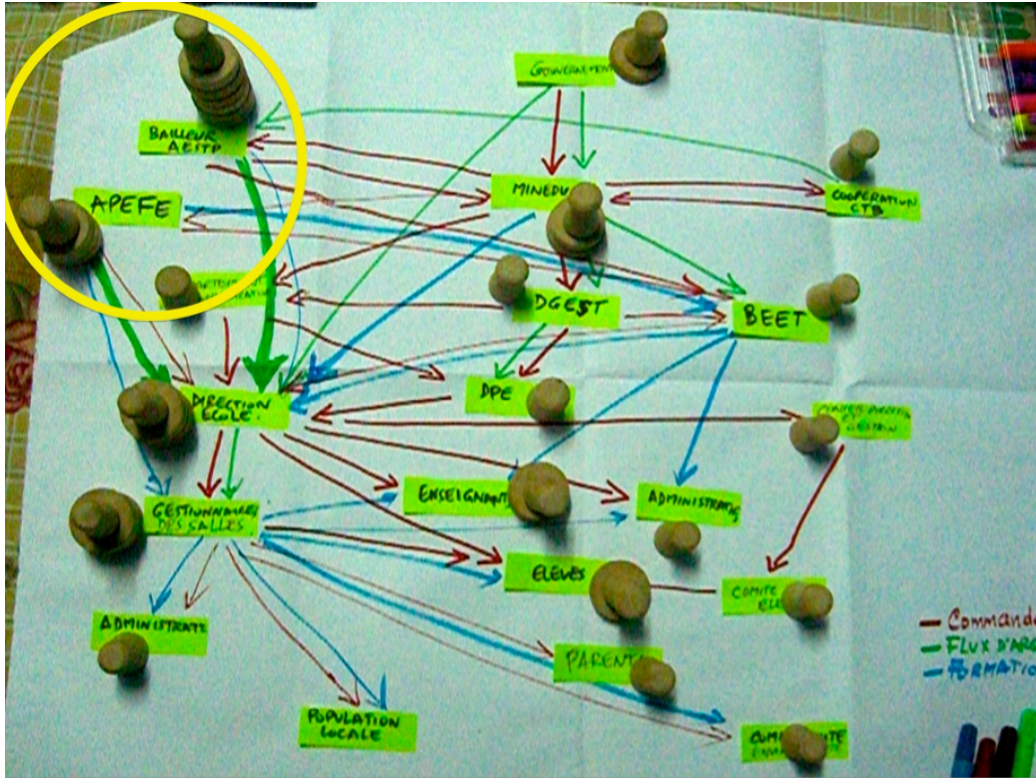
Key
 Belgians in yellow. Burundians in black. NGOs both local and international in fucsia.

Stakeholders key:
 Govt: Government
 Medu: Ministry of Education
 BEET: Bureau for Vocational Education Studies
 CLm: Computer Lab managers
 NeiPop: Neighbouring population
 Tchrs: Tteachers
 Bizs: Businesses
 LocAdm: Local Administration
 NeiSch: Neighbouring Schools
 DPE: Superintendant

The size of the bubble represents the influence attributed to each actor for the success of the project.

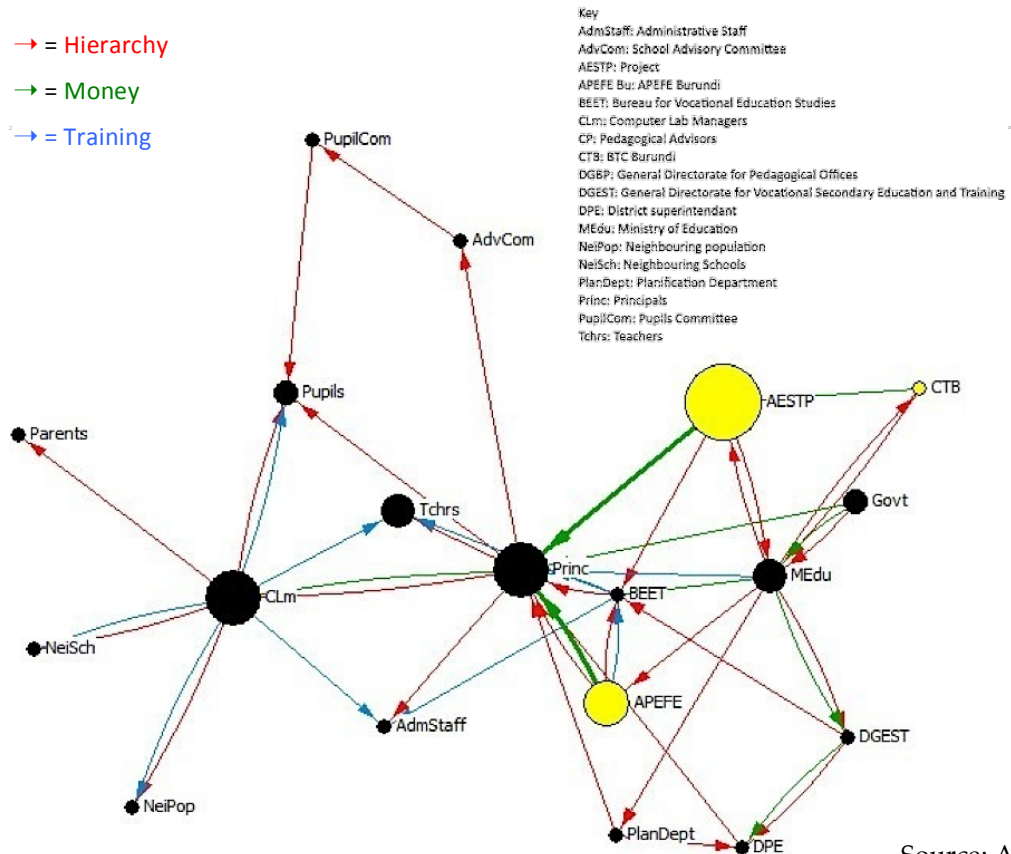
Source: Author.

Figure 7.20. Highlighted on the net-map the Belgian stakeholders, to whom the highest influence for the computer labs to be successful was attributed.



Source: Author (02.03.2010).

Figure 7.21. Digitised net-map representing the computer lab project stakeholders depicted above. The highest influence (largest bubble) is the AESTP.

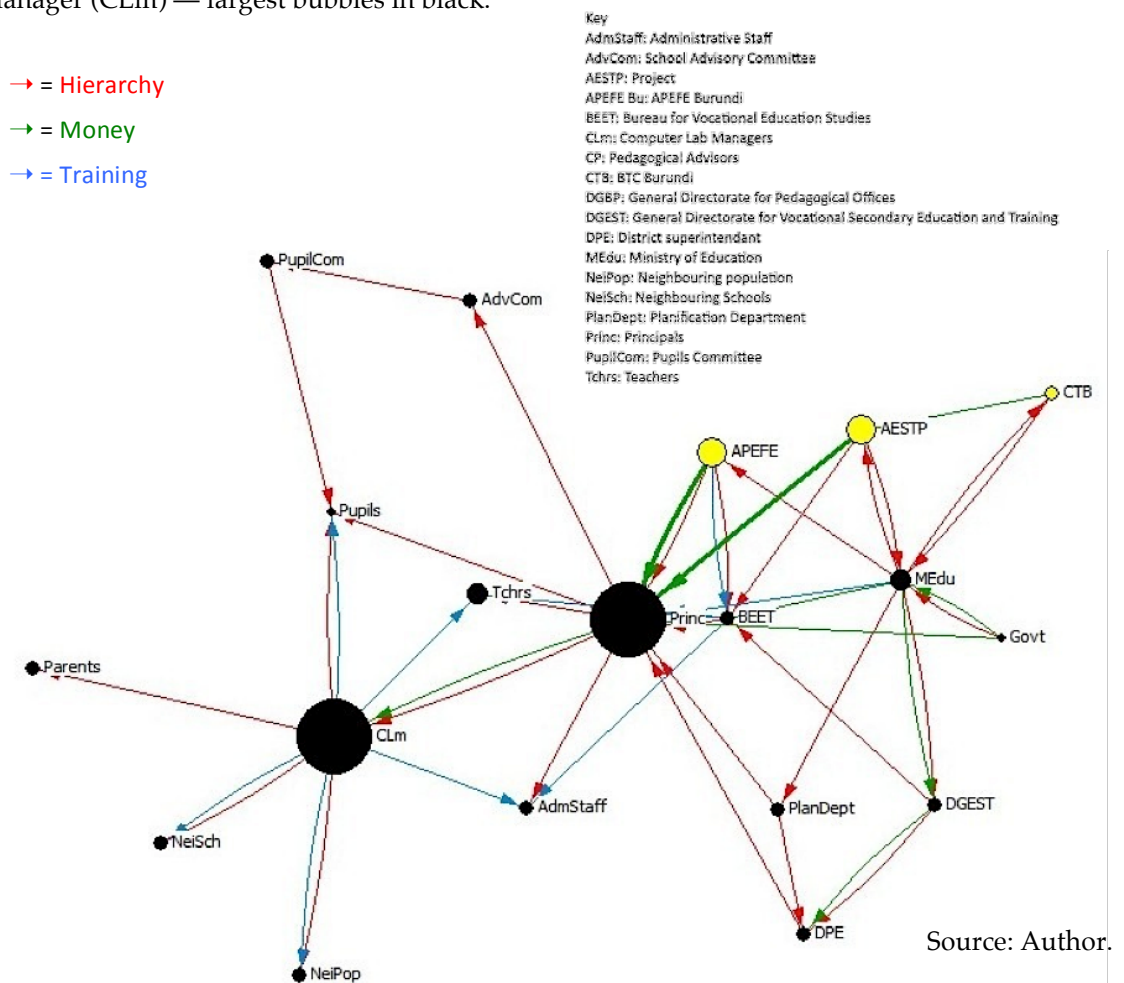


Source: Author.

Only when asked to project the situation after the departure of the Belgian cooperation agency and to redistribute the influence accordingly, did one participant readjust the net-map. He shifted the influence disks from the AESTP to the school principals (Princ) and to the lab manager (CLm), who then became the most influential actor (Figure 7.22). He nevertheless left both the AESTP and the APEFE on the map as the second most influential actors, hoping for an extension of the AESTP project. He lamented that the time allotted to learn how to manage the lab was insufficient and that a longer mentorship period was needed. This degree of attachment to the Belgian stewardship reinforced the asymmetrical relationship between the two parties illustrated earlier (see Sections 7.3).

The shift of influence towards the school principals and lab managers was restated in the net-maps drawn during the third round of fieldwork (Nov. 2011), when the Belgians were no longer supporting the schools, with the exception of some occasional interventions by the APEFE.

Figure 7.22. Redistribution of influence after the AESTP project end, as imagined by the net-mapper: shift of influence from the AESTP to the Schools (Princ) and to the computer lab manager (CLm) — largest bubbles in black.



Links

Whenever time permitted, four links were drawn in the net-maps:

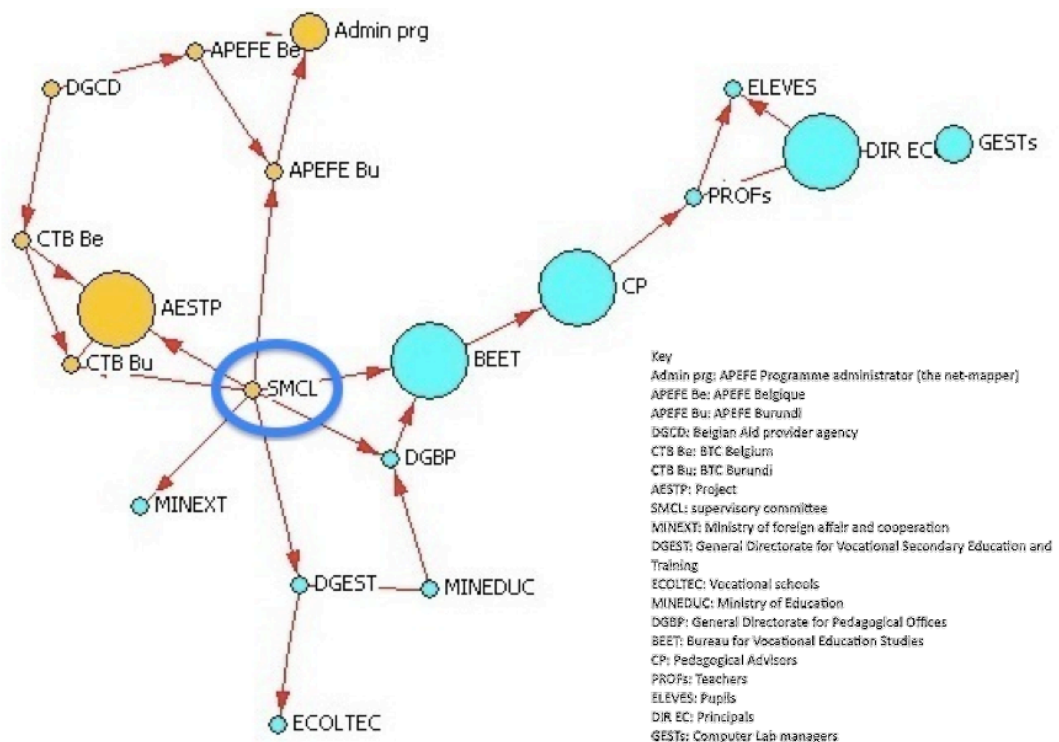
- Formal hierarchy (*Who gives orders to whom?*)
- Money flows (*Who pays whom?*)
- Training (*Who trains whom?*)
- Advice/Information (*Who gives advice/information to whom?*)

In two instances, only the first link was explored, in eight instances the first three, and in the remaining four instances, all four. In the case of a single link, this was due to limited time. The fourth link (d) was dropped after the first four net-maps, when I realised that it was too ambiguous and resulted in a “spaghetti bowl” (Schiffer, personal communication, 10.03.2010): a cluttered net-map impaired sense-making both by the net-mapper and myself.

With respect to hierarchy, net-maps revealed how the Belgian and Burundian chains of command were almost completely separate, bridged only by the local supervisory committee (Structure Mixte de Concertation Locale — SMCL — Figure 7.23).

Figure 7.23. Formal hierarchies.

In yellow Belgian actors. In turquoise Burundian actors. Red arrows represent the chains of command (09.02.2010). The two chain of command, Belgian and Burundian, are almost completely separated.



Source: Author.

The net-map in Figure 76 shows the centrality of the supervisory committee (SMCL) circled in blue with the highest number of outbound arrows, yet, its influence was limited (small bubble): it only met once every six months to monitor progress. Most influential were instead the AESTP project management and the BEET, which were the two implementers of day-to-day operations. It must be noted that APEFE's country manager, who had not closely followed the project, drew this net-map. She was very concerned to represent a reality 'as it should be'. Accordingly, no party had the right to give orders to the other, consultation instead ensured an equal decision making process.

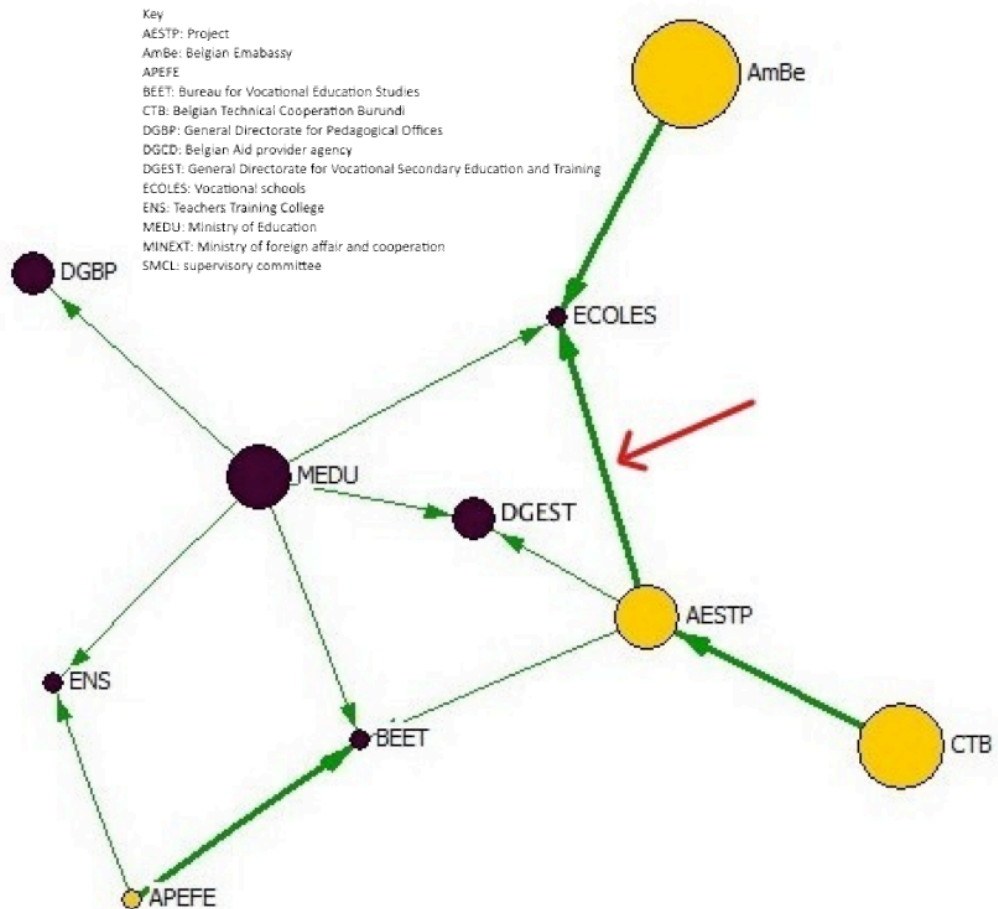
APEFE's mission was to support Burundians by developing capacity in managing vocational education. In contrast with this intent, since the early days of the AESTP Project, a conflicting relationship had developed between its leader, and both directors of the Ministry of Education departments in charge of vocational training — DGEST and DGBP. This was to the extent that their communication had virtually ceased. Thus in order to attain the expected project results, Cédric bypassed this layer of Burundian bureaucracy and dealt directly with school principals to renovate their infrastructure, equip their labs and organise training. This move put principals in a very problematic position. In order to benefit from a conspicuous flow of resources, they were sometimes forced to betray their national institutional hierarchy, which is one of the structural reasons why they were later hostile towards Cédric.

Money flows

This bypassing of local bureaucracy was particularly evident when examining money flows (Figure 7.24). In his net-map, Firmin differentiated clearly between two types of movement: the thinner lines represent the default money flows within the Burundian educational system (salaries and departmental budgets), while the thicker lines represent the more conspicuous financial flows brought about by the Belgian actors (see also Figure 7.20).

Figure 7.24. The flows of money according to Firmin.

Thicker arrows represent conspicuous amounts; thinner arrows represent small amounts.



Source: Author (18.02.2010).

Besides the Belgian embassy (AmBe) initiative to offer grants to associations of graduating pupils, the most problematic link is the direct flow of resources from the AESTP to the schools. This bypassed the Directorate for Vocational Education (DGEST), which was the institutional source of material support (textbooks, equipment, school trips to businesses, and stages) to the schools before the arrival of the AESTP project. Yet, the DGEST's lack of resources was such that the schools actually received almost nothing. According to Firmin, a small contribution from the AESTP to the DGEST (thin green arrow) was a means for Cédric to sedate his interpersonal conflict with its director: *"...pour qu'il ferme sa gueule"* - *"...to buy his silence"* (Be2na, 18.02.2010), and permitted the AESTP to intervene in the schools that were bypassing his office. Such arrangements are in stark contrast with the first two principles of the Paris Declaration (DAC, 2005): ownership and alignment (see Section 2.2.1).

Training

The analysis of the training links illustrated through the net-maps confirmed that no training was ever organised in which Burundians were the trainers and Belgians the trainees. More than anything else this reveals that beyond the official rhetoric about equality in bilateral cooperation, learning about Burundian culture and context was not something that required formal training, possibly by local experts, but rather something to be ‘learned by doing’. This is coherent with the pervasiveness of the *Teacher and pupil* analogy illustrated above (see Sections 7.3.2 and 7.4.2): the collusion between Belgians and Burundians in framing their relationship in these terms made a reversal of the roles almost unthinkable. It would have meant admitting that the *developing* had something valuable to teach the *developed*: an unbearable threat to the asymmetrical architecture of the bilateral cooperation inscribed in the AESTP project.

7.5.2 Net-maps in summary

In summary, the net-maps revealed three main issues:

1. A clear disconnect between the Belgian and Burundian formal chains of command. Two separate hierarchies hindered joint teamwork, as members of both groups (i.e. principals) would not easily discern to which one they had to comply.
2. The unilateral direction of training, with Belgian Aid workers training Burundians, confirms the paternalistic framing of their relationship, as was discussed in Section 6.3.1.
3. A contradiction between the separation of these formal hierarchies and the actual flows or resources beneath them, which de facto privileged the Belgian hierarchy over the Burundian one. As ETP technical director said in 2011:

Adélar: “C’est les Belges qui ont plus de pouvoir, puisqu’ils ont l’argent.”

[Bu20nb, Net-Map, 03.11.11]

Adélar: “It’s the Belgians who have more power, because they have the money.”

[Bu20nb, Net-Map, 03.11.11]

7.6 Cultural matrices

After having explored the situational route in its historical and relational dimensions, I now turn to cultural differences in an attempt to address the puzzlement inherent to critical incidents and the restoring of coherence. The underlying assumption is that a better understanding of the deep-seated premises of Burundian culture can greatly help a foreigner, such as an Aid worker, to handle such critical incidents in a less dysfunctional way than the one illustrated in the previous chapter. These premises are archetypical ideas that mould the Burundian *worldview*, which is often distinct from the European equivalent. I termed these cultural *matrices* to stress their primal generative character as *meta-patterns* to organise human experience.

As illustrated in Section 2.5.1, rather than adopting a multidimensional view of culture (Hall, 1989; Hofstede, 1980, 2011; Triandis, 1994), I espoused a more interpretivist approach, rooted in my ethnographic observations. Drawing on Van Stam (2012), I focused on two cultural matrices, namely *Ubuntu* and *Relatio*. These are illustrated in the following sections, while their relevance with respect to ICTs is illustrated in the ensuing chapter. Many other aspects of Burundian culture were not addressed, such as the different relation with time and planning (Hall, 1989), the prevalence of religiousness (Sterling, 2012), and the prominence of orality over written communication (Ong, 2012). Though relevant, these themes emerged too late in the research process to allow for a sufficient examination.

7.6.1 Ubuntu

According to African scholars (Kamwangamalu, 2004; Khoza, 2006; Mthembu, 1996; Murithi, 2007), *Ubuntu* is a core Pan-African concept with a broad meaning:

“Ubuntu is the key to all African values and involves humanness, a good disposition towards others, and a moral nature. It describes the significance of group solidarity and interdependence in African culture. It places great value on dignity, respect, conformity and reconciliation in the midst of conflict and hardship.” (Mthembu, 1996, p. 216).

Kamwangamalu (2004) terms it as a ‘value system which governs societies across the African continent’, stressing *interdependence* and *communalism*. Nelson Mandela and Rev. Desmond Tutu leveraged this ideal to try to surpass the hatred generated by apartheid and unify South Africans. Khoza (2006) seconded them asserting that *Ubuntu* is the recognition and honouring of

humanness, for Africans to move beyond ethnic fragmentation and tribalism.

In Burundi, two proverbs in Kirundi translate these two concepts:

“*Umuntu agirwa n’uyundi*” — One imperatively needs his/her kin to fulfil himself/herself.

“*Ubuntu mu bantu*” — I am because we are.

Thus, membership in the community and group cohesion is held in higher regard than individual decision-making and independence (Krauss, 2013; Van Stam, 2012a). Within a multidimensional framing of culture (Hofstede, 1980; Triandis, 1994), Ubuntu can encompass the notion of *collectivism*, although it does not overlap with it. This term surfaced often during my conversations with trainees, given that we were installing a version of Linux derived from the more popular Ubuntu distribution (www.ubuntu.com — accessed 10.06.2014) in the labs. This led to informal conversations about the original meaning of the word. When asked directly about the definition of Ubuntu, one of my Burundian informants detailed its meaning as “*dignity, gratuity and grace — in the sense of a compassionate undeserved favour.*” (René-Michel, personal communication, 12.11.2013). This great importance attached to interpersonal and intergroup relationships translates into mutual help and hospitality, recognising the humanness inherent in every person. Indeed, a European visiting the country typically remarks how Burundians never meet someone else’s eyes without visibly acknowledging his or her presence, even between strangers and even at great distances.

Burundians would often resort to the term *Ubuntu* to denote their distinctive approach to social relationships as opposed to the European, characterised, in their view, by a higher degree of selfishness. However, this conventional and positive connotation of the term contrasted with much of my experience in Burundi. First, it would be gratuitous to assume that this emphasis on solidarity translates into a rather flat, egalitarian society. On the contrary: the respect of *hierarchy* appears to be a defining element of Burundian culture. Traditionally, Burundian society was a multi-layered, clannish monarchy, with chiefs at all layers: chief of the family, chief of the zone, chief of the hill, chief of the province, up to the king—*Mwami* (Bain, 2001). Belonging to one clan implies not belonging to all others, who can easily become adversaries, as the recent civil war has proved (see Section 7.2).

Second, a consequence of the prominence of *belonging* is a deeply engrained

tendency to draw clear-cut distinctions between ingroups and outgroups. Hence, the kind of solidarity claimed by *Ubuntu* appeared to be applicable only when the Other was considered a member of the ingroup, according to some salient criterion (i.e. ethnic, political, religious, territorial). Thus, the great importance attributed to both hierarchy and belonging seems to characterise a society in which:

1. *“The chief is right because he is the chief.”*
2. *“For us to win, they have to lose.”*

These statements were ‘distilled’ by consolidating multiple interviewees’ declarations. I address these two points individually below.

“The chief is right because he is the chief.”

This statement implies that there is no delegation of power from a member to the chief, as in representative democracy (Booth, 2011, p. 3). Rather, whenever a member disagrees with his chief, either he changes his mind to align himself with him, or he conspires to overthrow him and take his place, as the numerous coups presented in Figure 7.6 demonstrate. Leaving the ingroup is not a likely option, given the strong attachment to its identity. As in the case of the quasi boycott described in Section 6.4.4, group cohesiveness is hailed as primarily important, sometimes leading to conformism and *groupthink* (Janis, 1972, 1982; Rose, 2011; Whyte, 1952). Due to this deeply seated reverence to authority and conformism, *authoritarianism* seems to be a defining feature of Burundian culture. These ruling principles are by no means unknown or unpractised in Europe, and have been embraced and enacted for centuries before the French Revolution (1789). Nevertheless, as a European expatriate, it took me a long time to realise to what extent this shaped the social behaviour of Burundians:

- | | | |
|-----|--|---|
| [1] | <i>PB: “(...) Moi je sais que ici l'enfant, il est vu de mauvaise œil s'il pose trop de questions au grand, est-ce que c'est vrai?”</i> | <i>PB: “(...) I know that here the child, he's seen under a bad light if he asks too many questions to the adult, is that true?”</i> |
| [2] | <i>Jean-Baptiste: “Oui oui, c'est comme ça.”</i> | <i>Jean-Baptiste: “Yes yes, it's like that.”</i> |
| [3] | <i>PB: “Est-ce que tu trouves qu'il y ait un lien entre ça et cette attitude qu'on a envers les gouverneurs, et cette espèce de respect aveugle quoi...”</i> | <i>PB: “Do you find there's a link between this and this attitude that you have towards the administrators, and this sort of blind respect, somehow...”</i> |
| | <i>Jean-Baptiste: [Il prend la parole en</i> | <i>Jean-Baptiste: [He starts talking</i> |

coupant la mienne] “Oui, c’est un respect aveugle, oui si je peux le dire dans ces termes, c’est comme ça. C’est un respect aveugle même si on voit qu’on est coincé, même si on voit que les droits sont bafoués, on préfère se mettre à l’abri et ne pas s’exposer, c’est toujours comme ça, nous vivons donc cette situation et d’ailleurs dans les pays d’Afrique c’est comme ça, regardez le régime qui est ici au Burundi... Le Rwanda, au Zaïre [RDC], partout, au Kenya, c’est toujours comme ça. Donc, on a toujours peur de se montrer, de dire ce qui ne vas pas, donc comme on dit, il y a le proverbe qui dit: «La vérité blesse». On a toujours peur de ça ou bien on préfère faire des contours ou passer à coté ou à tort et à travers mais pour ne pas peut-être attaquer directement face à face, le problème, on préfère se retirer ou prendre de l’écart ou prendre un peu du recul pour ne pas peut-être prendre le devant, on a toujours cette... ce respect aveugle, je suis de votre avis avec l’expression: le respect aveugle.

cutting my word] “Yes, it is a blind respect, yes, if I can say it in those terms, it’s like that. It is a blind respect, even if we see we are stuck, even if we see that rights are disrespected, we prefer to seek refuge and not to expose ourselves, it’s always like that, we live in that situation, and besides in African countries it is like this: look at the regime that we have here in Burundi... In Rwanda, in Zaire [DRC], everywhere, in Kenya... It’s always like this. So, we are always afraid of coming out, afraid to say what is not ok, so, like we say, there is a proverb which says: «Truth injures». We are always afraid of that or then we prefer to go around, to bypass, to manoeuvre perhaps not to tackle the problem directly, face to face, we prefer to retreat, or take a distance, or take a step back, so as not to be in the frontline, we have always this... this blind respect, I totally agree with your expression: blind respect.

[4] *On voit des choses, mais on ose pas se déclarer par peur que (...) et c’est toujours comme ça et on le voit dans toutes les couches sociales, vous allez chez le chef de colline, c’est toujours comme ça, vous allez chez l’administrateur communal, c’est la même chose, vous allez chez le gouverneur, c’est la même chose, vous allez, vous montez chez le ministre, c’est comme ça, vous allez chez, jusqu’au niveau supérieur, jusqu’au sommet et c’est partagé comme ça.”*

[Bu31b, 16.11.2011]

*We see things, but we don’t dare speak up for fear of a violent reaction... It is always like that and we see that at all layers of society: you go to the chief of the hill, it’s always like that, you go to the mayor, it’s the same thing, you go to the province governor, it’s the same thing, you go, you climb up to the minister, it’s like that, **you go to... up to the highest level, to the top**, and it’s shared like that.”*

[Bu31b, 16.11.2011]

The interviewee’s voice conveyed how emotionally intense this passage was, and he felt seemingly liberated: “*Finally I can say it to someone!*”. He had been active in politics some years earlier, and although no longer involved with a political party, he was clearly not supporting the then ruling party.

Four passages are particularly significant (highlighted in bold above):

1. School, being the institution mandated to train young citizens to become good members of society, embodies and perpetuates these cultural traits. Asking questions to the teacher is generally deterred:

“In a collectivistic culture, while a high-status person can challenge the position of a low status person, it is a norm violation for a low-status person to rebut or question the position or the opinion of a high-status person, especially in the public arena.” (Ting-Toomey, 1994, p. 368).

2. The power distance between pupils and teachers (or higher ranking school staff) is such that a liberal and somehow subversive teacher thought up a peculiar use of the computer lab to allow pupils to express their complaints free from fear of retaliation:

Georges, enseignant ETS: “Souvent qu’est-ce que je faisais, je demandais aux élèves d’écrire avec l’ordinateur: pas moyen de connaître l’écriture. Je laissais chaque fois ma voiture ouverte, si vous avez des problèmes, glissez dans ma voiture; comme ça je vais montrer au directeur technique.”

[Bu85b, 18.11.2011]

Georges, ETS teacher: “Often here is what I did: I asked the pupils to write with the computer: no way to recognise the handwriting. I would leave my car open, if you have some problems, slip the sheet in my car, this way I’m going to show to the technical director.”

[Bu85b, 18.11.2011]

3. Although *I* was the one proposing the expression *respect aveugle*—blind respect, the immediacy of Jean-Baptiste in picking it up and owning it suggests a honest agreement, as his lengthy digression shows. Yet his interpretation of the proverb “Truth hurts” was surprising: he was not implying someone learning about an inconvenient or unpleasant truth, but rather a warning to the person who dares to speak an unpleasant truth, as this could result in personal injury inflicted by the accused in revenge.
4. When the interviewee spoke about the apex of the Burundian hierarchy he briefly hesitated, and avoided use of the word “*Président*”. The volume of his voice at that point lowered, becoming almost a mumble. While caution in expressing criticism against the establishment was not surprising, given his institutional role, it was obvious that fear had crept into his mind and warned him not to be too overt in his ‘disrespectful tirade against the ruling authority’.

A specific critical incident illustrates how this submissive relationship with authority affected the Computer Labs sub-project. When the AESTP project finished, a 500GB external hard drive, filled with educational software and videos, was donated to each school equipped with a computer lab. When asked about it 11 months later, the ETSA lab manager explained that he had never used it because he lacked the USB-to-MiniUSB cord to connect it to the teacher’s

workstation. The school principal had taken it “to charge his mobile phone”.

PB: “Haven’t you asked for it back?”

Emile: “Yes, but he says he can’t find it. Tough I’ve seen it on his computer desk.”

PB: “Can’t you insist?”

Emile: “Well, you know... he’s my principal.”

(Fieldnotes, 17.11.2011)

At that time, my own constraints prevented me from investigating the issue further with the principal. Months later, when I enquired again about the hard drive, Emile explained that he ended up procuring a new USB-to-MiniUSB cord, by paying a friend in the electronics business three beers, “*but* — he added swiftly — *I did not tell the principal*” (Bu32c, 09.06.2013) as if his proactive behaviour could have displeased him. In the same school, when the lab projector lamp broke and had to be replaced, Emile’s request was put on hold indefinitely by the principal (“*On verra*” — We’ll see). This was despite the fact that the lab had already earned enough money to buy a new one. This forced the lab manager, as well as any teacher who wanted to teach in the lab, to guide pupils with instructions such as “*Click on the bottom right corner of your screen, close to that little icon shaped as...*”. This hindered the fluidity and quality of the lesson and deterred teachers from experimenting. Nevertheless, the lab manager acquiesced and continued to teach without a projector.

If this is the typical cultural attitude towards authority, it is less surprising that Cédric or Firmin, who generally embodied it given their position and attitude, did not receive the reports they expected. Indeed, lab managers’ requests, such as attendance certificates at the end of each training course (see Section 8.3.1) had been ignored. Burundians then tried to fulfil their needs in other, less visible ways (see Section 6.4.3).

“For us to win, they have to lose”.

I generally observed an ‘either with us or against us’ culture: the playing level can never be even; it is intrinsically lopsided. As Emmanuel harshly put it after 28 years living in the country, married to a Burundian:

Emmanuel: “Tout n’est que rapport de domination. Au Burundi, ou tu es baiseur, ou tu es baisé.”

(...)

PB: “Est-ce que ce n’est pas une histoire de

Emmanuel: “Everything is but a domination relationship. In Burundi, either you screw or you get screwed.”

(...)

PB: “Isn’t it perhaps a white versus

blanc versus burundais?"

Emmanuel: "Non! Entre burundais aussi. Donc c'est très fatiguant d'être burundais! Tu n'es pas plus en sécurité qu'un gamin des rues qui a faim parce qu'il n'a pas d'argent et qui est malheureux ou qui est en insécurité parce qu'il a de l'argent et qui sait qu'on peut le voler. Tu as toujours un problème. (...) les burundais, j'exagère un peu, mais c'est un peu comme cela."

[Be7nb, Net-Map, 12.11.2011]

Burundian thing?"

Emmanuel: "No! Among Burundians as well. It's very tiring to be Burundian! You are not more secure than a street child who's hungry because he has no money and so he's unhappy or that has some money and feels insecure because he knows he could be robbed. Both ways, you have a problem (...) Burundians, I exaggerate a bit, but they are a bit like that."

[Be7nb, Net-Map, 12.11.2011]

Again this account recalls the numerous coups that have characterised recent Burundian history: in 2006, during his first six months in office, current President Pierre Nkurunziza neutralised as many as six plots against him. In return, during the following electoral campaign, several political opponents were arrested, intimidated and killed by the President's secret services, according to the Human Rights Watch report (2010). This political turmoil resulted in great instability for the AESTP project, as discussed earlier (see Sections 5.2.4).

In the aftermath of the 2010 Burundian elections:

1. The Ministry of Education changed its structure and leadership for the third time in five years (Rapport final projet AESTP — Oct. 2010, p. 16).
2. The Head of the Vocational Education Directorate (DGEST) was also moved to another office.
3. The Head of the BEET was elected to Parliament and therefore replaced (for the second time since the start of the project).
4. The principal of the ETS School (the flagship of all vocational secondary schools) was also elected Member of Parliament.

These four people were the main institutional interlocutors of the Project Management Unit. Furthermore, the principal of the second largest vocational school in the country (ETB) was also removed from his office due to a political conflict within the party in 2011. Such political turnover in Burundi is much higher than what in many 'Western' European countries and severely challenged the implementation of the AESTP project:

PB: "Tu trouves que ce mélange de politique et éducation a dérangé le projet?"

Cédric: "Oui, certainement hein! Allez, du fait qu'on ait quelqu'un à un poste et que on le change après un an ou deux ans, ça perturbe effectivement le bon déroulement des activités. Quand tu vois qu'on a eu trois ministres [de l'Éducation] en cinq ans: trois ministres en cinq ans c'est quand même quelque chose de très important!"

[Be1c, 29.05.2014]

PB: "Would you say that this mix of politics and education has disturbed the project?"

Cédric: "Absolutely! The sheer fact of having someone occupying one position and then he's removed after one or two years indeed troubles the good rolling out of the project activities. When you consider that we had three ministries [of Education] in five years... it sure is a very important issue!"

[Be1c, 29.05.2014]

This degree of institutional instability represented a considerable challenge for the European AESTP staff, not only pragmatically, but also psychologically, as it questioned the reliability of local interlocutors, who responded to a largely opaque and culture-bound logic. This affected my own work as a project manager and trainer, since I felt I was trying to build a solid foundation on moving sand. Because of this, I too sought security in my own values, which ultimately reinforced my own ethnocentrism (Camilleri & Malewska-Peyre, 1997, pp. 62-63).

Faltering institutional support due to the volatility of interlocutors has been reported as a main reason for failure among Indian telecentres (Best & Kumar, 2008, p. 42), in e-government projects in Sri Lanka (Stanforth, 2006), as well as in a major bilateral project in India (Mosse, 2005, p. 196):

"(...) policy is fractured by political contingencies: donor staff [is frustrated] by the whims of shifting senior Indian government postings which disrupt carefully negotiated partnership and dialogue."

My research most definitely therefore support such previous findings.

7.6.2 *Relatio*

"Amazi arashuha ntiyibagira i bumbeho" — The water while warming up does not forget its initial state: lukewarmness.

(Kirundi proverb)

Closely related to the concept of Ubuntu is that of *Relatio* (Sheneberger & Van Stam, 2011; Van Stam, 2012a), the *economics of favours*. In Europe, and later in the so-called West, since the 17th century a progressive institutionalisation of life took place. Giddens (1990) identified the disembedding of social relations from local contexts of interaction and the increased trust in abstract systems as two distinctive features of modernity. Through the development of social artefacts such as parliamentary states, the banking system and science, Europeans have

structured the social, economic and natural environment, gradually conquering uncertainty, by the constant strive to gain control and increase predictability. Such social artefacts became *intermediaries* that replace the informal, ad hoc negotiations between people, and between people and the environment. Increasingly, individual and familial resilience depended less on the solidarity they enjoyed within the community and more on the relationships individuals established with these intermediaries (Oyserman *et al.*, 2002, p. 3). Differently, in Burundi such movement towards predictability and control has not occurred: instead, people warrant their resilience by developing great adaptability to uncertainty and cultivating a denser 'safety net' constituted by innumerable ties with their community fellows (Foster, 2000; Wood, 2003). This is done by exchanging favours: there is no written accountancy of them, yet a favour becomes a lifelong credit, one that will remain valid as long as its beneficiary is alive. As Emmanuel explained:

Emmanuel: "Au début, quand on se connaissait avec Fafie [sa femme burundaise], par moment il y avait des gens qui m'invitaient chez eux. Je lui disais, il faut les inviter. Elle m'a répondu: «Laisse-leur le plaisir de savoir que tu as une dette.» Tu comprends? C'est bizarre la relation! Elle me disait que si au Burundi, moi je t'invite le dimanche et que toi tu m'invites le dimanche d'après, c'est très insultant. Cela veut dire: «Restons-en là. Je ne te dois rien, tu ne me dois rien.»"

[Be7nb, Net-map, 12.11.2011]

Emmanuel: "In the beginning, when I was first with Fafie [his Burundian wife], occasionally there was some people who will invite me at their place. I was telling her: «We have to invite them.» She replied: «Let them enjoy the pleasure to know that you owe them something». You see what I mean? It's strange the relationship! She was telling me that in Burundi if I invite you this Sunday and you invite me the following Sunday it is very insulting. It means: «Let's stay where we are: I don't owe you anything, you neither.»"

[Be7nb, Net-map, 12.11.2011]

Additionally, the value of the favour is variable and is a function of the status of the person when the favour is granted. Compared to money, which is a discrete quantity, or even property, which can indeed vary in value, favours are much more versatile: one can ask to be 'reimbursed' when it is most needed. Thus, a peasant offering a mango each day to a child on its way to school could receive a new house as payback 40 years later, should that child become a notable politician. The latter, while in power, will leverage his status by granting favours to many others that will ensure resilience should his fortunes change. The recipients of such favours are likely to remain loyal to him even then, not only because of a sense of gratitude, but also by fear of retaliation. For those not lucky or discerning enough to invest their mango in a future VIP, the

importance of mastering *Relatio* economics is vital: they can only trade small favours, and therefore they need many to ensure their resilience, making the social game of *Relatio* even more challenging and compelling. Thus, cultivating good interpersonal relationships is a top priority, as they can rely on no other institution as a welfare provider (with the notable exception of the Church) nor on scientific knowledge to stem environmental hazards (e.g. famines, droughts, floods).

While the progressive institutionalisation of African societies through colonialism has imitated the West, thus eroding the 'monopoly' of *Relatio* economics, this clannish system is still deeply rooted in African indigenous cultures (Booth, 2011, p. 3; Sheneberger & Van Stam, 2011; Wood, 2003). Critical of the dominant economic model, Latouche (2000) invites 'the West' to seek inspiration in Africans' great capacity to be resilient and fairly happy *despite* being marginalised from the global economy, thus questioning the mainstream idea of Development that was embedded in the AESTP project. Nevertheless, a careful look at contemporary Burundian society revealed a palpable tension: on the one hand the traditional *Relatio* 'welfare', which had been severely weakened by the interethnic animosity of the recent civil war (1993-2006) which had displaced thousands of people, who lost everything but their lives by the hands of their former neighbours. On the other hand the destruction of most of the allochthonous 'modern' institutions (state, banks, land register, companies), which were then perceived as even more alien and less trustworthy. The ensuing *helplessness* is difficult to grasp for anyone who has not experienced such circumstances first hand, and possibly more so for Aid workers accustomed to the privileges of expatriate life. In their view *Relatio* could easily be reduced to petty clientelism. While clientelism is still present Europe, it is disparaged in public rhetoric as akin to corruption and therefore to be eradicated. This permeates the Aid providers' discourse on good governance (Birdsall & Kharas, 2010, p. 72; ECOSOC, 2010, p. 3; Greenhill & Watt, 2005) and often results in a crude disapproval of the African rendition of foreign administrative practices. This is not a defence of so-called 'corruption', but rather a call for a deeper understanding of it (see also Brinkerhoff & Goldsmith, 2005). The following interviewee explained it succinctly:

PB: "Et ton homologue Burundais, le Directeur d'Intervention, qu'est-ce que c'est son objectif à lui? Qu'est-ce qu'il en tire de ce projet?"

PB: "And your Burundian homologue, the Intervention Director, what is his personal objective? What is he going to gain from the project?"

Emmanuel: "Il veut devenir riche en obligations. (...) Tu vois, au Burundi on est plus riche des obligations qu'on se fait auprès des personnes que de l'argent que donnent ces personnes. Alors, je t'explique. Un Burundais ne va pas te dire: «Paolo, si tu veux faire de la formation dans le projet X, tu me donnes 100.000BIF». Un Burundais va te dire: «Tu sais pas Paolo, [le chef du projet] il ne veut pas que ce soit toi qui fasses la formation en informatique. Je vais voir ce que je peux faire.» Il va revenir vers toi trois jours après et te dire: «Tu sais Paolo, la formation informatique, c'est toi qui va la faire.» C'est tout. Il ne va rien te dire de plus. Toi, si tu es un vrai Burundais, tu ne va pas lui donner de l'argent, mais tu sais que tu lui dois quelque chose. Donc tu as une obligation morale vis-à-vis de lui. Lui, quand sa soeur aura un problème pour aller à telle école professionnelle, toi qui travailles dans le professionnel, tu devras trouver une place pour sa soeur. Quand il aura un problème de voiture pour le mariage de sa fille, et toi qui as une [Toyota] Prado, tu va lui prêter la Prado, sans qu'il te le demande. Il va dire: «Je marie ma fille dimanche, mais le problème c'est que je n'ai pas de voiture.» Donc c'est ça la richesse."

[Be7nb, 12.11.2011]

Emmanuel: "He wants to become rich in obligations. (...) You see, in Burundi you are richer thanks to the obligations that you engender in people than to the money these people give you. Let me explain. A Burundian will not tell you: «Paolo, if you want to give the training in the project X, you give me 100.000 Burundian Francs.» A Burundian will tell you: «You know Paolo, [the project leader], he doesn't want you as the computer trainer. I will see what I can do.» He will come back three days later and tell you: «You know Paolo, the computer training, it is you that is going to do it.» That's all. He's not going to say anything more than that. You, if you are a real Burundian, you are not going to give him money, but you know that you owe him something. So you have a moral obligation towards him. He, when his sister will have a problem to be able to go to that particular vocational school, you who work in the vocational [education], you will have to find a place to his sister. When he will have a car problem for his daughter's wedding, and you who have a [Toyota] Prado, you are going to lend him the Prado, without him asking. He'll say: «I'm marrying my daughter on Sunday, but the problem is that I have no car.» So, that's the riches."

[Be7nb, 12.11.2011]

Relatio economics is not an exclusively Burundian or African phenomenon. Boas' account of the *potlatch* tradition among North American Indians (1896), Mauss' *Essai sur le don* (1924) and Malinowski's exploration of the Kula ring (1922), both carried out in South Pacific islands, initiated the study of so-called non-market economies and on the social meaning of gifts. According to Mauss (2002, p. X), "A gift that does nothing to enhance solidarity is a contradiction." Mosse (2005, p. 125) accounted for the importance of the economy of favours within a bilateral Development project in rural India:

"It goes without saying that development projects generally are never simply 'implemented' by single-sized actors through formal structures of responsibility; they not only require (and bring into existence) a range of unscripted Inter-institutional broker roles, but also need extensive informal networks of support, built personality through relations of trust and maintained through an out-of-sight '**economy of favours and obligations**' existing at the margins of legitimacy (or maybe in some cases legality)."

This cultural matrix helps to address some criticalities of the AESTP project in two main ways, described below.

1. *Overcrowded classes*

The Burundian President's emphasis on the importance of education and technical expertise mounted pressure on the Burundian vocational education system, especially in the capital city, where the largest technical school (ETS Kamenge) is located. Originally built to house 800 pupils, ETS hosted 2014 pupils in 2009, with several classes of more than 80 pupils. Moreover, given the presence of several workshops (car mechanics, carpentry, and others), the school administration offered its precious services to the local market, thus handling a considerable budget. Hence, this school has traditionally been a strategic asset for the ruling party, which assigned its prestigious leadership to notable party members, with marginal consideration of their educational drive.

Furthermore, according to three interviewees, fellow party members aspiring to enrol their children in the school bypassed the official application procedure through an informal arrangement with the school principal. This resulted in classes so overpopulated that it became impossible to ensure a minimum quality standard of teaching and learning, to the detriment of all pupils, the very children of those party members included (Little, 2008). Neither those party members, nor officials in the Ministry of Education or AESTP experts, seemed to acknowledge the irony and the vastness of the consequences of this illicit enrolment practice, given that the total budget devoted to the routing of freshmen issue was €1,000 out of €14M. When asked about it in 2014, Cédric confirmed that he was aware of such illicit practice and condemned it.

2. *Begging*

Relatio economics is key to understanding the dependent, often beseeching attitude already described in Section 7.3.3. This issue remains controversial, given how it contrasts the official goals declared in the bilaterally signed AESTP project (i.e. 'O4 The targeted schools generate income for self-financing' — see

Table 3.3), further buttressed by the promotion of self-employability by the Belgian embassy grants (Figure 7.24). Nonetheless, the broadening of the interpretive framework through providing an alternative and culturally sensitive explanation may serve as an antidote to the dispositional attribution

route. This route is prone to lead to the disparaging comments I often heard in expatriate circles (“*They are all lazy parasites!*”). The alternative route could possibly reduce intercultural misunderstanding by highlighting how the notion of asking is culturally defined and what may be perceived otherwise as self-belittlement is interpreted differently by Burundians and not tied to the dimension of dignity or self-respect, but rather as a homage to the Other.

In the next Chapter, I discuss how *Relatio economics* affected the Computer Labs sub-project in more detail.

7.6.3 Analytical Summary

This account of *cultural matrices* is admittedly partial and from a specific angle: I focused on those elements that appeared most to mark a significant difference in the way of thinking of bilateral partners in the AESTP project, often resulting in critical incidents. In particular, I attempted to provide a more nuanced view of an often romanticised vision of *Ubuntu*, carrying the echo of the *noble savage* myth, so likely to elicit paternalism in the occasional ‘Western’ visitor. Hence by no means is my argument intended to imply a comparison between a European and a Burundian mentality on moral grounds. Rather, while it may be sensibly argued that “People are far, far, far, more similar across cultures than they are different” (Spitzberg, 2011, p. 427) this may easily translate in an overconfidence that “we are all the same” (Barna, 1994, p. 337). A common ground (Clark, 1996; Rocci, 2006) exists indeed, if only for the sheer fact of being human, yet its boundaries are unfathomable. People interact across cultures as if they were walking side by side on an iced-over pond covered in snow: everything seems smooth and solid until the floor unexpectedly collapses and they fall in icy waters. Thus, instead of accusing the Other of being too heavy (*dispositional route*), I argue for an acknowledgement that *we* were too heavy for that particular spot, thus accepting our shared responsibility in our misunderstandings.

Being aware of the fragility of intercultural communication is like sweeping away the snow, deliberately embracing the slipperiness of the icy surface and the caution it requires, accepting that we are both clumsy beginners wanting to learn figure skating: it takes time and implies patience, courage and careful listening, beyond words. Learning about each other’s culture instead, is like learning to estimate the thickness of the ice so as to bypass thin spots, even if this requires a long detour, instead of just cutting across along the shortest

trajectory, pursuing fast and tangible results, in a compulsive attempt to stick to the plan.

Although the cultural matrices presented emerged from ethnographic experiences, they seem to resonate with two of Hofstede's (1980) dimensions, namely *large power distances* and *collectivism*. His classification of African societies as short-term oriented is nevertheless convincingly challenged by Sheneberger and Van Stam (2011, p. 32):

"By contrast, the majority of actions undertaken by the actor of the Relatio mindset are working towards long-run stability. The African experience—through the instability of environmental, political, medical, and other factors—has demonstrated the utter unpredictability of the short-run, while security in the long-run is limited only by the aggregate life-span of every member of the community to whom the individual is connected. This distinction helps to explain certain behaviours, such as the constant expansion of one's social network, the extreme efforts made to attend significant social functions (such as weddings and funerals), and the willingness to surrender resources needed for short-run development."

In other words, from a 'Western' economic mindset focused on commodities, any surplus should be carefully saved in order to increase resilience in future. Therefore, it may seem short-sighted to consume it in social happenings instead of investing it in long-term income generating activities. Instead, from an African logic relying on relationships as the source of resilience, it makes perfect sense to invest such surplus immediately, so to strengthen or expand the social safety net.

In sum, while a critical ethnographic approach is not immune from ethnocentrism, it constantly questions it. In contrast, a multidimensional approach to culture for the sake of comparability and generalisation fails to realise that it is not just the categories that are culturally bounded, it is the *categorising*. It is not just the contexts that are different, it is the *contextualising*. We as intercultural partners may share the same environment, but not the same *reality*, as we *construct* it differently:

Firmin: "On dort dans le même lit, mais on ne fait pas les mêmes rêves."

[Be2, communication personnelle, 06.12.2008]

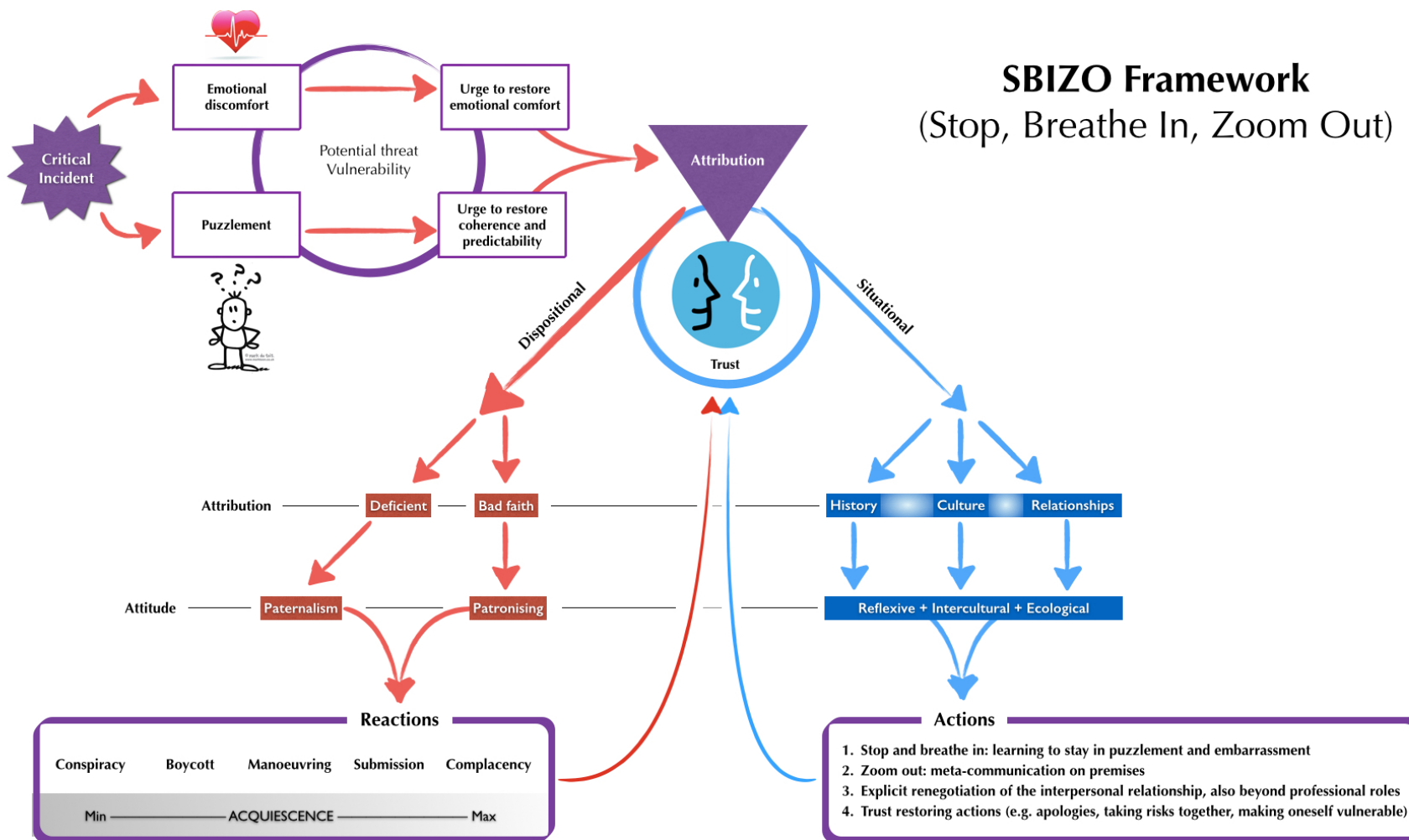
Firmin: "We sleep in the same bed, but our dreams are not the same."

[Be2, personal communication, 06.08.2008]

7.7 Conclusion: the SBIZO interpretive framework in action

This chapter has illustrated the *situational route*, thus completing the SBIZO framework (Figure 7.25).

Figure 7.25. The SBIZO (Stop, Breathe In, Zoom Out) interpretive framework for critical incident analysis.



It suggested that, when facing a critical incident, widening the scope of analysis can allow for a better understanding, by including:

1. A historical perspective.
2. A deeper awareness of existing cultural differences.
3. A 'third eye' examination of the mutual representation of *the Other*.

I named this framework SBIZO (*Stop, Breathe In, Zoom Out*) to stress the need for a deliberate effort to *pause* instead of hurriedly to resort to dispositional heuristics, and to contain emotional discomfort. This is motivated by the axiomatic assumption that there is *always* a coherence in human behaviour. Consequently, puzzlement and emotional discomfort are interpreted as signals that *my* cultural grid is not potent enough to recognise such coherence and *I* need to search further to find a bridge between *my* universe of coherence and the Other's. Such extension and enrichment of one's own "web of significance" (Geertz, 1973, p. 4) may resolve the puzzlement and the unpleasant emotions (anxiety, frustration, resentment) and restore a sense safety. This may require:

1. Explicitly to renegotiate those relationships.
2. Sincere apologies.
3. Taking risks together, thus *making 'myself' vulnerable first and staying open* until the Other does the same.

I do not claim this list to be exhaustive: other actions are certainly envisionable as long as their aim is to 'clean up' the relationship and (re)establish trust. Yet such moves require a willingness to level the interactional field, in order to collaborate on ground of human equality, by acknowledging the differences in competences without turning them into a superiority/inferiority complex. If the extension of the 'web of significance' is only one-sided, misunderstandings are likely to become chronic and crystallise into hypocrisy, thus compromising trust and ultimately collaboration. Mosse's (2005, p. 227) account of a DFID bilateral project on participatory Development in India vividly illustrates this risk:

"In a variety of ways, people discard the discipline of participation and self-help by making themselves clients, labourers or employees so as to secure continuing patronage, capital assets or wage labour. Unruly objects of development, these people strive to be modern *when we want them to be indigenous*, chaotic when we demand order; they present themselves as our clients and employees when we call them partners; dependent when we insist

on their autonomy. They make a mockery of our models and our explanations. But still smile and work with us to hold our models together.”
(Italic mine)

The only noticeable difference with the AESTP project is that *developers* did not “want them to be indigenous”, but *as modern as themselves* (see Chapter 8).

Following is an account of a critical incident that constituted a tipping point in my intercultural approach. Along side is the incident analysis, which will serve to illustrate the use of the SBIZO framework. It encompasses many of the aspects presented so far: my slipping down the dispositional route, the ensuing conflict, and the set of actions that proved effective in overcoming the conflict and restoring trust after the incident.

[Ethnographic Snapshot #3 16.03.2009]

Analysis using the framework

<p>(...) <i>Big troubles as a trainer: last Thursday morning it rained, despite we're in the dry season. My first thought was: "Damn it! I didn't bring my coat, nor an umbrella! I'll be wet when I get in class!" and the second: "Oh don't worry, nobody will show up until on half an hour after the rain stops and your morning plan will be screwed, by the way". So I got my breakfast hoping that the rain will cease, and no, I had to leave from the hotel where I was staying with several other participants and walk 20 minutes under the rain, uphill, to get to the school, no taxi, no taxi-moto, no taxi-bike. At the hotel, nobody had shown up yet. And I sensed it that I would have been once more and again the only one present at the PC lab where the training was taking place. (...) All in all I got there at 8:15, 15 minutes late: 2 people out of 28 where already at the door, and not even the ones lodging close to the school. The rest of the group slowly tickled in with a good third of them arriving after 9h00 am. While waiting I made the unilateral decision that those coming after 9 would have been considered absent for the morning and therefore they wouldn't have perceived half of the per diem. They would have had access to the class and stay for the course if they had liked, as an act of magnanimity, but that was it. I strokethrough their cells in the signature table with a wide red marker to make clear that it was done, and no negotiation about it. Once they all arrived, I told them the decision I made, that it was not negotiable, and I added, quite bitterly: "I tell you something: as a trainer and as a</i></p>	<p>Mismatch of expectations about the context Self attribution of inadequacy Anticipation of losing face Emotional discomfort Mismatch of expectations relative to my ethics of work Implicit dispositional attribution of laziness (bad faith)</p> <p>Discomfort due to local context</p> <p>Anticipation of disappointment</p> <p>Confirmation of my negative dispositional attribution</p> <p>Authoritarian patronising attitude</p> <p>Paternalistic attitude</p> <p>Authoritarian, patronising attitude</p> <p>Expression of the negative</p>
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<p><i>European who's been living here for 4 years: the fact that a simple rain can stop your self-development plans, is for me one of the greatest signs of underdevelopment of this country." And at this point, (...) I indulged in opening the debate and let them express their mind, as in particular a couple of them where already shouting against it. Eventually, we spent two hours discussing, with at least a third of them expressing their mind. Protests were on different levels, mostly relational:</i></p>	<p>dispositional attribution (deficient)</p> <p>Open conflict</p> <p>Trainees' meta-reaction: boycott</p>
<p>1. <i>I had treated them like kids by punishing them, instead of address the problem in a adult-to-adults way.</i></p>	<p>Their negative emotional reaction to my patronising attitude</p>
<p>4. <i>I had made a decision unilaterally, imposing it on them out of my — supposed — authority, although we had not established such a rule in advance. And this they would never accept: to them, as a trainer, I don't have such a right, I'm not their Burundian boss. Him and him only has the right to sanction them. So if anything I had to report them to their boss and have him sanction them. ("Yeah, right!" — I thought) (...).</i></p>	<p>Their negative emotional reaction to my patronising attitude</p> <p>Their fierce defence of local rules</p> <p>Implicit dispositional attribution (bad faith) and collusion with their bosses against me, the white foreigner</p>
<p>5. <i>I had treated them with disdain, basically telling them "You, lame underdeveloped people!", thus offending them on a personal level.</i></p>	<p>My negative dispositional attribution (deficient) provoked their negative emotional reaction</p>
<p>6. <i>By doing that I was symmetrically putting myself on the traditional muzungu position, who feels and acts as superior, thus nullifying much of what I had built by treating them as equals and consciously trying not to fit into that stereotype with all my behaviour [i.e. eating and drinking cheap Burundian meals with them, using my bike instead of a 4x4 to go to work, etc.] (...).</i></p>	<p>Our emotional reactions triggered our mutual dispositional attributions (bad faith), flattening the relationship on stereotypes of whites and of Burundians</p>
<p><i>What their suggested solution? Simple: to stay longer in the evening, as long as it is necessary to compensate the time lost in the morning because of the rain. None, not one in 13 or so who spoke, even mildly recognized that being late due to the rain was somehow a fault, nor proposed to get better equipment (umbrella, coat)</i></p>	<p>Second critical incident: denial of responsibility and defence of local customs.</p>

to prevent this inconvenience next time. This is at its core what made me go wildly mad, bitter and confrontational, to the point of engaging in a symmetrical conflict likely to escalate to the cancellation of the whole training. Why? Because I'm intimately convinced that this epiphenomenon of the rain-caused delay is deeply rooted in one of the fundamental cultural divides that distinguish the so-called developed countries from the so-called developing countries, and that is the locus of control. Who's in charge of my life? Me or the environment? Do I fight to change the situation or just adapt to it? Will I get independent from the whims of the whether by buying a cheap umbrella or will I just wait for the rain to stop and then we'll see. I strongly believe that it has little sense to train people technically if by doing that you are miseducating them culturally. What right then do I have to even only think I'm entitled to 'teach' them culture? Where is the threshold between me being a trainer and me being an educator? Where is the line not to be trespassed between education and cultural colonialism? Where do I ethically ground my action in this regard? Can I root my very being here in a sound and robust concept of human development, capable of withstanding accusation of cultural arrogance and imposition? And even admitting that I can — as I believe I can — would this be enough to push forward? Where is the balance between being open and available for reasonable negotiation and end up being at the mercy of the group's will? Am I expecting too much? Am I vainly hoping for a radical change in the mentality of a group of adults that have been swimming in that water for their whole life just because of me telling them that's the good way to go? Should I give up and accept that the only cultural learning I can provide is the one my trainees will get by simply observing how a "developed white" behaves, without addressing the matter directly, openly, both verbally and practically, through the rules I establish for my training? I know by experience that in Burundi the group unity is the supreme value, and those 'reasonable' people are often less charismatic and would let go and abide with the decision of the group — mostly driven by brilliant and charismatic assholes — to their own detriment.

Amplification of my emotional reaction: symmetric escalation of the conflict

Zooming out: start of the transition towards the situational route, yet still maintaining an ethnocentric superiority complex.

Further questioning of my premises by looking at cultural differences

Paternalistic attitude

Questioning of my ethnocentric paternalism

Questioning my role

Questioning my mandate

Questioning my tactics

Zooming out

Reflection on meta-communication

Situational disposition (culture)

Angry dispositional attribution (bad faith)

<i>I've discussed this episode with many people and I got a lot of insights out of it.</i>	Questioning my premises
<i>First: "How can you dare call them underdeveloped when we developed a civilisation that destroys its own life support system?" — my flatmate bluntly pointed out. It struck me. (...) Waiting for the rain to stop is certainly zero impact, whereas buying a poor quality Chinese umbrella, probably made by child labour and then transported all the way to Burundi quickly to end up broken under a bush implies a bigger ecological footprint, indeed. I do think that it's a matter of finding the right balance, but let's say I'm not that rock solid in my cultural stance anymore.</i>	Radical change of perspective: zooming out, questioning my implicit model of Development
<i>Second: I realized I'm not legitimate to be a cultural educator by addressing these issues as a content of this course: this is not what was in the "contract" I've established with my trainees. (...)</i>	Reflection on the relationship between me and them, on my mandate
<i>Third: Go talk face-to-face with Zéphirin, my most brilliant trainee and also the toughest negotiator. Explain to him why I got so upset and let him know that I understand he was offended by my words as he felt I was putting him back into that underdeveloped stereotype he's trying hard to detach himself from, very much the same way I was pulled back into the muzungu stereotype by treating them as underdeveloped, despite all the effort I had made to "be a different muzungu".</i>	Meta-communication about the incident, the relationship and the different premises
<i>Fourth: I was shocked by them complaining that I shouldn't have told them they are underdeveloped (which I didn't in such a crude way, as I pointed out an attitude, not some people) because "We already know we are". And as they were saying that I was getting even more upset, as these people are "the champions I selected", and therefore I expect them to be different and brighter than the average Burundian.</i>	Reflection on the relationship Critical incident: their self-dispositional attribution as deficient: interiorisation of the oppressor (Freire, 1970) Questioning my own capacity to judge: feeling of insecurity Erosion of trust, both in them and in myself

On that occasion, the conflict was sedated after the lunch break, through my public apology for my disrespectful tones. This forestalled the trainees' threat of boycotting the training and allowed its continuation. However, overcoming suspicion and restoring a good level of trust, conducive to fruitful collaboration, took much longer. The main strategy I adopted towards this goal was to meta-communicate, that is explicitly to discuss the roots of any critical incident I experienced in the future on grounds of equality. Moreover, by organising the

training closing ceremony we were *all* putting our face at stake in front of our respective bosses: I made myself *as vulnerable as them* by putting my reputation at stake trusting that they could demonstrate they had become capable to set up and administer a lab on their own, without my direct intervention.

In sum, the SBIZO framework suggests that to prevent a critical incident to degenerate into an interpersonal conflict, one has to learn to *stay in the puzzlement and welcome embarrassment* (Sclavi, 2003, pp. 185–215). Hers is not a call to self-control by emotional repression to attain a cold, lucid perception of the situation. On the contrary, this author argues that emotions are precious signals informing us about *how* we are perceiving what we are perceiving — often as a threat. However, I do not claim that (a) meta-communicate about the premises (b) renegotiating the interpersonal relationship, beyond professional roles and (c) develop and/or restore trust by apologising, taking risks together and making oneself vulnerable will solve every intercultural conflict: Eastern cultures such as the Japanese are reported to have a very different approach to conflict resolution, less explicit (Ting-Toomey, 1994). Middle Eastern culture, such as the Afghani, focus on forgiveness, rather than on apologies (Sidebotham, 2011). Nevertheless, these elements do seem to be able to contribute towards a resolution of the tensions that were encountered in Burundi, and may have resonance elsewhere in Africa.

The following chapter slides the focus back into the actuality of the Computer Labs sub-project to show how the broadening of the analytical scope illustrated so far greatly helps to understand the usage patterns as well as the different expectations held by Europeans and Burundians with regards to the exploitation of these new technological facilities.

8 *The technological imperative and its pitfalls*

8.1 Introduction

This chapter builds on the evidence of the previous two chapters to examine the perceived realities of the computer labs in Burundian vocational schools and explores how the Belgo-Burundian relationships, their history and their cultural load interlock with the *technological imperative* (see Section 2.4.1), tangibly affecting project outcomes. While some think that this construct has become obsolete in a hyperconnected world (Tony Bates, personal communication, 06.06.2012; Van Zyl, 2013, p. 147), I argue here that it maintains some heuristic value in defining certain dynamics in ICTs deployment.

First, the evidence of a widespread consensus on the *technological imperative* among all stakeholders at different analytical levels is shown. Second, the main research question (*Why do school computer laboratories set up in the sub-project often remain unused, even though all stakeholders agree that they are indispensable?*) and its different layers are unpacked. Third, the expectations around the computer labs, held by *developers* and by *developees*, are addressed, highlighting the contrast between instrumental and symbolic values of ICTs, with a special focus on aspirations (Appadurai, 2004; Pal, 2008). What follows is a reflection on the computer lab as a source of power and its effects on interpersonal relationships within the school. Finally, the key research question itself is questioned and reframed in light of the insights generated along the way.

8.2 *The technological imperative in action*

Hollow (Hollow, 2010, p. 33) asserted that:

“The practical job of assessing the use of ICTs in education in Africa is founded upon, and driven by, the underlying, often subconscious philosophies of technology that stakeholders adhere to.”

This section presents the philosophy of technology underlying the AESTP project and investigates its concrete consequences on the project outcomes.

The *technological imperative* was defined earlier as the combination of three beliefs about ICTs (see Section 2.4.1):

1. ICTs are fundamentally good; they lead to Progress.
2. ICTs are just a means, thus culturally neutral and universally applicable.
3. ICTs are indispensable, especially in education, otherwise one will be excluded from modernity and lose credibility.

These tenets emerged clearly from my interviews with every stakeholder as well as from the official AESTP project documents. It pervaded all analytical levels, *before, during* and *after* the computer labs were installed.

8.2.1 Nano level: Teachers

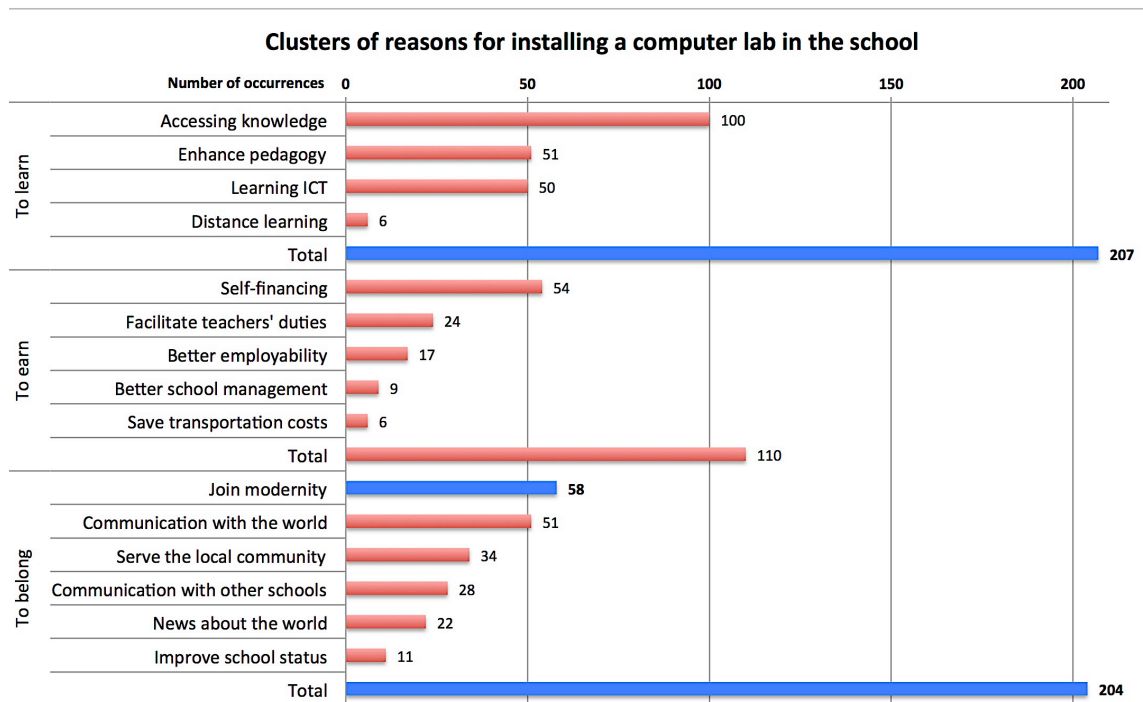
During the recruitment process for the lab managers training, candidate teachers generated narratives about the future computer lab in the form of 123 written essays. In this section, I present an analysis of their account. A caveat should, though, be noted, which is that candidates were only a subset of the teacher population, namely those who aspired to take part in the training after listening to my presentation of the project, which inevitably primed them with our expectations. It is therefore likely that they presented themselves as technology enthusiasts and expressed a complacency bias. Nevertheless it is still significant to check what stuck in their memory and was reposed in their essays.

The first cluster of questions was:

Why would you put a computer lab in your school? What would you expect the outcome to be? What advantages and inconveniences do you expect?

Once coded (Saldaña, 2009), I clustered answers around three themes: *to learn, to belong* and *to earn* (Figure 8.1). These themes then served as a comparison when I analysed developers' expectations. What follows is an analysis of the recurrent inconveniences foreshadowed by respondents.

Figure 8.1. Clusters of reasons for installing a computer lab in the school according to the teachers who participated in the recruitment for the computer lab manager training.



Source: Author.

To learn

The most popular reason given by the teachers for wanting to join the initiative was that a computer lab would have given *access to knowledge* (“*connaissances*”). This umbrella term also encompasses the terms *information* and *documentation*, the latter to refer mostly to the handwritten notes jotted during their pre-service teacher training while listening to their professor. Indeed the lack of textbooks is a major problem throughout all the layers of the Burundian education system. Hence, in half of the cases, respondents wished to improve their current teaching practice by updating information about their area of expertise to overcome such a deficiency:

La salle multimédia est indispensable dans notre école, car on donne nos cours dans l'air, [sans aucun support didactique]: c'est la théorie qui reigné.” (C85) [C pour Candidat]

“The computer lab is indispensable in our school, as we deliver our courses in the void [without any didactic support]: it's the theory that reigns.” (C85) [C stands for Candidate]

Imagining having access to up-to-date information and learning ICTs skills did not translate into an explicit desire to enhance pedagogy by changing *teaching methods*. Most teachers simply expected to update their syllabus while continuing to deliver their course as usual — not in the computer lab. Only five

candidates explicitly referred to pedagogy in the sense of ICTs-enhanced instruction:

*“J’aimerais que le système d’enseigner au Burundi changeait et qu’il se basait sur l’ordinateur, car c’est **rapide, moderne et profitable.**” (C111)*

*“I’d like that the teaching system of Burundi will change and base itself on the computer, because it’s **rapid, modern and profitable.**” (C111)*

*“Car l’école nécessite de rendre l’apprentissage **rapide et efficace**, c’est à dire que certain courses et programmes peut être donné dans le réseau informatique.” (C104)*

*“Because the school needs it to make learning **fast and effective**, that is to say that some courses and programmes can be delivered on the computer net.” (C104)*

*“La salle multimédia est **nécessaire** dans notre école car tous les professeurs en ont besoin pour donner leurs courses. C’est à dire que tout professeur va utiliser la salle multimedia.” (C118)*

*“A computer lab is **necessary** in our school because all the teachers need it to teach their courses. That is to say that every teacher will use the computer lab.” (C118)*

*“On va avoir un enseignement de **qualité.**” (C83)*

*“We will have a **high quality** teaching.” (C83)*

The modernist rhetoric of efficiency, speed and effectiveness is inscribed in the enthusiastic anticipation of the benefits of the computer, with an unconditional faith in its wonders, in line with what Sabiescu *et al.* (2013, p. 138) reported on South African pre-service teachers:

“At one extreme, participants manifested an almost religious sense of relating to technology, characterised by passion for its technical aspects and trust in what it can do for the human being.”

There was very little reflection on the use of ICTs with pupils and even less on the teaching of courses other than office automation. This idea which I termed *tech-idolatry* (see Section 2.3 — see also Son, 2004, p. 522) resonates with Pal’s (2009) account of technology perceptions among rural Indian parents who worshipped the computer, yet were unable to specify a single use for/of it. In a similar vein, few (10) candidates associated technology with intelligence, expecting an improvement of their intellectual capabilities:

“[La salle multimédia] nous donnera l’amélioration des notre capacité intellectuelle.” (C35)

“[The computer lab] will give us a development of our intellectual capacity” (C35)

“Mettre une salle multimédia dans notre école c’est une grande chose, car ça va nous donner une grande capacité intellectuelle en terme de technologie moderne pour les élèves.” (C45)

“To put a computer lab in our school is a great thing because it will provide a great intellectual capacity in terms of modern technologies for pupils.” (C45)

“C’est intéressant d’étudier l’information: ça va nous donner l’intelligence.” (C25)

“It’s interesting to study information, it will give us the intelligence.” (C25)

“La salle multimédia va éveiller les esprits

“The computer lab will wake up the minds

d'enseignants, élèves, et de tout le monde."
(C77)

of teachers, pupils, and everyone else."
(C77)

In sum, the computer lab was entrusted with magical powers, like a fetish (Best, 2010, p. 51; Pal *et al.*, 2009).

To earn

The second cluster includes the more pragmatic expectations, relating to the second tenet of the imperative: ICTs as a means. First was the exploitation of this new facility to generate income.

"L'école va bénéficier de l'argent car la population environnante va naviguer l'Internet: bref la population tout autour sera développée."
(C45)

"The school will benefit some money because the neighbouring population will surf the Internet, in short, the neighbouring population will be developed." (C45)

I had pictured this scenario myself during the project presentation, raising a lot of attention. The project rationale aimed at attaining financial sustainability of the computer lab by offering services to local clients and this idea was re-proposed in many (54) of the essays.

Second, teachers envisioned the use of ICTs as a way to lighten their administrative workload. At the time of this recruitment, teachers had to devote great effort manually to calculate grades and averages for all their pupils using a calculator. The prospect of improving this process by means of the computer was very appealing (as reported also by Bladergroen *et al.*, 2012, p. 133).

Third, ICTs skills were perceived to be an asset on the job market, once pupils graduate:

"Nos élèves vont être aussi bons que tout autre une fois entrés dans le marché du travail."
(C66).

"Our pupils will be as good as everyone else once entering the job market." (C66)

Additionally, 12 teachers imagined better employability for themselves:

"Connaître l'informatique va m'aider à long terme pour trouver un boulot et sortir de la pauvreté." (C67)

"To have ICTs skills will help me in the long run to find a job and to get out of poverty" (C67)

A few (9) teachers imagined advantages at the administrative level, envisioning better communication within the school as well as with ministerial authorities.

“On va pouvoir communiquer avec les autres écoles du pays.” (C69).

“We will be communicating with the other schools in the country.” (C69)

Significantly, this cluster is the least prominent of the three, despite being the most recurrent in the official rhetoric around the computer labs (see Section 8.3).

To belong

With respect to the tenets of the *technological imperative*, candidates repeatedly stressed the importance of ICTs as a means to *join modernity*. This represented the aspiration to Progress, as well as the antidote to the fear of being left behind (Sabiescu *et al.*, 2013). Their narratives expressed a belief in ICTs as a *status booster*, both personally and for the school, “marking out of the developed people and places” (Mercer, 2006, p. 254):

“[La salle multimédia] will give the school a modern look.” (C42)

“[The computer lab] will give our school a modern look.” (C42)

“Tout d’abord, ça va donner une grande importance à l’école.” (C16)

“First of all, it will give a great importance to the school.” (C16)

“Ça va être une honneur pour notre école et pour nous les professeurs, méritant ce nom.” (C120)

“It will be an honour for our school and for us as teachers deserving that name.” (C120)

“L’installation d’une salle multimédia dans notre école va nous donner une image de prestige, mais aussi la communauté de l’école et la région environnante.” (C76).

“The installation of a computer lab in our school will provide our school with a prestigious image, but also the extended school community and, why not, the neighbouring region.” (C76)

Together with this increase in status, candidates emphasised the value of the computer lab as a means to break free from isolation (*enclavement*), thereby becoming citizens of the world (Kuriyan & Kitner, 2009; Mercer, 2006; Pal, 2008). This aspirational dimension is twofold:

1. Reaching out *to the world*, where “the world” was a highly symbolic entity:

“En général, l’installation d’une salle multimédia dans notre école va permettre à moi et aux élèves d’avoir une ouverture sur le monde.” (C83)

“In general, this set up of a computer lab in our school will allow me and pupils to have an opening through the world.” (C83)

“La salle multimédia va nous permettre d’ouvrir nos horizons.” (C95)

“The computer lab will allow us to open our horizons.” (C95)

2. Being informed *about the world*:

“C’est une modernisation. Avec la nouvelle connaissance des TIC on va pouvoir suivre ce qui se passe dans le monde.” (C9)

“Nous allons vivre avec l’actualité.” (C76)

“It’s a modernisation. With the new knowledge of ICTs we will be able to follow what’s happening in the world.” (C9)

“We are going to live in-sync with the latest news.” (C76)

Conversely, two candidates highlighted the negative consequences in case the computer lab was not installed, representing the fear related to the third tenet of the *technological imperative*:

“Ça serait très important de mettre une salle multimédia dans notre école afin d’ouvrir les horizons de toute la communauté de l’école, pour ne pas rester en arrière par rapport aux autres coins du monde.” (C31)

“Une fois la salle multimédia installée et un ordinateur sera donné à chaque professeur je serai à l’aise, car je ne serai plus coupé du monde, c’est à dire que je serai à niveau avec ce monde qui évolue.” (C56)

“It would be very important to put a computer lab in our school in order to open the horizons of the whole school community so as to avoid to lag behind with respect to other corners of the world.” (C31)

“Once the computer lab is installed and a PC is given to each teacher, I will be at ease, since I will no longer be cut off from the world, that is I will be on par with this world that evolves.” (C56)

Burundi is a landlocked country with poor transportation infrastructure. Moreover, all the schools were rural or semi-rural schools, with the exception of ETS Kamenge, in Bujumbura. Thus, for respondents, the aspiration of transcending isolation was twofold: from rural to urban, and from rural to the world. The schools selected to host a computer lab would have managed to communicate and exchange. I had stressed this point during my presentation of the sub-project, which aimed at creating a national *team* of computer lab managers, capable of mutual assistance, rather than many autonomous islands.

Finally, computer labs were also conceived as an asset not just for the school, but for the local community, which would have benefitted from this leap forward into modernity, while benefitting the school in turn, by means of telecentre services.

Foreshadowed inconveniences

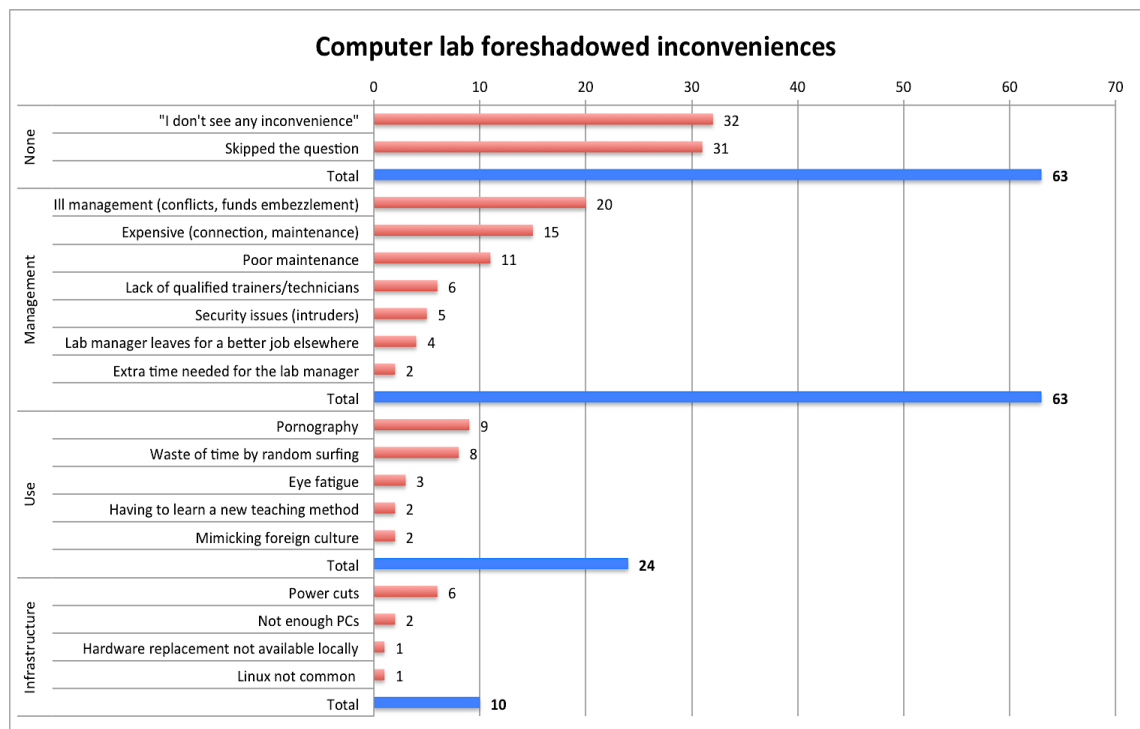
Burundian candidates echoed what Bladergroen *et. al.* (2012, p. 115) recorded from South African teachers:

“Negative voices were in the minority, largely overshadowed by educators’ encouraging and deterministic attitudes toward ICTs. (...) The manner of deployment accords with a ‘Western’ view that “technology is good” and that “it makes life easier”, thereby disregarding the critical concern of limited availability of computers in schools, limited access to computers, and limited skills and authority.”

When asked about potential side effects, a quarter of the respondents skipped the answer while another quarter could not suggest any. The remaining candidates considered installing a computer lab as a wholly positive intervention. The other half of the candidates foresaw three kinds of challenges (Figure 8.2) relating to:

1. *Management*
2. *Use*
3. *Infrastructure*

Figure 8.2. Foreshadowed issues related to the future computer lab.



Source: Author.

These concerns demonstrate a certain capacity to project into the future with a critical eye. Space constraints do not allow a detailed analysis of every element. However, I focus here on the risk of ill management, as it acknowledges both the values attributed to the computer lab as well as a lack of trust in the future lab manager:

“Comme inconvenience ce projet risque de ne pas

“As an inconvenience, the project risks not

durer longtemps, à cause des gens qui risquent de gérer la salle multimédia comme si c'était à eux, c'est à dire que quand le projet AESTP partira, le contrôle sera moins rigoureux et les ordinateurs vont tomber en panne et il n'y aura pas les fonds pour les réparer ou pour les remplacer." (C108).

to last long, due to the people who risk to manage the computer lab as if it was their property, that is to say that when the AESTP project will leave, the control will be less rigorous, and the PCs may fail and there will be no funds for repairing or replace." (C108)

This lack of trust resonates with that expressed by Jean-Baptiste who described Burundians in positions of power as prone to abuse it if not controlled by an external authority, in this case, the AESTP project (see Section 7.6.1 — see also Mbangwana, 2008, p. 121). This is yet another manifestation of the dependant mentality engrained in many Burundians, which finds its counterpart in the paternalistic and patronising attitude of the Belgians. This reinforces the collusion between the two that favours a self-fulfilling prophecy (see Section 7.4.4).

8.2.2 Nano level: Pupils

While teachers were surveyed during my first round of field research, pupils were interviewed only during the two subsequent rounds. Therefore, their answers were not 'anticipations' but rather a reflection in hindsight about the reasons behind the installation of a computer lab. Across schools, they were generally enthusiastic about the computer labs (see also Hennessy *et al.*, 2010; Li, 2007):

PB: "À votre avis quelles sont les raisons pour l'introduction des nouvelles technologies de communication dans les écoles burundaises?"

Élève 1: "À mon avis, (...) c'est pour améliorer les compétences."

Élève 2: "À mon avis, on a fait ça pour nous puissions nous connecter au niveau mondial (...) communiquer avec le monde entier."

[Bu65b, 16.11.2011]

Élève: "Connaître l'ordinateur c'est d'évoluer avec le monde."

[Bu35a, 02.03.2010]

PB: "In your view, what are the reasons for the introduction of the new communication technologies in Burundian schools?"

Pupil 1: "In my opinion (...) it is to improve the competences."

Pupil 2: "In my opinion, they did it so that we can connect at the global level (...) communicate with the entire world."

[Bu65b, 16.11.2011]

Pupil: "To know the PC is to evolve together with the world."

[Bu35a, 02.03.2010]

Élève: "Parce que le monde évolue du jour au jour, et l'évolution actuelle est basée sur le système informatique, c'est à dire avoir s'absenter dans la salle, je considère ça comme un échec."

[Bu 17a, 22.02.2010]

Pupil: "Because the world evolves day by day, and today's evolution is based on informatics, so to be absent from the computer lab, I consider it a failure."

[Bu 17a, 22.02.2010]

These excerpts resonate with teachers' views: the connection with 'the world' was by far the most immediate and recurrent answer, even though they had never enjoyed an Internet connection, except at ETS Kamenge. This discrepancy clearly shows the symbolic value attached to ICTs as the *hallmark of modernity*. Such emphasis on belonging to *the world* is coherent with the *Ubuntu* cultural matrix, which stresses the importance of interconnectedness (see Section 7.6.1). As Mercer (2006, p. 245) put it:

"The Internet has been appropriated by users as a marker of modernity, a way for people and places to distinguish the 'developed' subject by virtue of the connections they forge to other people and places."

This argument can be extended to ICTs at large, as long as it holds the *promise* of such interconnectedness through the Internet in the near future. Mercer continues (2006, p. 245):

"It fosters a sense of inclusion in the global flows of popular youth culture, enabling people to, 'reach out to and signify affinity with an outside world beyond the local' (Ferguson, 1999, p. 212)".

8.2.3 Micro level: Principals

As for pupils, principals too could not be surveyed systematically before the installation of the computer labs, but their accounts were recorded during the subsequent two rounds of field research (2010, 2011).

The newly appointed principal of ETS Kamenge expressed the *technological imperative* rhetoric most vividly:

Benoit: "(...) le monde est en train d'évoluer, vers l'avant, c'est à dire que les TIC sont devenues réelles dans certains pays, en Europe plus particulièrement, et l'Afrique aussi doit suivre, donc l'Afrique ne devrait pas rester en dehors par ce que, c'est en moyen de communication, on ne va pas communiquer avec soi-même, on doit communiquer avec les autres, et si les autres font un pas en avant, c'est à dire à un certain moment, on se retrouvera, isolé sur soi-même. Je pense que c'est

Benoit: "(...) the world is evolving, going ahead, this is to say that ICTs became real in certain countries, especially in Europe, and Africa too must follow, so Africa should not be left out, because it is a communication means, we are not going to communicate with ourselves, we have to communicate with others and if others move a step forward, at a certain point will find ourselves isolated. I reckon this is the important question, we have to

ça la question très importante: on doit avancer avec les autres, si non on risque de rester sur soi même, et sans pouvoir avancer."

[Bu80b, 15.11.2011]

advance with the other, otherwise we risk to remain on our own, **without the possibility to advance."**

[Bu80b, 15.11.2011]

This declaration illustrates the three tenets of the *technological imperative* as it entails:

1. A recurrent reference to Progress ('*a step forward*'; '*to advance*').
2. Cultural differences are ignored ('*in Europe ... and Africa must follow*').
3. A strong fear of being excluded ('*Africa should not be left out*'), and excluded for good ('*without the possibility to advance*').

This was seconded by ETSA principal's declaration:

Claude: "Bon, ce que j'ai constaté c'est que en fait, tout dépendra de l'évolution de la technologie, parce que après tout on ne va pas rester seuls sans... sans savoir ce que les autres connaissent déjà!"

[Bu30a, 02.03.2010]

Claude: "Well, what I've come to realise is that, indeed, everything will depend on the evolution of technology, because, after all, we are not going to remain alone and ignorant about what the others already know!"

[Bu30a, 02.03.2010]

8.2.4 Meso level: the Computer Labs sub-project

When I was first asked by AESTP to prepare a proposal to introduce the Computer Labs sub-project, there were no resources allocated to conduct a preliminary investigation of stakeholders' needs at the school level. Along with many others, the UNESCO Schoolnet Toolkit (2004, p. 16) recommends:

"ICTs-in-education initiatives work best when they are well-resourced and have a multilateral approach with the participation of a wide range of stakeholders and partners. (...) The risk arising from uncoordinated and unplanned investments in ICTs are substantial. These include increased costs and lower efficiency, educationally unsound implementation and vendor-driven solutions that may not be appropriate for the environment or may increase the total cost of ownership."

This is echoed by the Schoolnet Africa toolkit (Isaacs, 2004, p. 60):

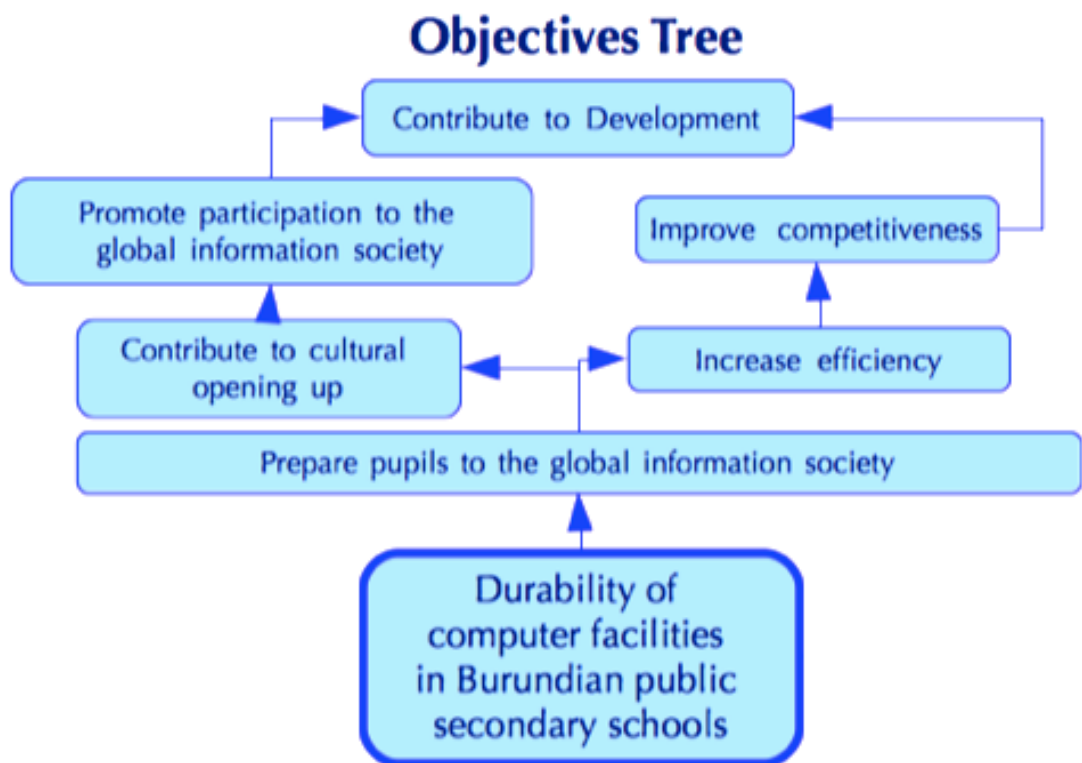
"The more stakeholders involved in agreeing to a process, the more the process is likely to be accepted and adopted. The stakeholders in this process range from national ministries of education, to NGOs operating in this field (e.g., schoolnets, international donor organisations, local implementing organisations), to teacher training institutions, to schools and teachers themselves."

More recently, Isaacs (personal communication, 08.02.2014) has commented:

“Alas, learners and teachers as critical as they are as 'stakeholders', they were rarely consulted in government-led or government-supported ICTs in education initiatives — whether they assumed the form of PC labs or more recently as 1:1 computing programs for teachers.”

The AESTP project was no exception: the installation of the computer labs was unanimously perceived as obviously opportune and nobody considered it necessary to consult end users directly. I crafted my project proposal based on my previous experience in just one vocational Burundian school. The Computer Labs sub-project proposal I submitted presented the following rationale (Figure 8.3).

Figure 8.3. Portion of the Computer Lab sub-project Objectives tree, illustrating its rationale.



Source: Computer Labs sub-project official document, p. 6.

The *technological imperative* was inscribed in this rationale and was not questioned by AESTP, especially concerning:

1. The link between the computer labs and development.
2. Its programmatic approach (*'increase efficiency'*; *'improve competitiveness'* as possibly foreign or irrelevant to the local Burundian context).
3. The potentially contentious idea of exiting isolation to join the information society, as well as the global economy.

Nevertheless, once the proposal was approved, I felt a strong urge to explore beneficiaries' expectations both as a way to comply with the project management manual (EuropeAid, 2004) and compare them with post-implementation perceptions. The trainees recruitment process illustrated earlier was a result of this need. Unfortunately, such constraints prevented me from surveying pupils' and principals' expectations as well, as I had originally anticipated.

8.2.5 Macro level: the AESTP project and the Belgo-Burundian cooperation

The technological imperative rhetoric was inscribed in the wider AESTP project, which was based on the assumption that improving vocational education through an injection of technology and training would have led to better employability, considered unanimously as a proxy for development (see Section 3.5). This attitude resonates with a testimony by a Ministry of Education official in Ethiopia, reported by Hollow (2010, p. 271):

“There is a subconscious assumption that it must be a good thing because it is technology. There is no critical thought regarding the actual educational impact — it is just an assumption that says this is technology stuff, we don't have it, it is good, so we want it.”

To which he comments:

“The underlying assumption that technology is an inherent good can easily progress into a belief that it therefore presents an all-encompassing solution for the challenges facing education. This is a foundational ideology that drives a significant portion of the ICTs for education agenda in Africa.”

This assumption shone through also in the last interview with Cédric in May 2014. In hindsight, his narrative emphasised the great educational progress made possible through the technological advances brought about by the AESTP project:

Cédric: “Il y eu un progrès énorme! Ils ont évolué, les professeurs qui ont reçu les formations en électricité, en mécanique auto, mécanique general, en plomberie, ils on fait énormément de progrès parce que bon, en 30 ans de temps ils n'avaient pas évolué: maintenant avec le nouveau matériel, la nouvelle technologie, ça a changé pour eux énormément et c'est grâce a ça qu'ils ont pu faire de projets d'autofinancement aussi, hein.”

[Be1c, 28.05.2014]

Cédric: “There was an enormous progress! They evolved, teachers who received trainings in electricity, auto-mechanics, general mechanics, plumbing, they made an enormous progress because you see, in 30 years they hadn't evolved: now with the new equipment, the new technology, it changed a great deal for them, and it is thanks to it that they could run some self-financing project as well, you know.”

[Be1c, 28.05.2014]

It is indisputable that there has been significant progress in many of the schools targeted by the project thanks to the infrastructural interventions carried out by the AESTP project: pupils were no longer forced to sleep by two in a single bed, toilets as well as kitchens were properly rebuilt (although running water was not guaranteed), and workshops were replenished in equipment and consumables, allowing for practical training. This has been acknowledged in a letter that principals of the targeted school collectively wrote at the conclusion of the project to thank its leaders. Moreover, they warmly welcomed Cédric in 2013 when he returned to Burundi: a clear sign that the tensions once existed had faded away and that “*they understood themselves that the way we suggested was the good one*” — as he reported to me in his 2014 interview (Be1c). Nonetheless, every investment has opportunity costs (Heeks, 1999, pp. 15-16), thus one may legitimately wonder whether spending €4M (\approx £3,2M) to equip a few schools with cutting edge machinery and electronics was preferable to investing the funds in building more classrooms and training more teachers to accommodate the pressing surplus of pupils and providing them with less fancy equipment. Questioned about the issue of overpopulated classes, Cédric replied:

Cédric: “Il y avait de quotas, mais on dépassait les quotas parce que il y avait autant d’élèves, il n’y avait pas assez de classes et donc ils dépassaient les quotas. Il n’y a rien à faire: il y avait une pénurie de salles de classe et d’écoles, c’est ça le problème.”

PB: “Ça c’est vraiment une question politique. On se dit: «Est-ce que c’est mieux de donner un mauvais service à beaucoup de monde ou un bon service à peu de monde?»”

Cédric: “Oui oui, effectivement c’est politique mais c’est un mauvais choix qu’on a fait.”

PB: “Mais donc c’est quelque chose dans laquelle la CTB ou la Belgique ne se sont pas impliqués, quelque chose de Burundais?”

Cédric: “Ils sont au courant, car le plan sectoriel [de la CTB] dit combien d’élèves sont prévus et ce que le Burundi doit faire pour satisfaire les besoins, mais bon, entre un plan et la réalisation il y a un monde de différence et tant que ce plan n’est pas réalisé, il faut envoyer les élèves à l’école et faire avec ce qu’on a, les moyens du bord.”

[Be1c, 28.05.2014]

*Cédric: “There were limits, but they were surpassed because there were so many pupils and there were not enough classrooms, so they surpassed the limits. **There’s nothing to do: there was a dearth of classes and schools, that’s the problem.**”*

PB: “It’s really a political issue, isn’t it? «Is it better to offer a bad service to many or a good service to few?»”

Cédric: “Yes, yes, indeed, it’s political, but it’s a bad choice that has been made.”

PB: “So you’re saying that’s something the CTB never looked at, something Burundian?”

*Cédric: “They now about it, because [CTB’s] sector plan says how many pupils are foreseen and what Burundi should do to satisfy the demand, but you know, **between the plan and the roll out there is a world of difference** and until the plan is not implemented, **you must do with what you have, to get by as best as one can.**”*

[Be1c, 28.05.2014]

Although this passage refers to *all* technological investments done by AESTP, not just the computer labs, the power of the technological imperative in orienting the allocation of funds emerges clearly: building new classrooms and training more teachers about, say, pedagogy, is not as flashy as equipping few schools with costly high tech devices, which are also much easier to photograph to please funders (Hollow, 2010, p. 277). I return to this particular aspect in Section 8.5.3.

8.3 Same words, different meanings

While the three tenets of the *technological imperative* were shared among stakeholders, they did not saturate people's imagination about the computer labs. Beneath this shared rhetoric, stakeholders held different sets of expectations. These partially overlapped, yet *ranked differently in importance*. Some of these expectations were openly expressed, other were un-confessed, not to jeopardise the credibility of the dominant rhetoric in front of a counterpart. Finally, some were not expressed simply because they were implicit: it is only through the identification of critical incidents that the last category could be 'decrypted'. These narratives are illustrated in the following sub-sections, highlighting the differences between the *developers'* and the *developees'* perspectives.

8.3.1 *Developers'* narrative: ICTs as a means to *do something*

This section explores the themes identified in the teachers' survey (See Section 8.2.1) from the point of view of *developers*.

To learn

Developers' expectations concerning the future computer labs largely overlapped with those of *developees'*. With respect to the *learning* theme:

1. Computer facilities would have enabled teachers to become computer literate.
2. *Therefore* teachers would have used newly acquired skills to:
 - a. Pass them onto pupils, and/or

- b. Exploit them to improve their teaching practice in any given subject, not just office automation.
3. These newly acquired skills would have granted better employability to pupils once they graduate, which was the overall goal of the AESTP project (see Section 3.5).

The expectation was that teachers would resort to digital educational resources such as Microsoft Encarta 2009 digital encyclopaedia to update their knowledge and improve their courses and they would use it with their pupils. A series of educational DVDs was distributed to each school and contained episodes of the French TV show “*C’est pas sorcier*”, a captivating educational program. Teachers were expected to incorporate these DVDs as audio-visual support to their lessons, by using the video projector. Where the Internet was available (ETS Kamenge), teachers were expected to learn how to search for further educational resources and apply this knowledge to enhance their practice.

Finally, the computer labs were also configured to enable different technical software packages to be taught, such as AutoCAD (<http://www.autodesk.com/>), Multisim (<http://www.ni.com/multisim/>) and Photoshop (<http://www.photoshop.com/>), according to the different specialisations of each school. This would have prepared graduates to be ‘on the cutting edge’ when entering the job market.

To earn

Besides this pedagogical concern, *developers* were counting on the future computer labs as a source of income for the schools, to become self-sustainable and possibly even profitable:

Firmin: “Et moi, ce que je voulais comme à [l’ETB] Bubanza, c’est changer l’horaire avec le directeur — il m’a dit, «Ce sera difficile, il va y avoir des plaintes mais on va y arriver» — et après 17h00, les gestionnaires des salles continuaient à ouvrir pour les gens des alentours. On mettait l’Internet; on faisait venir des gens qui payaient un petit quelque chose, parce que le gratuit je suis contre, et comme cela ça s’entretenait.”

[Be2b, 23.11.2011]

*Firmin: “And I, what I wanted like at [ETB] Bubanza, was to change the schedule in agreement with the principal. He told me it will be difficult, we’ll have some complaints but we’re gonna get there — and after 5 pm the computer lab managers will keep opening the labs for the neighbouring people. We’d put the Internet, we’ll have people coming and paying a small fee, because I’m against things for free, and **that way it would pay for itself.**”*

[Be2b, 23.11.2011]

Cédric: “Ce n’est pas qu’on veut avoir un regard sur ce qui se passe mais c’est **simplement pour les accompagner à gérer, à mieux gérer la salle** parce que je suis sûr que avec la location de la salle, il y a des revenus qui entrent et qu’avec ces revenus, ils peuvent payer un gestionnaire partiellement. Ils peuvent aussi acheter quelques bricoles pour remplacer ce qui est cassé, quoi.”

[Be1a, 11.03.2010]

Cédric: “It is not that we want to have a look on what’s going on, **it is just to accompany them to better manage their computer lab**, because I’m sure that by renting out the computer lab, there will be some revenues that will come in, and with those revenues, they can pay a manager. They also can buy some spare parts to replace what’s broken.”

[Be1a, 11.03.2010]

Indeed, Firmin had successfully installed such a system at the ETS Kamenge, where they managed to afford a broadband connection (512kbps dn/128kbps up) costing £150/month over two years through user subscriptions (see Section 5.2.3). The system was terminated in 2011 when Firmin withdrew his support as he suspected the principal of embezzling the money it produced. Tied to this expectation was Cédric’s concern to build enough administrative capacity to fulfil the criterion of *sustainability*, so prevalent in the Development rhetoric (see Section 2.2.1). This concern was primarily oriented upwards, towards the higher-ranking interlocutors at the macro level, especially CTB officials.

All these concerns assumed that the ultimate goal for setting up a computer lab in the schools was *instrumental*:

Gilbert: “...une **technologie** lorsque elle vient, elle vient **apporter des solutions**, elle vient améliorer l’existant.”

[Be3a, 04.02.2010]

Gilbert: “...a **technology**, when it comes, it comes to **bring about solutions**, to improve what’s there.”

[Be3a, 04.02.2010]

This conception of the lab *as a means to a practical end* was developers’ official narrative and the *only* legitimate one: ITCs status symbolic value was not contemplated. This was reflected also by the lack of formal recognition for the training attended by teachers during the project. According to AESTP staff, the Burundian Ministry of Education would not issue attendance certificates to avoid a wave of salary increase requests by the attendees. One of ETP lab manager lamented this practice:

Gustave: “Nous avions pensé que les responsables de l’AESTP allaient se mettre en contact avec les responsables de l’éducation notamment le Ministre ou le Directeur Général de l’Enseignement Secondaire Technique [DGEST] pour que le ministère soit au courant

Gustave: “We thought that AESTP managers would have contacted the education authorities, namely the Minister or the Head of the Vocational Education [DGEST] so as to inform the ministry that there are teachers who are committed, who

qu'il ya des professeurs qui se donnent, qui déploient beaucoup d'efforts en plus des heures de cours, afin qu'il y ait au moins une prime d'encouragement pour ces derniers ou bien un certificat qui atteste que tels professeurs ont des connaissances en informatique plus que d'autres. Comme ça s'il ya d'autres projets qui viennent appuyer par exemple l'enseignement secondaire général, que nous soyons pris en considération pour aller apprendre aux autres professeurs ou même aller installer des ordinateurs s'il y a une occasion qui se présente. Je croyais que les formulaires remplis lors de cette formation allaient arriver loin, comme au Ministère de l'Education par exemple.

[Bu212a, 01.03.2010]

make a great effort on top of their normal workload, in order to reward them with an incentive **or a certificate proving that those teachers have more knowledge in informatics than their colleagues**. That way if other projects come, say to support the secondary education in the humanities, we could be considered to go teach our colleagues or even go install other computers, should the occasion arise. I was expecting the forms we filled during the training to reach far, like to the Ministry of Education.

[Bu212a, 01.03.2010]

It was not possible to explore this matter further, as the decision took place at the beginning of the project and had become an established policy before the research really began. Nevertheless, such policy proves that the AESTP accepted that a 'piece of paper' was not essential: what mattered were the actual skills acquired during the training.

In contrast, the following section analyses how this symbolic dimension played out for Burundians, once the labs were installed.

8.3.2 **Developpees' narrative: ICTs as a means to *be someone***

To a great extent, *developers'* instrumental narrative was echoed by Burundian authorities as well as by stakeholders 'on the ground', i.e. principals, computer lab managers, teachers and pupils, for two reasons:

1. They believed much of it.
2. They knew it was *developers'* official narrative.

To learn

First, everybody agreed that the computer labs were to be used to teach and learn computer literacy (mostly office automation) to every teacher and pupil. ETS Kamenge also offered a specialisation in *Informatique Opérateur*, teaching advanced office automation skills and basic programming, and *Informatique de Maintenance*, teaching hardware and software maintenance and networking (ETB Bubanza later offered it too).

Second, the most frequently reported use of the computer lab across the different roles (i.e. principals, lab managers, teachers and pupils) was the use of Microsoft Encarta 2009 as a resource to help prepare for courses:

Directeur ITAB Gifuruzi: "Nous avons Encarta 2009, qui nous aide beaucoup, tout professeur l'utilise pour préparer ses cours."

[Bu70a, 10.03.2010]

ITAB Gifuruzi principal: "We have Encarta 2009, which helps us a lot, every teacher uses it to prepare his/her courses."

[Bu70a, 10.03.2010]

This use of the lab was aligned with the desiderata of the developers', yet only partially: the teachers who actually used Encarta, did so to prepare their courses, which they would deliver later in their regular classroom. In early 2010 only one teacher in a single school (EPC Kiganda) was reported to be using Encarta with his pupils. The ETSA principal offered a plausible explanation: he was initially quite worried about the potential disrupting consequences of the new lab on teachers' status and authority (see Section 8.3.2). Moreover, he was also concerned about the resistance certain teachers had towards ICTs, which forced them to change their teaching routines and keep up to date, which for certain teachers represented a great inconvenience. In addition, allowing pupils self-directed use of the computers entailed the risk of having them surpassing their teachers' knowledge (Hawkins, 2002; Li, 2007, p. 390):

Claude: "Euh, maintenant les professeurs devront le faire, parce que s'ils ne le font pas, les élèves vont les devancer. ((Rire)) Et ils sont obligés, ils sont dans l'obligation de chercher parce que l'élève va chercher avant le professeur et le professeur sera obligé de chercher d'avantage. C'est ça ce que j'ai aimé en fait, le plus grand souci était que les professeurs font des recherches avant les élèves. S'il ne le font pas, l'élève va être beaucoup plus actualisé que le professeur et [ce dernier] il sera ridicule, c'est là où nous sommes entrain de voir les bienfaits de la salle multimédia."

[Bu30a, 02.03.2010]

*Claude: "Ehm, now teachers will have to do it, because if they don't, pupils will surpass them ((Chuckles)). And they are forced, they have an obligation to search because if the pupil will search before the teacher, the teacher will have to search even more. **This is what I liked in fact: the biggest concern was that teacher searched before pupils.** If they don't do it, the pupil will be much more up-to-date than the teacher and [the latter] will be ridiculous. That's where we are going to see the positive effects of the computer lab."*

[Bu30a, 02.03.2010]

PB: "Est-ce que vous voyez aussi le risque que les élèves deviennent plus... plus performant, plus experts que les profs? Car disons eux, ils aiment beaucoup l'Encarta et ils l'exploitent beaucoup, c'est vrai?"

Jean-Baptiste: "Oui, oui! Parce qu'il y a...ils font des recherches et ils trouvent des beaucoup"

PB: "Do you see the risk of pupils becoming more... proficient, better expert than teachers? Because I know that... they like Encarta a lot? Is it true?"

Jean-Baptiste: "Yes, yes, because they search there and they'll find a lot of data."

de données.”

Emile: “C’est qu’ils n’ont pas de support: comment ils vont prendre ça? En fait ils n’ont pas d’argent pour imprimer ces feuilles, ils n’ont pas de flash-disques pour porter ça, les CDs aussi, mais sinon s’il y avait tout ce matériel, ça serait... ils seraient plus performants que les professeurs.”

[Bu312a, 02.03.2010]

Emile: “It is because they don’t have any hardware support: how can they take that? And they don’t have the money to print out the sheets either, they don’t have the pen drives to take away, or CDs, but otherwise with all this material **they would be more proficient than the teachers.**”

[Bu312a, 02.03.2010]

Having participated in the training, the two computer lab managers, Jean-Baptiste and Emile, had gained considerable self-confidence in the actual use of computers. Nevertheless, as teachers, they readily agreed that there was an actual risk of being outperformed by their pupils with respect to their subject expertise (see also Chigona *et al.*, 2010, p. 28). Indeed, at that time few pupils accessed Encarta (only 5 in a class of 29) and did so covertly (fieldnote 04.11.2011). In 2010, pupils were never allowed in the lab without a teacher directing their actions, almost click by click. Emile’s argument minimised the problem by observing that pupils’ lack of material and financial resources was a reassuring barrier against this risk. Knowledge remained ‘trapped’ in the computer; only teachers had the means to extract it and thus the teacher-pupil status gap was preserved.

Eighteen months later, this regime had relaxed and pupils were allowed to access the lab and use the computers autonomously, with little supervision by teachers or lab managers. Yet, no teacher was purposively using Encarta with pupils during lessons. A similar pattern was observed at ETB Bubanza and LTK Kiremba, where interviewees reported they permitted direct access to Encarta to pupils. Yet, only at ITAB Karuzi and ETP Gitega was this done as a deliberate pedagogical strategy. The reasons for this change remained unclear: at ETS Kamenge teachers’ commitment was generally low and teachers had more pressing concerns than the pupils opinions on them. In rural schools (ETB, LTK, ETSA, ETP) apparently the threat of being outpaced by pupils and lose status had faded away, together with the novelty effect.

The ICT4E literature frequently reported *fear* as a barrier to the uptake of ICTs by teachers (Ale & Chib, 2011, p. 61; Bingimlas, 2009; Jones, 2004). This literature refers mainly to a lack of self-confidence in the use of technology by teachers. For example, teachers fear sudden technical failures and a resultant loss of face vis-à-vis their pupils, due to insufficient technological mastery. Yet,

in this case such risks of losing face, and consequently status, were supplemented by a lack of *subject knowledge*. Textbooks, books, newspapers and magazines, TV documentaries, specialised radio programs, and the Internet were not present in the semi-rural context of Burundi, and therefore any access to knowledge was very difficult. Consequently educated people were relatively rare and high in status, and not easily accessible, especially for pupils attending vocational schools. Access to knowledge by means of ICTs thus challenged the *status* of teachers in the milieu within which they were traditionally pre-eminent. While for some proactive individuals this represented an opportunity for personal growth, for many others it posed a threat to their comfortable 'knowledge monopoly', besides requiring extra learning effort. This echoes Hawkins' remarks (2002, p. 43):

"Many teachers, however, initially feel threatened by the loss of control in the classroom as students, who are usually more adept at using technology, can quickly access information and challenge the teacher's role as the sole font of information."

In a hierarchical society revolving around status, the narrative around the instrumental value of ICTs gave way to a stronger *symbolic* narrative. ICTs were prestigious, and their access and use was incorporated within local cultural codes (see Section 7.6). Thus, for example, in every school the time allotted to teachers to access the computer lab was disproportionate — from the *developers'* point of view — to that granted to pupils:

Firmin: "...parce qu'ils ont toujours dans la tête qu'une salle multimédias c'est pour les professeurs, pas pour les élèves. Et je n'arrive pas à changer leur mentalité."

[Be2b, 23.11.2011]

Firmin: "...because they keep thinking that a computer lab is for teachers, not for pupils. **And I don't manage to change their mentality.**"

[Be2b, 23.11.2011]

Firmin's comment above, in bold, again highlights the intercultural tension between *developers* and *developees*. The *developers'* instrumental narrative did not allow for any reference to status as a legitimate reason to regulate access to technology. This would have not been acceptable in the broader cultural perspective of developers, in which power distances tend to be smaller.

Interpreting usage/non-usage patterns of the computer labs under the lens of *status* made them more intelligible:

PB: "Comment vous voyez le rôle de la technologie dans cette école? (...) c'est quoi que ça a engendré?"

PB: "How do you see the role of technology in this school? (...) What has it brought about?"

Théophile, directeur ETB: "Euh, l'arrivée de cette nouvelle technologie, ça a engendré d'abord l'évolution de l'école, l'école a évolué parce que avec l'installation, après l'installation de ces deux salles multimédias par exemple, nous avons une idée de demander une nouvelle section de l'informatique de maintenance. Nous l'avons demandé et nous l'avons eue. (...) Le Ministère [de l'Éducation] nous a agréé une nouvelle section, et nous, nous l'avons demandée parce que nous avions deux salles multimédias qui étaient fonctionnelles. Alors cette section, aujourd'hui elle a commencé, elle est en première année. Alors c'est dans ce sens que je dis que l'école a évolué."

[Bu10a, 08.02.2010]

*Théophile, ETB principal: "The arrival of this new technology has propelled the evolution of the school: the school evolved because with the installation, **after the installation of those two computer labs for example, we had the idea of requesting a new section: computer maintenance. We asked for it and we obtained it.** (...) The Ministry [of Education] approved the new section, and we, we requested it because we had two computer labs working. So this section today has started, it's the first year. It is in this sense that I say that the school evolved."*

[Bu10a, 08.02.2010]

As mentioned in Section 5.3.4 (see Figure 5.10), with 886 pupils, ETB Bubanza faced a critical problem of overcrowded classes. The existing computer labs were already insufficient to meet the two-hours-per-week-per-class of computer training required by the ministerial programme. Yet, instead of rationalising their use, the ambitious and proactive principal requested and obtained the opening of a new section. This aggravated the overpopulation problem, at the expense of the pupils and teachers using the labs. The following excerpt further illuminates this problem:

*PB: "C'est quoi l'objectif ultime de ces écoles?"
[en indiquant les écoles dans la net-map]*

Firmin: "Leur but c'est de grossir. (...) De devenir la plus grosse école."

[Be2na, Net-Map, 18.02.2010]

*PB: "What is these schools' ultimate goal?"
[Pointing at the schools on the net-map]*

Firmin: "Their goal is to grow (...) To become the largest school."

[Be2na, Net-Map, 18.02.2010]

Firmin: "Et ce qui fait la différence ce sont les écoles qui ont été réhabilités par l'AESTP et en plus de l'AESTP, parce que maintenant il y a de l'équipement, on a fait de la publicité et maintenant à la télé on a montré: maintenant on a de l'équipement, maintenant on est performant... Et tu es victime de l'équipement: plus tu équipes, plus tu as d'élèves. (...) Kamenge et les autres écoles, ce sont des 'show rooms'. La preuve? Dès que tu arrives à l'ETP de Gitega, la première chose qu'on te fait visiter, c'est la salle multimédias, ce n'est pas la salle de dessin."

[Be2b, 23.11.2011]

*Firmin: "And what makes the difference is the schools which have been renovated by AESTP and beyond the AESTP, because now they have some equipment and they've done some ads on TV and they've shown: now that we have the equipment we are performing... **And you are a victim of the equipment, the more you equip yourself, the more you have pupils.** (...) Kamenge and the other schools are 'show rooms'. The proof? As soon as you get at the ETP Gitega, the first thing they will make you visit is the computer lab, it is not the drawing room."*

[Be2b, 23.11.2011]

In the same vein, cabinets containing equipment and consumables were proudly exhibited to visitors, as proof of the school's wealth and modernity. Hence, from the ETB principal's perspective, the greatest value of technology was instrumental not so much in the pedagogical sense imagined by the *developers*, but rather as a *status booster* (see also Rye, 2009). A larger school meant more tuition fees to administer, more influence in the community, and consequently, a higher status in the ruling party. This is not to deny Théophile sincere desire to offer better education, or to portray him as a corrupt individual. Instead, it is precisely by refraining from such simplistic and negative attributions (see Chapter 6) and by embracing the cultural universe of Burundi (see Chapter 7) that the key research question can be understood. In a world imbued by the *Ubuntu* mentality and *Relatio* economics, modern technologies were valued more for their being *modern* than for being *technologies*. While putting them to good use remained a concern, to own them represented a quantum leap into modernity, which is in line with Kuriyan and Kitner's (2009, p. 24) findings on women and ICTs in India and Chile:

“...a symbolic value associated with ICTs that linked to notions of progress, advancement, and upward mobility. It was based on an idea of leaving one state of being and entering another.”

Similarly, ICTs for Burundians were a means to *be, or become, someone*, more than a means to *do something*. As a *status symbol*, ICTs represented the membership card to the prestigious club of modern, developed, and possibly rich-and-powerful people. This resonates with Pal *et al.*'s (see also Pal, 2012; 2009, p. 138) study of the aspirational value of computers for rural Indians, who attributed to computers a similar aura:

“Computers can make you powerful; you can do anything nowadays with computers.”

However, they could not specify what '*anything*' would mean in practice.

The computer lab was like the new swimming pool earning an extra star for its hotel. Yet, if the swimming pool is empty or inaccessible, hotel customers' complaints to the tourism authority will soon lead to the revocation of that extra star. Instead, such an accountability mechanism was not available to pupils, who passively accepted the status quo rather than challenging their superiors to defend their rights, as an ETS teacher explained:

Georges: “Ils [les élèves] ne le disent pas parce Georges: “They [pupils] don't say it

que les droits de l'homme ça dépend, ça dépend de l'individu dont les droits sont bafoués. Parce que l'élève ne sait pas que l'ordinateur a été amené pour lui."

[Bu85b, 18.11.2011]

because the human rights it depends, it depends on the individual whose rights are baffled. Because the pupil is not aware that the PC has been brought for him."

[Bu85b, 18.11.2011]

8.4 The computer lab as a source of power

This section further explores the symbolic value of the computer labs, drawing on the reflections presented in Chapter 7. Hence, a cultural and symbolic perspective rooted in *Ubuntu* and *Relatio* dynamics helps to explain some behaviour that initially appeared counterintuitive from my *developer* perspective.

During the second round of field research (2010), computer lab managers reported to be volunteering between 15 and 30 additional hours (21.7 on average) to fulfil their management duties. At ETP and LTK, interviewees affirmed that the labs were kept open until as late as 10:30 pm. In 2011, this had decreased to 15 additional unpaid hours/week on average. This may seem contrary to the *developers'* complaints that computer labs were underused or left empty. Lab managers would often keep the labs open to use computers themselves or to allow teachers or external visitors to use them (see Section 5.2.2). When asked why they did so, their answers varied but revolved around four key motives:

1. Sense of ownership
2. Learning
3. Increasing their social capital
4. Earning money.

8.4.1 Sense of ownership

When asked about the methodology of the training course, lab managers appreciated its formula, as it fostered team spirit. Furthermore, the training allowed them to visit other parts of the country for the first time, and they felt engaged in the very process of setting up the lab:

Juvenal, gestionnaire ETP: "C'est ça même qui me pouvais à passer plus de temps [dans la

Juvenal, ETP lab manager: "It's precisely that which made me stay so long [in the

salle] même à réparer. Si on faisait les déploiements, quelques fois ça ne marchait pas. Je n'arrivait même pas à dormir à cause de cela! ((il rigole)) Donc, l'installation des salles ça a débuté avec nos petits ordi[nateur]s, on a amené les machines, on n'a fait la promotion, donc ça m'a fait sentir comme si c'était pour moi: si ça ne marchait pas je me trouvais pas à l'aise. Mais si ce n'est pas le cas, ça marche pas, vous dites. «Ça ne marche pas», vous laissez comme ça, ça ne vous dit rien. C'était pas le cas pour moi. Mais je sais pas les autres ce qu'ils en pensent...”

[Bu21b, 13.11.2011]

lab] to troubleshoot. When we were reformatting the whole lab, sometimes it did not work. I could lose my sleep thinking about it! ((he chuckles)). So, the lab installation started with our little PCs, we brought in the workstations, we have advertised it, so I felt like this was for me: if it didn't work I didn't feel ok. Yet if it's not the case, and it doesn't work, you just say «It doesn't work» and you drop it, no big deal. This was not the case for me. But I don't know what the others [lab managers] think...”

[Bu21b, 13.11.2011]

This excerpt confirms the longstanding ‘first commandment’ of Aid effectiveness, which insists that beneficiaries’ sense of ownership is the most fundamental element to ensure sustainability (see Section 2.2.1). While his attitude was not necessarily shared by all lab managers, in every school one manager generally assumed responsibility for the lab, sometimes even competing for supremacy with the other lab manager. In one case though, this changed abruptly: at ETS Kamenge a PC was stolen and the lab manager was immediately arrested and sent to jail. He managed to get out a week later only thanks to the intervention of a powerful relative who was a member of the ruling party. However, he fiercely protested himself innocent and victim of a plot organised by his superiors — a hypothesis that was credited by other interviewees and that I judged credible. As a form of both retaliation and precaution, he quit his role as lab manager, passing the keys of the lab to his colleague, who experienced the very same misadventure few weeks later, leaving the school for good once out of jail. The disruption of trust between the lab managers and his superiors resulted in the computer labs left underused for several months.

8.4.2 Learning

Self-directed learning was particularly prominent among seven lab managers who, during the training, seemed extremely fascinated by technology — the *techies*. They were eager to troubleshoot the technical problems they faced everyday and to learn more about the use of ICTs, i.e. how to install new software.

Juvenal, gestionnaire ETP: “J’étais motivé par le

Juvenal, ETP lab manager: “I was

fait de trouver la solution à des problèmes, aussi découvrir quelques choses."

[Bu21b, 13.11.2011]

motivated by the fact of finding the solution to problems, also to discover stuff."

[Bu21b, 13.11.2011]

Lab managers at ETB and EPC reported using Encarta and watching "*C'est pas sorcier*" to learn about non-ICTs-related subjects.

8.4.3 Increasing their social capital

The role of lab manager helped increase their status in the school ecosystem and local community, especially in rural and peri-urban schools where ICTs were otherwise not easily accessible.

PB: "*Du point de vue de votre relation avec les professeurs, est-ce que le fait d'être gestionnaire a-t-il changé quelque chose dans la relation avec vos collègues?*"

Juvenal: "*Je dirais que ça a changé positivement. (...) Puisque de temps en temps on nous appelle pour dépanner ou bien un prof peut venir ici et demander des explications, ou bien même encours de chemin, à la bibliothèque... on peut causer avec eux aisément à propos de l'informatique, c'est ça que j'appelle positif.*"

(...)

Gustave: "*Quand même ça nous fait plaisir parce que si quelqu'un vous appelle pour dépanner sa machine et que vous réussissez, ça fait plaisir. Et des fois nous réussissons, les gens de la bibliothèque le savent, au secrétariat également, le directeur technique le sait bien, le directeur aussi. Dans tout ces services nous avons déjà dépanné leur machines plusieurs fois, nous leur gravons des CD gratuitement, et ça leur fait plaisir aussi.*"

[Bu212a, 01.03.2010]

Pierre, gestionnaire ETB: "*Il y en a qui me demandent de les aider, parce que ils nous voient comme des personnes qui sont un peu génies par rapport à eux, mais on est normal.*"

[Bu12a, 08.02.2010]

PB: "From the point of view of the relationship with teachers, did becoming lab manager change **the relationship with your colleagues?**"

Juvenal: "I'd say that it **changed positively**. (...) Because from time to time they call us to troubleshoot or a teacher can come here and ask for explanations, or even while walking to the library... We can chat at ease with them about computers, that's what I call positive."

(...)

Gustave: "Sure enough it is flattering because **if someone calls you to repair his machine, and that you succeed, that feels good**. And sometimes we manage, the people at the library they know it, at the administration as well, the technical director knows it well, the director too. In all these services we have troubleshot their PC several times, we burn the CDs for free, they appreciate that too."

[Bu212a, 01.03.2010]

Pierre, ETB Lab Manager: "There are those who ask me to help them, car **they see us as people who are a little geniuses compared to them**, but we are normal."

[Bu12a, 08.02.2010]

The culture-specific ways in which they exploited this increase in status was initially invisible to me (see Section 7.6.2). However, when asked specifically about the financial gain that their role had generated, answers varied greatly.

8.4.4 Earning money

Lab managers differed in their willingness and capacity to exploit the lab and their computer skills for financial gain, either directly or by leveraging the increase in social capital.

<i>Original transcript</i>	Motive	Translation
<i>Zéphirin, gestionnaire ETS: "Moi je dirais que je gagne pas." ((Rire))</i>		<i>Zéphirin, ETS Lab manager: "I'd say I earn nothing."((Chuckles))</i>
<i>PB: "Pourquoi?"</i>		<i>PB: "Why?"</i>
<i>Zéphirin: "À compter le carburant que j'utilise pour venir chaque fois ici,</i>		<i>Zéphirin: "Considering the fuel I consume to come here every day,</i>
<i>ce que je gagne c'est rafraîchir ma mémoire, c'est tout.</i>	Learning	what I earn is to refresh my memory, that's all.
<i>Si non en termes d'argent, je gagne pas</i>	Not money but...	Otherwise in terms of money, I don't earn.
<i>Seulement je suis en contact avec les gens,</i>	...Social capital	Only, I'm in touch with people.
<i>et mes connaissances je les mets à jour chaque fois,</i>	Learning	and my knowledge, I will update them every time.
<i>si non en termes de gain, si je trouve quelque part où je peux aller, je pars. Parce que avoir 20% [de la location des salles], à voir combien je m'investi ici..."</i>	Money	Otherwise, in terms of gain, if I find a place where I can go, I leave. Because earning 20% [of the lab rental revenues], considering how much I invest myself in this..."
<i>[Bu82a, 16.02.2010]</i>		<i>[Bu82a, 16.02.2010]</i>

This excerpt captures the interrelationship between the three motives. First, he mentions the importance of personal intellectual gain. Then he refers to the social capital dimension: his role allows him to meet many people who showed a certain deference to him. Moreover, it is plausible that being in contact with many external lab users would increase the chance to be signalled some earning opportunities in town. The benefits of these opportunities were paid directly to the manager. In contrast, the share of lab revenues due to the two managers (10% each) had to go through the school administration and was perceived as

less certain and not readily available. Much depended on the trust relationship existing between the lab managers and the school.

The following excerpt illustrates how financial gain and reputation were feeding into each other:

<i>Original transcript</i>	Motive	Translation
<p><u>Pierre, gestionnaire ETB</u>: “D’abord avant la formation j’étais nul parce que je ne savais pas manipuler la machine, mais avec la formation actuellement ça a été beaucoup bénéfique parce que j’ai déjà réparé pas mal de machines dans divers bureaux en dehors de l’école, s’il y a une panne quelques part on fait appel à mes compétences, et là j’y vais faire du secours et</p>	Social capital	<p><u>Pierre, ETB lab manager</u>: “For a start before the training I was a zero because I could not manipulate the machine [computer], but with the training now it has been very beneficial because I have repaired several machines in several offices outside the school, if there is a trouble somewhere they rely on my skills, and there I go help out and</p>
<p>quelques fois je gagne un peu d’argent.</p>	Money	<p>Sometimes I earn a little money.</p>
<p>J’ai déjà réparé au moins 20 machines. Cela a été très bénéfique et aussi ça m’a donné une certaine notoriété dans l’entourage, parce que à part moi et Fabrice il n’y a pas d’autres personnes qui peuvent intervenir en tant que ‘mainteneur’. Ca c’est primo...”</p>	Social capital	<p>I’ve already repaired at least 20 machines. That has been very beneficial and it has also given me some notoriety in my milieu, because besides me and Fabrice there is nobody else who can intervene as ‘maintainer’. This is cool...”</p>
<p><u>PB</u>: “Est ce que quand même le bénéfice par rapport à ce point c’est quelque chose de remarquable par rapport à ton salaire?”</p>		<p><u>PB</u>: “Is the benefit significant, relative to your salary?”</p>
<p><u>Pierre</u>: “Par exemple quand je répare une machine je peux exiger 50.000BIF alors que je viens de passer dessus une heure. Dernièrement j’ai réparé 2 machines à la Commune, on m’a fait 100.000BIF, c’est presque la totalité de mon salaire et j’ai fait cela pendant 3 ou 4 heures, c’est vraiment bénéfique.</p>	Money	<p><u>Pierre</u>: “For example, when I fix a machine I can ask 50.000BIF and I’ve only been working one hour. Lately I’ve been repairing 2 machines at the Municipality and I earned 100.000BIF: it is almost the entirety of my salary and I did that in 3 or 4 hours. It is really beneficial.</p>
<p>J’ai aussi gagné de l’estime, quand il y a quelqu’un qui dit «Je ne peux pas réparer cela, il faut faire recours à Pierre» cela aussi est très intéressant.</p>	Social capital	<p>I’ve also earned in esteem: when there’s someone who says: «I cannot repair this, I have to resort to Pierre», that also is really interesting.</p>
<p>Disons aussi au niveau du service ça</p>	Learning	<p>Let’s say also that when at school</p>

m'a été bénéfique parce que je peux apprendre quand je veux et ce que je veux, c'est un bénéfice à ne pas négliger."

[Bu12a, 11.02.2010]

I can learn when I want, what I want: it is a privilege not to be overlooked."

[Bu12a, 11.02.2010]

Three managers were open enough to declare they could gain two to three times their salary, on average, by providing computer-related services to their community, with a record of eight times in the most productive month. This is particularly significant given the high attrition rates of teachers in Sub-Saharan Africa (Mulkeen *et al.*, 2007, pp. 12–15). Yet, in a *Relatio* economy the technological expertise asset *also* implies social liabilities:

Pierre: "Si par exemple on te voit avec un kit où il y a des CD, on peut dire: «Tu viens de gagner quelque part, tu peux nous faire à boire!» A la burundaise on peut dire que c'est une jalousie qui n'est pas prononcée. Tu vois, par exemple, tu réponds à un coup de téléphone, quelqu'un te téléphone: «Est-ce que tu peux venir?», à ce que vous répondez, si tu dis «Oui je viens», là ils disent: «Est-ce que vous allez au moins avoir un peu de sous pour ce service?» Il y a un service gratuit qu'on offre à quelqu'un et ils pensent que vous avez gagné de l'argent."

[Bu123, 02.11.2011]

Pierre: "If for example they see you with a kit containing some CDs, they can say: «You've just earned something somewhere, you can offer us a beer». Á la burundaise, we can say that it is an envy that it is not pronounced. You see, for example, you pick up the phone, someone calls you up: «Could you come?» If you reply: «Yes, I'm coming!», there they will think «Isn't he going to gain a little money for that service?» It's a free service you're offering to someone and they think that you earned some money."

[Bu123, 02.11.2011]

This excerpt confirms both the increase in status manifested by the request (see Section 7.3.3) *and* the importance of the symbolic association between technological expertise and wealth in the collective imaginary.

8.5 When rhetoric meets practice

Chapter 5 revealed that the apparent consensus amongst stakeholders was seriously challenged once €4M worth of new technological equipment was dispatched to the schools. The technological determinism it bore did not uphold the promises, which caused great disappointment and frustration in the *developers'* quarters (see also Hosman, 2010, p. 51):

Firmin: "Et partout, dans toutes les écoles, on me dit la même chose: «Je veux une deuxième salle multimédia, Kiremba veut une deuxième salle, ils savent déjà où il vont la mettre! (...)

Firmin: "And everywhere, in every school, they tell me the same thing: «I want a second computer lab.» Kiremba wants a second computer lab, they already know

Pour quoi faire? Je ne sais pas. A l'ETP Gitega m'ont demandé la même chose et je lui ai dit: «Mais tu n'es pas honteux de me demander une deuxième salle alors qu'il n'y a rien: vous ne savez déjà vous occuper à entretenir une première salle et elle est entièrement vide en permanence, en plus vous demandez une deuxième... Vous êtes incohérents, incohérents!»

[Be2b, 23.11.2011]

where to put it! (...) **To do what? I don't know.** At ETP Gitega they asked me the same thing and I replied: «But aren't you ashamed of asking me a second computer lab when there's nothing: you don't even know how to take care of the first one, which is entirely empty all the time, and on top you ask for a second one... **You are incoherent, incoherent!**»

[Be2b, 23.11.2011]

All the European staff involved in the sub-project shared Firmin's longstanding puzzlement, myself included, although the intensity and tone of emotional responses varied. It is from this puzzlement and frustration that the final research question of this study was distilled:

RQ₄: Why do school computer laboratories set up in the sub-project often remain unused, even though all stakeholders agree that they are indispensable?

The main reasons for such lack of use were presented in Sections 5.3.2, 5.3.3 and 5.3.4) and are summarised in Table 5.4. What follows are three micro case studies to illustrate how the elusive symbolic dimension presented earlier may help understanding why the lack of use did not affect the demand for computer labs by Burundians, who kept asking for more.

8.5.1 The ghost computer lab timetable

“One of the most incomprehensible facts is why smart people like the tech director, the principal, do not make an effort to optimise the use of this infrastructure: they complain they need more PCs and they don't even know how many hours a week the computer lab is open and used. Often they stay unused and when you point that out, people offer all kind of justifications to explain why they didn't take the time to work out the computer lab schedule from the general school schedule.”

(8th Ethnographic Snapshot, post-fieldwork Nov. 2011)

The *developers* involved in the computer lab project stressed the importance of such a timetable and insisted that one be officially approved and displayed. Yet, this request was repeatedly negated through the following strategies:

1. “We are working on it, but is not yet ready because...” followed by unconvincing justifications implying that there was no real need for it

“as the overall school timetable is hanging on the bulletin board by the principal’s office door.” (Juvenal et Gustave; Pierre; Jean-Baptiste et Emile)

2. Upon my insistence in asking for a specific facility timetable, not the general school timetable, the lab manager replied *“...we’re still expecting some new teachers to be assigned to our school.”* (Pierre) — which appeared to be a totally unrelated excuse.
3. On my third request for clarification, Pierre admitted to be guilty of negligence and committed to do it soon, so that I had no more reason to insist. I had to wait and trust it will be done, as I was not in the hierarchical position to enforce it, even less so when I came back as a researcher a year later and the timetable was still missing.

This was a very typical conversational strategy our Burundians interlocutors to have *us, developers* ‘drop the case’. With respect to the lab timetable, it was frequently applied, also by school principals: Théophile at ETB and David at LTK.

Faced with such an ‘irrational resistance’, *developers* resorted to dispositional explanations such as *“Burundians are simply incapable of planning and organising”*. In the light of my data, I hypothesise that lab managers preferred not to have a written and public schedule, leaving them more discretion to manage the lab. The kind of advantages described earlier would have been undermined by a written schedule that once approved, becomes official, allowing lab users to complain if the schedule was not respected. Instead, no timetable meant flexible working opportunities that may not have been possible had the schedule been publicly visible. In addition, access and use of the lab depended on *ad hoc* negotiations based on verbal agreements between users and the manager. These negotiations represented an obvious marker of power for the lab manager. Moreover, a written schedule equated the lab manager’s activities to regular school service, yet unpaid. Instead, the lack of a schedule and the resultant sense of autonomy maintained his effort in the realm of voluntary work he had control over. Together, these experiences reveal the autocratic management of the lab, lamented by Firmin:

Firmin: “Une fois qu’ils sont gestionnaires de la salle, ils se croient supérieurs au directeur. Ils se donnent une importance incontournable au niveau de l’école. C’est pour cela que ce jeu des

Firmin: “Once they are lab managers they consider themselves superior to the principal. They attribute themselves an exaggerate importance within the school.

clés des salles multimédias, c'est le sceptre du roi. Je détiens le pouvoir parce que j'ai le Savoir."

[Be2b, 23.11.2011]

It's for that reason that game around the lab keys: **it's the sceptre of the king**. I have the power because I hold the Knowledge."

[Be2b, 23.11.2011]

Such autocratic management is coherent with the mentality as described in Section 7.6.1. Understandably, this was not easy to admit during my interviews, as it would have exposed the lab manager to the accusation of exploiting the lab for his sole benefit. Such *social undesirability* with respect to my expectations as their former trainer may justify at least in part, why I heard so many bizarre explanations as to why a written lab timetable was missing. Nevertheless, the degree to which lab managers enacted this attitude depended on the uniqueness of each school. This bespeaks the combination of:

1. The school cultural milieu (urban, peri-urban, rural).
2. School management style and relationships with superiors.
3. Personal ambitions to serve the school versus opportunities for socio-economic advances.

In urban (Bujumbura) and peri-urban (Gitega) contexts, the cost of living is high and the pressure on managers to complement their salary was higher than in rural areas (Kiremba, Bubanza, Kiganda, Karuzi, Gifuruzi). Moreover, the Ministry of Education had not officially established the Computer Lab Manager role. Therefore, each school was responsible for negotiating the time devoted to the lab, by acknowledging that managers' workload as teachers had to be lessened to allow them to maintain the lab, as in the case of ETB. At LTK, the principal hired an extra person, paid by the Ministry of Education, to alleviate the two lab managers' workload. They were initially threatened by this new colleague, but the principal managed the tension wisely. In such cases, the trusting relationship between the school leader and the lab managers ensured greater accountability, although not as stringent as *developers* wished. In contrast, the following is an example of how the new computer lab altered the delicate power balance in one school, the ETSA Gitega.

8.5.2 The case of **École Technique Secondaire des Arts (ETSA)**

Five months after the end of the formal period of training, one of ETSA lab managers, Jean-Baptiste, was 'promoted' to become principal of École des

Science Sociales (ECOSO), a neighbouring school that had no computer lab — thus nullifying his training and leaving the ETSA lab in the hands of his colleague, Emile. Officially, this was the result of ECOSO principal being removed due to misconduct: the bishop supervising the school offered the position to ETSA principal, Claude, who refused (since his wife was already working as the principal's secretary at ECOSO, making it incompatible). Instead, he proposed Jean-Baptiste, who accepted. From the outside, this transfer appeared impeccable. However, when interviewing these three people during my second period of field research, it emerged clearly that Jean-Baptiste did not want to move to ECOSO: he had been trained in arts in France, he was by far the most educated member of the school staff and he loved his job there. He had already been ETSA principal for several years in the 1990s, a position he had left to become provincial superintendent, thus supervising as many as 80 school principals of all levels. In the aftermath of the 2005 election, he had been removed from that prestigious position by the new ruling party yet had managed to go back to his dear Arts school as technical director. His artistic competence, his experience and his charisma were a constant threat to the status of the new ETSA director, Claude, whose diploma was in sports education. This fragile equilibrium broke when Jean-Baptiste became the co-manager of the computer lab: his status grew, and so should his salary have done, since the internal regulation of the lab he had written and that had been approved by the school board established the allocation of 30% of all income generated by the computer lab to lab managers. Thanks to this extra income, Jean-Baptiste would have ended up earning more than Claude, thus blatantly subverting the normal hierarchy at ETSA. Indeed, Claude never opened the bank account for the computer lab revenues, nor paid the lab managers, thus fuelling the tension. In this light, Jean-Baptiste's appointment as ECOSO principal dissolved this latent conflict for supremacy exacerbated by the new computer lab.

8.5.3 The paradox of the symbolic value of ICTs

In the *developers'* camp, the symbolic values attributed to technology by *developees* were either ignored or dismissed as a disturbance obfuscating its 'real' value, that is *a means to do something*. However, when a delegation of Belgian members of Parliament visited ETS Kamenge, together with Burundian government officials, the technological equipment was always on display:

Zéphirin, gestionnaire ETS: "On arrangeait les choses de façon de montrer les ateliers et les salles multimédia en train d'être utilisées, si possible."

[Bu82c, personal communication, 29.01.2014]

Zéphirin, ETS lab manager: "We would arrange things so as to show the workshop and the computer labs being used, whenever possible."

[Bu82c, personal communication, 29.01.2014]

This is in accordance with Hollow's (2010, p. 277) caustic remark:

"The requisite 'young smiling child with laptop' photo can then be taken in order to appease donors and ensure continued funding."

Computer labs as contested territories

The link between ICTs, status and power manifested itself glaringly in the conflict that arose between Firmin and myself. In 2008 Firmin had endorsed my candidature to become APEFE technical assistant for informatics, a position he had held *ad interim*. Formally, we were both technical assistants, thus I considered myself as his peer: I was in charge of computer training, he was in charge of electricity training. However, Firmin considered himself as my supervisor and expected me to carry out the Computer Labs sub-project as he would have done. Moreover, until my arrival, he was *the computer expert* within the AESTP project: any troubleshooting, updating, upgrading related to computers, staff's included, was conferred on him. Thus when I joined AESTP a territorial conflict gradually developed, for multiple reasons.

My initial sub-project design implied a migration to Linux and OpenOffice.org as the office automation suite, in order to bypass the licensing problem inherent to proprietary software such as Windows, AutoCAD, Multisim, and Photoshop. This plan had several consequences:

1. It suggested a new operational mode within the project: structural decisions pertaining AESTP's, the BEET's and the schools' information systems had to be openly discussed and justified, thus calling for a collective negotiation over Firmin's arbitrary control.
2. As an unfamiliar solution in the Burundian context, Linux and OpenOffice.org required a leap of faith from both *developers* and *developees*. This raised concern among the Belgians around the consequences of a potential failure with respect to the CTB — not Burundian beneficiaries:

Cédric: "We cannot be the lonesome knight: if the rest of the Belgian Technical Cooperation is going for Windows in their support to the ministries, we cannot be different and push for something other than Windows."

(Ethnosnapshot 2, 15.12.2008)

3. It incarnated an approach privileging lawfulness over Firmin's pragmatic approach:

Firmin: "Graduates applying for a job will be tested on their proficiency on Microsoft software, nobody uses OpenOffice here. We have to prepare them for this job market (...) Before the end of the AutoCAD course I've taught [using pirated copies], four participants out of ten had already been hired by construction companies and were feeding their families."

(Ethnosnapshot 7, August 2009)

The debate between these two approaches was thorny as both sides had valid arguments: the discussion is still unabated (Walsham & Sahay, 2005; Kanter *et al.*, 2012; Heath, 2014; Pearce, 2012; Yildirim & Ansal, 2011). This generated a palpable tension among the sub-project stakeholders.

4. My plan threatened AESTP expatriates' self-confidence on computer mastery, as it would have required them to learn a new user interface, thus being as equivalent a beginner as their Burundian counterpart, which was unusual and therefore uncomfortable. Most relevantly, Firmin was faced with the prospect that Burundian lab managers would end up knowing the information system in their labs better than he did, thus undermining his control. Moreover upon my departure after the sub-project he would have had to troubleshoot issues that were beyond his then expertise.

Hence the plan I had conceived and that had been officially approved was not merely technical: it severely impacted the power relationships within the project. Firmin and I failed to reach agreement and settle the conflict. Our calls to superiors for a final word about our respective roles went ignored. For the entire duration of the sub-project, computer labs were *contested territories*. Installing and promoting training on certain software packages over others was a symbolic indication of 'who was the guy in charge', in spite of the decisions formally approved during the sub-project meetings. Such interpersonal conflict inevitably affected Burundian lab managers who refrained from taking sides, but were also confused about whose directives to follow. This resulted in a hybrid information system architecture that was very laborious to maintain,

although in hindsight, Firmin and I agreed that my original plan would have probably been too complicated to follow through for most trainees (see Section 5.3.4).

8.6 Conclusion

In sum, there was a stark contradiction at the *interface* (Long, 2001) between the upper echelons of the AESTP hierarchy on the one hand, both Belgian and Burundian, for whom the symbolic value of ICTs *was* leveraged upon to gain status, power or save face, and the lower ranks, for whom the instrumental value of ICTs was the only acknowledged value. Explicitly to recognise the symbolic dimension of ICTs would have implied the disavowal of the second tenet of *technological imperative* and openly engage with issues of power relationships and culture.

8.6.1 Questioning the question: not all uses are born equal

Reiterating what has been discussed in this chapter, the *technological imperative* was a shared rhetoric across stakeholders. From the ethnocentric point of view of *developers*, Progress is brought about by technology, which in turn is nourished by the idea of constant improvement (Ellul, 1954; Feenberg, 2009). This meta-premise was unquestioned: diffusing this model is the very *raison d'être* of *developers*, for mainstream Development is to the so-called developing countries what Progress is to the so-called developed ones (Macamo & Esperia, 2013). Yet, if one considers this parallel a hegemonic attempt to smuggle a culture-specific framework as universal, thus undermining the very possibility of radical critique, one must acknowledge that *Progress*, *modernity* and *credibility* are moral concepts and therefore dependent from cultural context in which ICTs are deployed (see Dourish & Mainwaring, 2012, p. 139; Van Stam, 2013b). It follows that ICTs cannot be considered *just* a means: the presumed *universality* inscribed in the *technological imperative* blinded us from perceiving the coherence of *developees'* behaviour, and deafened us from listening to their narratives around the computer labs, denying the symbolic dimension of ICTs as a legitimate one, and ultimately impairing learning (Chambers, 1997, pp. 128-129; Krauss, 2012). More radically, the very meaning of the terms *uses*, *misuses* and *underuses* is to be deconstructed and reassembled within the hosting culture as a distinct 'web of significance' (Geertz, 1973, p. 4). What I ethnocentrically termed *misuses* and *underuses* reflects a dramatic underestimation of the

complexity of the ‘cloud of meaning’ constructed around the computer lab and a lack of ecological thinking.

While the non-neutrality of technology has been acknowledged by many scholars after Ellul’s (1954) seminal work (Bijker *et al.*, 1987; Hutchins, 1995; Latour, 1992; MacKenzie & Wajcman, 1985; Mantovani, 1995; Williams & Edge, 1996; Winner, 1986), in Gomez’s (2013, p. 15) literature review on the recent evolution of ICT4D research, terms such as *culture, context, meaning, symbol, status*, are absent. Moreover, only 16% of the 948 papers reviewed there are focused on the social aspects of technology. This study has aimed at nudging this imbalance.

Following, the concluding chapter pulls together the multiple strings laid out so far and seeks to consolidate the ‘lessons learned’ from this “pracademic” endeavour, spanning from “the somewhat ethereal world of academia as a scholar and the pragmatic world of practice” (Walker, 2010, p. 1; cited in Van Zyl, 2013, p. 29) so as to make a substantial contribution to the epistemic communities comprising the ICT4D/E space.

9 Conclusions: towards an intercultural understanding of bilateral cooperation in ICT for education

9.1 Introduction

This thesis has offered an interpretive lens to examine the complex ecosystem formed around an ICT4E project in Burundi. Theoretically, its ecological perspective constitutes an epistemological critique to the mainstream approaches in both the Aid effectiveness and ICT4E/D debates, which are still dominated by a mechanistic mindset. In contrast, this research calls for greater attention to be paid to the context, especially to intercultural communication intricacies.

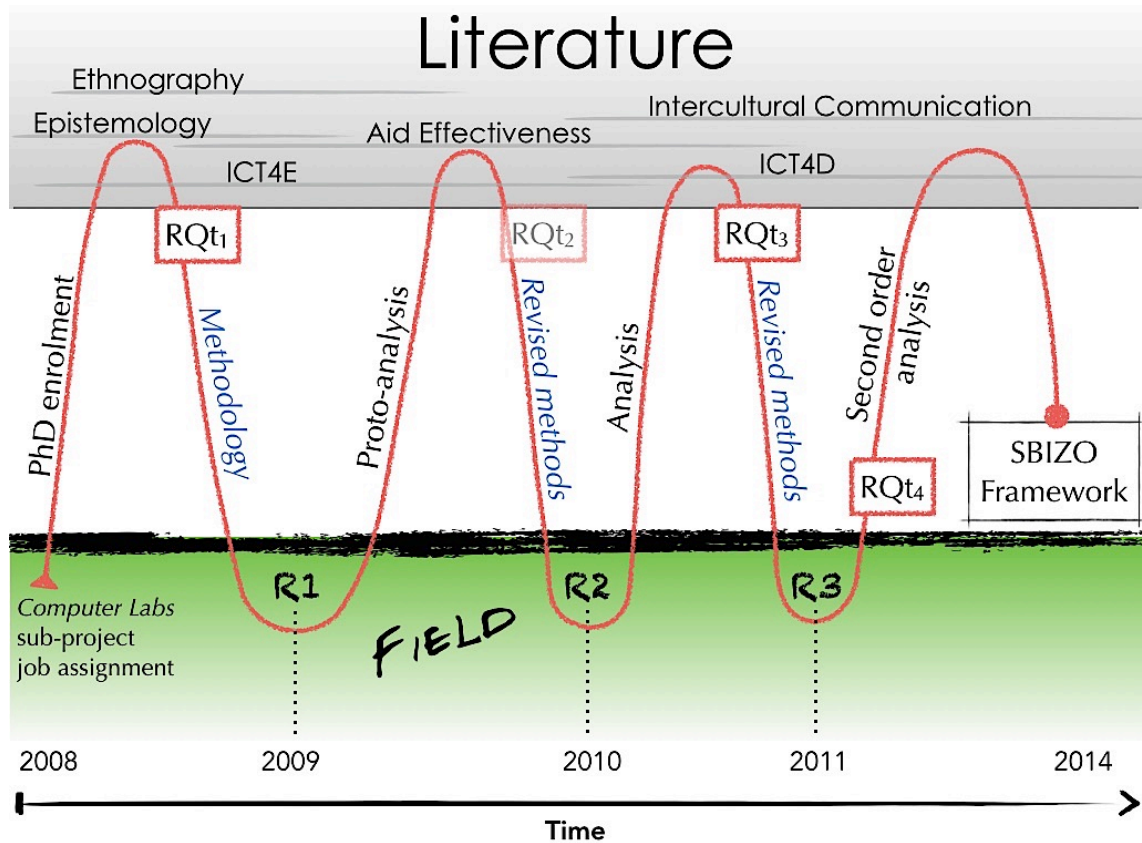
I reproduce Figure 1.2 below to facilitate the reader while recapitulating my research journey.

Born in the field, within a Belgo-Burundian bilateral cooperation project in support of vocational education in secondary public schools, the research focused on its ICT for Education component, the Computer Labs sub-project: the installation of 10 computer laboratories and the training of teachers to manage them effectively. An ethnographic study, it started by asking a very basic question:

<p><i>RQt</i>₁: Why should Burundian teachers bother adopting ICTs?</p>

Or: “Are *we*, the *developers*, not merely imposing a new kind of *chalk* — the computer lab — which is electric, costly, fragile, cumbersome — just because *we* think it is better?”.

Figure 1.2. My research journey. Key: RQt_# = Research Question. R_# = Field Research round. The timeline scale is merely indicative.



Source: Author.

The data generated during the first round of field research as participant observer, together with the relevant literature, solicited a broadening of the research scope, shifting the focus on the interpersonal and intergroup dynamics between *developers* and *developees* (RQt₂ in Figure 1.2). Following the preliminary analysis of the data generated during the second round of field research, my original research question was refined as follows:

- RQt₃:**
- a. Why are ICT for Education project so fragile?
 - b. What is the role play amongst the project stakeholders?
 - c. What is the instrumental and symbolic value of ICTs for different stakeholders?

The first analysis of the whole corpus of data further sharpened the focus of the research around this complex question:

RQt₄: Why do school computer laboratories set up in the sub-project often remain unused, even though all stakeholders agree that they are indispensable?

This question is composed of two sub-questions, which have been analysed separately:

- a. *Why do computer labs often remain unused?*
- b. *Why does the demand for computer labs remains strong, especially amongst Burundians, despite their underuse?*

After the synopsis of the four analytical chapters addressing these questions (5, 6, 7 and 8), this final chapter summarises the four main ‘contributions to knowledge’ coming out of this research journey — or rather ‘to knowledge *building*’ (Burawoy, 1998, p. 28). Indeed, in accordance with my socioconstructionist epistemology, the extent to which these contributions may nourish the current discourses on Aid effectiveness and ICT4D/E will constitute the ultimate value of this work. The main conceptual contributions of the thesis is a critique of the mainstream epistemological approach to both ICT4D/E and to bilateral cooperation at large, leading to the development of an alternative approach, termed ecological, pivoted on intercultural awareness and contextual sensitivity. The theoretical and pragmatic outcome of such approach is **the SBIZO framework** (see Section 7.7 and Figure 7.25).

Embedded in this alternative approach are three main methodological contributions, namely:

1. The *archaeology of critical incidents*: an analytical framework to ‘reverse engineer’ critical incidents in order to unearth their underlying premises as well as their impact on the interpersonal relationships in terms of mutual attributions, trust and collaboration.
2. The creation and use of *ethnographic snapshots* as a self-monitoring, reflexive tool to handle the tension between emic and etic, action and research.
3. The *leveraging of the so-called ‘right brain’*, that is the analogical, visual, emotional, synchronic thinking, through the use of

-
- a. Net-Map as a participatory field method in various forms and its critique.
 - b. Visual analogies to portray the relationship between Belgian Cooperation and Burundians.

Further, this concluding chapter reflects on the limitations of this thesis, with a note on my personal transformation throughout this journey from practice towards academia. I then suggest possible directions for future investigations, to conclude with some comments on the confluence between Aid effectiveness and ICTs, as my contribution to scholars and practitioners engaged in the wider field of ICT4D.

9.2 Synopsis of analytical chapters

Chapter 5 presented an overview of the evolution of the research setting over a three year period (November 2008 — November 2011) at four different analytical levels (Figure 2.7):

1. **Nano** — investigating what had happened *within* the newly installed computer laboratories.
2. **Micro** — investigating the *management issues* faced by the school administration with respect to the new facility.
3. **Meso** — investigating the *Computer Labs* sub-project and its follow up at the national level within the larger AESTP project.
4. **Macro** — investigating how the Belgo-Burundian institutional relationship evolved.

My research focused on the *micro* and *meso* levels, much more directly accessible than the *nano* and *macro* levels, where I could not gather robust empirical evidence. This analysis of the data I had generated throughout the three rounds of field research (see Table 4.2) allowed the creation of an inventory of 29 *critical incidents* which were clustered into two categories: *misuses* and *underuses* of the computer laboratories. Such incidents were analysed one by one in an attempt to unearth the mismatch of premises originating the incidents, as well as their consequences on the relationships between stakeholders, by applying the Critical Incident Analysis (CIA)

framework described in Section 4.6.3. As a backdrop, a third category, *uses*, was created to cluster the data about those implementations of the computer laboratories in some schools which were deemed satisfactory by all key stakeholders.

In order to answer the first sub-question, *Why do computer labs often remain unused?*”, the results of this analysis were consolidated in Table 5.4 and compared against evidence from other literature on barriers and facilitating factors for ICTs uptake in schools, with specific reference to Bingimlas’ (2009) framework (see Table 5.5). This process highlighted the crucial importance of the distinctive contextual conditions found in Burundi (however common to other Sub-Saharan countries) in shaping the use, misuse or underuse of the computer laboratories.

Chapter 6 developed an interpretive framework to account for the *negative consequences of critical incidents on the relationships between stakeholders*, particularly between Belgian and Burundian ones. Drawing on the longstanding tradition of Attribution Theory (Heider, 1958; Weiner, 1986; Gilbert & Malone, 1995; Tomlinson & Mayer, 2009), it suggested that when faced with such incidents humans experience both emotional discomfort and cognitive puzzlement and naturally strive to restore ease and coherence as fast as possible to regain predictability and reduce vulnerability (Figure 6.1). To this aim they may resort to *dispositional* or *situational* explanations for the puzzling behaviour constituting the incident. The choice of the kind of explanation tend to be unconscious and depend on a configuration of factors, such as *controllability*, *stability*, and on the level of *trust* existing between the parties involved. It presented evidence from the case study to show that what I defined as the *dispositional route* tends to be the most commonly chosen, in accordance with the *fundamental attribution error* construct (Ross, 1977). To this aim the observer may resort to cognitive heuristics such as *stereotypes*, which were particularly elicited by the strong salience of the *ingroup/outgroup* distinction between white Belgians and black Burundians. Rooted in the data, the framework coupled the attribution of a *structural deficiency* with a *paternalist* attitude, while a *bad faith* attribution was confronted with a *patronising* attitude and reinforced control. These two attitudes were recurrent in Belgians’ narratives about Burundians and were in turn eliciting a set of complementary

reactions by the latter:

1. **Complacency**
2. **Submission**
3. **Manoeuvring**
4. **Boycott**
5. **Conspiracy**

These were embedded in the framework as *meta-reactions*, that is reactions to the Belgians' reactions to the Burundians' actions. Such meta-reactions were ordered along a continuum, from the most acquiescent (*complacency*), to the most confrontational (*conspiracy*) (see Long, 2001; Mosse, 2005; Villarreal, 1994). Bateson's old notion of *schismogenesis* (1935; see also Hobbs, 2011) was 'revamped' to account for the degradation of the communication and collaboration which in the worst cases led to a 'miniature cold war' (see Rich & Craig, 2012) between the AESTP project leaders and some of their Burundian counterparts.

Chapter 7 extends the framework to explore the alternative *situational route* — the attributional process by which one refrains from rushing to conclusions and embraces the puzzlement as a stimulus to stretch one's understanding of *the Other*. This stance is rooted in the axiomatic belief that *human behaviour is always coherent* and consequently, whenever a critical incident shatters such coherence one has to acknowledge the *insufficient potency* of the interpretive grid adopted. The complete **SBIZO framework** is presented visually in a diagram (Figure 7.25). The acronym stands for *Stop, Breathe In, Zoom Out*, thus inviting to react to critical incident by pausing, relaxing and extend one's own outlook to include *history* and *culture* (Burawoy, 1998), as well as the *relationship* between observer and actor by displacing oneself into a 'third-eye observation point'. Seconding post-colonialism scholars (Kapoor, 2008; Nandy, 1989b) and Development studies critical voices (Simon, 2003; Chambers, 1995) I argued that the Belgo-Burundian *coloniser-colonised* relationship transmuted into *developers-developpees*, remaining fundamentally asymmetrical and heavily skewed, with the Belgians still firmly holding the upper hand. Such relationship as been depicted by Burundian interviewees with at set of analogies:

-
1. **Father and son**
 2. **Teacher and pupil**
 3. **Beggar and benefactor**
 4. **Runner and pulled**
 5. **Driver and car**
 6. **Handshake**

These analogies were compared with the ones proposed by European interviewees, either involved directly in the AESTP project or in similar Belgo-Burundian projects implemented by CTB:

1. **Two people handshaking/hugging**
2. **Teacher and pupil**
3. **A child and his tutor at the swimming pool**
4. **“Je t’aime, moi non plus” — a locked-in marriage**

While the first two overlap significantly, the third and especially the fourth analogies suggest a structurally different take on the relationship in point, by configuring it as a *co-dependency*: both parties are *prisoners* of a relationship upon which their very existence rests that is therefore *pretended* to be good and harmonious. Instead, both have grown hopeless to radically change the relationship for the better and prefer to tolerate it while trying to get the most out of it for their own benefit: a *double-bind* (Bateson *et al.*, 1956; Rich & Craig, 2012). This perspective was then triangulated with the analysis of the net-maps produced along the way, buttressing it further.

The zooming out process concluded by selecting and analysing two *cultural matrices*, namely *Ubuntu* — human interdependence (Section 7.6.1) and *Relatio* — the economics of favours (Section 7.6.2), both emphasising the pivotal importance of social interconnectedness, which I argued to be distinctive of the Burundian mentality and squarely different from the European mindset as enacted by the AESTP project staff. Three tactics are suggested to *leverage* critical incidents so as to strengthen the relationship and rebuild trust:

-
1. **Explicitly to renegotiate those relationships.**
 2. **Sincere apologies.**
 3. **Taking risks together**, thus *making 'myself' vulnerable first and staying open* until the Other does the same.

Finally, the SBIZO framework is applied to a specific critical incident as an exemplar.

Chapter 8 zoomed back into the pragmatics of the Computer Labs sub-project, focusing on the cross-cutting role of ICTs in the intercultural dynamic illustrated previously. The pervasiveness of the *technological imperative* rhetoric is illustrated in the data — across time, places and stakeholders, on both sides of the bilateral cooperation.

Developers' ideas around the proper use of the computer labs are compared with *developees'*, highlighting a remarkable difference: what to the former is almost exclusively a means *to do something*, to the latter is primarily a means *to be someone*. By looking at the symbolic value of ICTs into the picture, many critical incidents became much more intelligible: indeed computer labs lay often underused and yet more of them were requested, because their status-booster power depended only marginally on the capacity of their owners to actually *do* office automation tasks and the like. Their main instrumental value depended mostly on the *enhanced prestige* their owners would gain from them, which could in turn be leveraged for relevant worldly objectives, such as an income increase for themselves and a livelihood improvement for their families.

Ironically, the very symbolic value that had no legitimacy in the *developers'* official narratives when dealing with their Burundian counterparts, was leveraged upon when the new computer labs were visited by Belgian members of Parliament and high Burundian political authorities — only to confirm its cross-cultural importance, albeit neglected. This is in line with the current research on the aspirational value of ICTs, carried out both in Africa (Mercer, 2006, Kuryian & Kitner, 2009) and in India (Pal, 2008, 2012; Pal *et al.* 2009).

9.3 Broken promises or broken *premises*?

Main theoretical contributions

9.3.1 The *ecological* approach

The main original contribution of the thesis is meant to be *epistemological*. A critique of the mainstream Development approach, especially in bilateral cooperation, has been presented in Section 2.2, where I claimed that an objectivist epistemology still permeates most interventions. It entails a mechanistic worldview, favouring *things* over *people* (Chambers, 1995), *planners* over *searchers* (Easterly, 2007), official policies over field practices (Mosse, 2005; Quarles van Ufford, 1988), tangible outcomes (e.g. distribution of new equipment) over sound processes (e.g. long-term training and mentoring) (Ramalingam, 2013), quantitative measurements over qualitative appraisals, cushy reports and plans over frank talks — “façade-planning” (Quarles van Ufford, 1988, p. 18), spending imperatives over timely investments, short-term visibility over long-term sustainability (Quarles van Ufford, 1988, pp. 16–25; Hollow, 2010) — where sustainability’s supreme concern is the survival of the *development agent* (Brunello, 2010, p. 235). Through the evidence I presented in Chapter 5, 6, 7 and 8, I argued that this intervention logic is flawed and often contradicts the declared goals of the project. This is amplified when it comes to ICT4D/E projects, since such a neopositivist epistemology is greatly amplified by the *technological imperative* — the dominant rhetoric which holds ICTs as inherently good, culturally neutral and indispensable and that is intensively marketed by the digital industry (Nederveen Pieterse, 2009 Ch. 13). Such supply-driven logic, unsuited to the local context and needs (Rogers, 2010; Unwin, 2009) as well as an unrealistic emphasis on rationality, irrespective of the local mentality and culture are well established reasons for ICT4D project failures (Dodson *et al.*, 2012; Walsham & Sahay, 1999). In his landmark article, Heeks’ (2002, p. 107) considers the political dimension and conceptualises the following hard-soft gaps (see

Table 9.1). However, in Heeks’ argument, the ‘hard’ rational and the ‘soft’ political seem to be implicitly associated with the ‘industrialized’ and to the ‘developing’ respectively. Instead, this research has shown how the industrialized stakeholder’s practice was also ‘soft’: ultimately *developers* too are human beings with emotionally charged conflicting agendas, interacting according to an alchemy of private interests and ingroup obligations

(institutional loyalty, national pride, ethnic belonging) suspended in a web of interpersonal relationships. What varies is the degree of legitimacy of the explicit expression of such motives, which is culture-specific (see Chapter 7).

Table 9.1. Hard-soft gaps in ICT4D projects.

	“Hard” rational design	“Soft” political actuality
<i>Information</i>	Emphasis on standardised, formal, quantitative information	Emphasis on contingent, informal, qualitative information
<i>Technology</i>	A simple enabling mechanism	A complex, value-laden entity: status symbol for some, tool of oppression for others
<i>Processes</i>	Stable, straightforward, and formal; decision outcomes as optimal solutions based on logical criteria	Flexible, complex, constrained, and often informal; decision outcomes as compromises based on “power games”
<i>Objectives and values</i>	Formal organisational objectives	Multiple, informal, personal objectives
<i>Staffing and skills</i>	Staff viewed as rational beings	Staff viewed as political beings
<i>Management systems and structures</i>	Emphasis on formal, objective processes	Emphasis on informal, subjective processes
<i>Other resources: time and money</i>	Used to achieve organisational objectives	Used to achieve personal objectives

Source: Heeks (2002), p. 107.

Aid workers are constantly striving to conciliate the “discourse of rationality” (Heeks, 2002, p. 107) with the actuality of the practices in the field. In Long’s terms, they are marking (2001, 65) an *interface*:

“Interfaces typically occur at points where different, and often conflicting, lifeworlds or social fields intersect, or more concretely, in social situations or arenas in which interactions become oriented around problems of bridging, accommodating, segregating or contesting social, evaluative and cognitive standpoints.”

Thus Cédric faced the difficult task of motivating his actions within the rationalist logic of the project plan when talking with its Burundian counterpart, while having to comply with the political pressures coming from

the higher echelons of the Belgian hierarchy which could not be openly expressed precisely because they belonged to a 'soft' political logic:

"Bilateral aid programs are not conceived and implemented in a political vacuum. Indeed they are subject to considerable domestic pressures from political and commercial interest groups in the donor countries. And bilateral aid agencies can be subject to the same kinds of disbursement-driven dynamics as multilateral development banks, creating incentives for staff to be approval-focused rather than result-focused." (World Bank, 1998, p. 8)

The greater the disconnect between approval-focus and result-focus, the harder it becomes to perform such acts of "accommodation" (Long, 2001), "brokerage and translation" (Callon, 1986; Mosse, 2005; Stanforth, 2006) while maintaining individual and organisational credibility. Thus, with Long (2001, p. 69):

"Continued interaction encourages the development of boundaries and shared expectations that shape the interaction of the participants so that over time the interface itself becomes an organised entity of inter-locking relationships and intentionalities."

At the sub-project level, Firmin and I were at another interface and had to stay loyal to the *developers'* rationalist rhetoric when interacting with our Burundian counterparts, while having to comply with Cédric's sudden decision changes ensuing from opaque negotiations occurring at higher hierarchical levels. The *technological imperative* as a shared rhetoric transfigured this dialectic space like a copious snowfall transforms the landscape: under its 'modernity spell' everything looks smooth and candid, and consensus is easy to build around it. Yet when one starts walking through the snow, underlying holes, cracks and roots (critical incidents) reveal how treacherous is the walk. This research has shown how in such conditions it is advisable to develop *agility* rather than brute force, *elasticity* rather than horsepower. In other words, insisting on imposing the "hard" logic implied a dire cost in terms of interpersonal relationships and trust that undermined the durability of the project. This is not to suggest a stand-still-and-not-walk position or a post-developmental, neo-luddite stance. Rather, with Simon (2007, p. 211), it endorses Peet with Hartwick's (1999, p. 198) critical modernist attitude: "Criticize everything, convert critique into proposal, criticize the proposal, but still do something".

Nevertheless, these critical voices remained a minority in the scholarly reflection on the dismal abundance of *broken promises* in ICT4D: it has limited the reverse-engineering of failures only up to the project design and planning instead of proceeding further upstream to the recondite mesh of implicit premises that originated them — *developers'* worldviews. Increasingly, holistic

approaches are adopted to encompass the multifaceted complexity of ICT4D (Best & Kumar, 2008; Hosman, 2010; Kemppainen *et al.*, 2014; Van Zyl, 2013), yet this has not been sufficient to foster an epistemologically different approach (Best, 2010, p. 51; Gomez, 2013, p. 15). Indeed, ICT4D stakeholders are a very diverse ensemble: computer scientists, policy makers, social scientists, economists, engineers, together with teachers, community health workers, civil servants, bureaucrats, agronomists, illiterate peasants, children... Not only all of them rely on very different disciplinary domains, they also come from cultural worlds possibly even more far apart: *they inhabit different lifeworlds* (Long, 2001), even though they share vast portions of their *habitat*. I claim that an epistemology is needed that resists the temptation simplistically to equate *lifeworlds* and *habitat*, and one that acknowledges that the boundaries between the two become visible only upon trespassing. I called this epistemological approach *ecological*, for it implies sourcing our explanatory metaphors (Johnson & Lakoff, 1980; Lakoff, 1993) in the realm of *living beings*, striving for their survival and fulfilment, instead of mapping our understanding of an ICT-dense social setting onto the mechanism typical of the realm of *things* (see Section 2.4.2). Moreover, this approach brings the focus onto the *organic interrelationships* between elements recursively interlinked in circular circuits comprising an *ecosystem* (Section 2.4.2), the state of which is stochastic (Ramalingam, 2013). For example, thinking of all project stakeholders as distinct animal species sharing a habitat as a guiding analogy, may discourage ethnocentric assumptions such as “we are all human beings thus we are all the same” (Barna, 1994, p. 337). Instead, it may foster an attitude of “active listening/observing”, being prepared to confront misunderstandings and embarrassment, and yet leverage it as precious occasions for learning and for gaining a better understanding of the Other, by developing humour and flexibility (Sclavi, 2003). In addition, given its focus on interrelationships, ecological thinking may constitute an intercultural bridge between a scientific, ‘Western’ mindset and African one, rooted in *Ubuntu* and *Relatio*, and possibly even more so for those stakeholders whose lifeworld revolves around the rhythms of Nature, like rural populations.

If one accepts this approach, then critical incidents may serve as the doorway to unearth the mismatching premises underlying the many broken premises.

9.3.2 The SBIZO framework

The SBIZO (*Stop, Breathe In, Zoom Out*) framework (Figure 7.25) constitutes both the theoretical and pragmatic contribution of this research. Rooted in the well established theoretical tradition of Attribution Theory, it advances it by transposing it into a new territory: Development practice. Its theoretical value lies in the combination of the two competing epistemological approaches — objectivist/essentialist/neopositivist versus socio-constructionist/emergent/ecological — associated to the dispositional and situational routes respectively. Unless one abides by a radical relativism whereby all knowledge is solipsistic, any diagram is *positive* in that it constitutes a statement about ‘reality’, even if it was to state its impermanence. Thus the conceptualization of critical incidents as emotional discomfort plus cognitive puzzlement is justified primarily by its pragmatic value: it is an experience many can relate to quite easily, and this holds for the simplistic *dispositional-situational* dichotomy as well. Nevertheless, while one can use the situational route to explain the dispositional one by conceiving dispositions as the ‘consolidation’ of classes of isomorphic interactions repeated over time, it is not possible to explain the situational through the dispositional without drifting into *culturism* and racism (Holliday *et al.*, 2004). Moreover, the situational route recursively explains the SBIZO framework itself as the emergent outcome of a historical process — my research — embedded in a complex intercultural mesh of power relationships, in accordance with the “extended case method” (Burawoy, 1998, p. 15):

“...like any other science, reflexive science has to perform some reduction. In this instance the reduction is an aggregation — the aggregation of *situational knowledge into social process*. Just as survey research aggregates data points from a large number of cases into statistical distributions from which causal inferences can be made, reflexive science collects multiple readings of a single case and aggregates them into social process.”[emphasis in the original].

In sum, the situational route appears to be theoretically more *potent* than the dispositional — albeit less travelled. Indeed, dispositional attributions were the most common, in accordance with Ross’s (1977) *fundamental attribution error*, because:

1. They are cognitively less demanding, not requiring any effort to search for missing information about the Other’s universe of coherence.

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2. They are emotionally less disturbing, not requiring to stay in the discomfort generated by the critical incident.
 3. They belong to the “paramount reality”, which is everybody’s everyday epistemology (Berger & Luckmann, 1966, p. 24):

“Compared to the reality of everyday life, other realities appear as finite provinces of meaning, enclaves within the paramount reality marked by circumscribed meanings and modes of experience. The paramount reality envelops them on all sides, as it were, and consciousness always returns to the paramount reality as from an excursion.”

In other words, it takes a deliberate and conspicuous effort to contemplate the possibility of a reality other than one’s own, and then zoom out to try to embrace it. Thus the pragmatic value of the SBIZO framework is to be simple enough to be understood by any practitioner without requiring any explicit discussion about objectivist versus socioconstructionist epistemologies, and yet, through the evidence presented in Chapters 6, 7 and 8, to favour the situational route as less disruptive and more conducive to mutual understanding, trust and collaboration. Nevertheless, further investigations are needed to substantiate these claims across different contexts.

9.4 The *archaeology of premises*: methodological contributions

“Anyone who has carried out longitudinal field research (...) will know that the central problem is dealing with complexity; first of all, capturing the complexities of the real world, and then making sense of it. For some there is no release from the overwhelming weight of information, from the task of structuring and clarifying, from the requirement for inductive conceptualization. The result is death by data asphyxiation — the slow and inexorable sinking into the swimming pool which started so cool, clear and inviting and now has become a clinging mass of maple syrup.” (Pettigrew, 1990, p. 281).

This issue, highlighted by Pettigrew (1990) was particularly challenging in my research for three main reasons:

1. The duration of my field research.
2. The intensity of my involvement in the project I studied.
3. The difficulty of visualising implicit and possibly sensitive knowledge about stakeholders’ relationships, both interpersonal and institutional.

Longitudinal case-studies are particularly challenging (see Section 9.7), yet they also allow for an evolutionary understanding of processes that is hardly achievable otherwise (Pettigrew, 1990). Interpretive research monitoring an ICT4D/E project over a three-year period and a year beyond its official conclusion, appears to be rare (Madon, 1992; Vannini, 2014; Van Zyl, 2013; Walsham & Sahay, 1999). This has been a distinct benefit of undertaking a PhD on a part-time basis.

Following, I present three methodological contributions that stemmed from this long process, which are potentially transposable to other contexts.

9.4.1 Reverse-engineering critical incidents: the CIA framework

The Critical Incidents Analysis (CIA) framework presented in Section 4.6.3 constitutes an original contribution of this thesis. Indeed, other scholars have tackled this task before (Goffman, 1959, 1974; Garfinkel, 1967; Coulon, 1987; Pedersen, 1995; Archer, 1986). However, my framework (Table 9.2) combines the meta-data about the incident with an assessment of critical aspects on four analytical levels (Table 9.2).

Table 9.2. Meta-theoretical classification of the CIA framework.

Analytical level	Typology	Specification	Relevant references
<i>First order</i>	Cognitive Emotional	Design-Reality gap Intensity of guts reaction	(Heeks, 2002) (Archer, 1986)
<i>Second order</i>	Attributional	Responsibility-Accountability gap	
<i>Third order</i>	Communicative	Attitude (Mm /= mM) Relational consequences on trust Pragmatic consequences on 'reality'	(Patfoort, 2001) (Watzlawick <i>et al.</i> , 1967) (Tomlinson & Mayer, 2009)
<i>Fourth order</i>	Assessment and ranking	Affective Cognitive Behavioural Ecological Heuristic	(Eagly & Chaiken, 1993) (Bateson, 1972)

Source: Author.

The first order analysis pertains the rupture perceived in a person's own worldview: a crack in her/his fresco of reality. The second order instead is meant to highlight both the person's explanatory style in relationship to the author(s) of the puzzling behaviour, and the gap between the *rhetoric* of ownership and the *actuality* of accountability. Theoretically ownership and accountability should coincide: if they do not, as when developers fix a problem

that arose after the official handover, it questions the quality and completeness of the handover process. Cédric's "40.000BIF solution" was an attempt to patch a problem for which the school administrations were supposedly responsible, yet were not made accountable. The third order targeted *how* the communication was performed, focusing on its relationship component and its pragmatic consequences, beyond the diplomatic rhetoric, in a way that is resonant of Fairclough's (1995; see also Thompson, 2004) Critical Discourse Analysis, although not in such detail. Finally, the fourth order provides a set of criteria for ranking critical incidents by identifying five dimensions of their significance in a fairly innovative way. I contend that such framework could be easily transposed to other intercultural settings to assess its heuristic value.

9.4.2 Ethnographic snapshots

The multiplicity of roles I played besides researcher (i.e. project manager, trainer, information system designer, broker for ST Foundation) further amplified the complexity of both social interaction and its subsequent analysis. I addressed this challenge in two ways:

- a. *Striving to integrate my researcher's with my project manager's goals, as in the case of recruitment essays and the intergroup Net-Map generated during the first round of field research.*
- b. *Conceiving and using the ethnographic snapshots.*

While inspired by the ethnographic tradition focusing on the self (Chang, 2008; Coffey, 1999; Van Maanen, 2011), ethnographic snapshots as a form of recurrent self-interview were an *invention*. They served well as a viable compromise between my professional and academic duties and allowed me to capture the evolution of my perceptions over time. The final diachronic comparison between them provided more structure than a free-flowing diary, thus restraining my observation scope, yet questions were sufficiently open to integrate detailed accounts of critical incidents I had experienced and jotted down on the spot. Nevertheless, should I use this method again, I would reduce the number of questions in order to allow for a faster completion process: 35 questions implied a long time to be answered, with the result that the snapshot would expand over some days and become a less 'instantaneous' account.

9.4.3 Leveraging of the so-called ‘right brain’

Research in neurophysiology has long ascertained a functional specialization of our brain hemispheres (Semmes, 1968; Paivio, 1990, 2013). According to McGilchrist (2009, 2011) the left hemisphere is primarily analytical, focused, and capable of abstraction, whilst the right hemisphere is synthetic and synchronic, capable of grasping ‘the big picture’, i.e. the context and its interconnections. McGilchrist (2009, 2011) argues that ‘Western’ cultures have been favouring the ‘left brain’, reductionist and mechanistic, over the ‘right brain’, intuitive and *ecological*. The latter works with patterns of relationships, detecting isomorphism and analogies and is capable of producing metaphors. In this research I deliberately leveraged the ‘right brain’ to address the third challenge — visualizing both explicit and implicit knowledge about the relationships between stakeholders — in two ways:

1. Asking to represent the relationship between the CTB and its Burundian counterpart with a visual analogy.
2. Using Net-Map.

The use of metaphors has a fairly long tradition: already Nietzsche said that “Truth is a mobile army of metaphors” (Johnson & Lakoff, 2008, p. 1). Lakoff and Johnson’s seminal work unveiled how pervasive and powerful metaphors are in human sense-making (Johnson & Lakoff, 1980; Lakoff, 1993) — see Section 4.5.3. Despite their richness and insightfulness, metaphors as well as analogies are rarely contemplated by qualitative research methodologists as potent research devices (see Tracy, 2012, p. 213 for an exception). In my research I decided to leverage them to explore the relationship between the Belgian Cooperation and Burundians in an attempt to bypass the inhibitions associated with the official diplomatic rhetoric and to obtain a holistic description of such relationship, possibly richer than what the interviewee had in mind. Indeed, condensed in an analogy are multiple implicit narratives, substantially claiming an isomorphism between two domains: one known and one unknown. The interviewer’s task is to cross-check such claim by making *a selection of those narratives* explicit in the interview. Yet the polysemy intrinsic in any analogy always exceeds the self-monitoring capacity of the interviewee, who is bound to convey more meaning than s/he could ever do by answering a homologous non-analogical question. With an analogy, the latter stands to the former as a string to a fabric.

Indeed, both Europeans and Burundians were generally hesitant to come up with a visual analogy, especially those particularly self-conscious about their public image. However, once they did, their descriptions were very effective narrative generators, since the interviewee had to spell out the meaning in order to reduce the analogy intrinsic ambiguity. Hopefully Sections 7.3 and 7.4 represent an invitation to increase their use in research settings.

A situated assessment of Net-Map as a field method

In a similar vein, when used in one-to-one interviews, the Net-Map method leveraged the gap between the self-consciousness of their drawing and of their speech: often net-mappers were drawing *more* than they were actually comfortable explaining afterwards. Those moments of slight embarrassment were precious indicators of critical spots in the *ecosystem* they were representing, and invited for further investigation.

In group instances, having to agree on a single ‘reduction of reality’ — the actual net-map — net-mappers were forced to make their implicit knowledge explicit to justify why this or that link had to be drawn, or how tall an influence tower should be. This would have not come out as spontaneously in a focus group, because of the lack of a shared artefact around which to negotiate an official version of reality — something much less evanescent than words.

Since Net-Map was invented only recently (Schiffer, 2007), there was a paucity of literature to refer to when applying the method in my research setting. Consequently, it was while using it in its different forms that I could appreciate its advantages as well as its shortcomings. This reflexive analysis of the method shaped the ensuing analysis of net-maps, as it helped me to highlight its most significant contributions to the wider sense-making process. Table 9.3 summarises the advantages and disadvantages of the method in my specific setting.

The comparative analysis of the net-maps (see Section 7.5.1) revealed a number of ideal requirements: possibly two trained facilitators (one in charge of the discussion, one note-taker), constantly questioning each map element (stakeholder, link, influence, goals) of a well definable social setting. Given my constraints as a sole researcher, this increased its use as a narrative generator technique rather than as a reliable *map* of the research setting. Yet in this regards it was a powerful tool — one which I recommend.

Table 9.3. Situated assessment of the Net-Map technique variations used in the research.

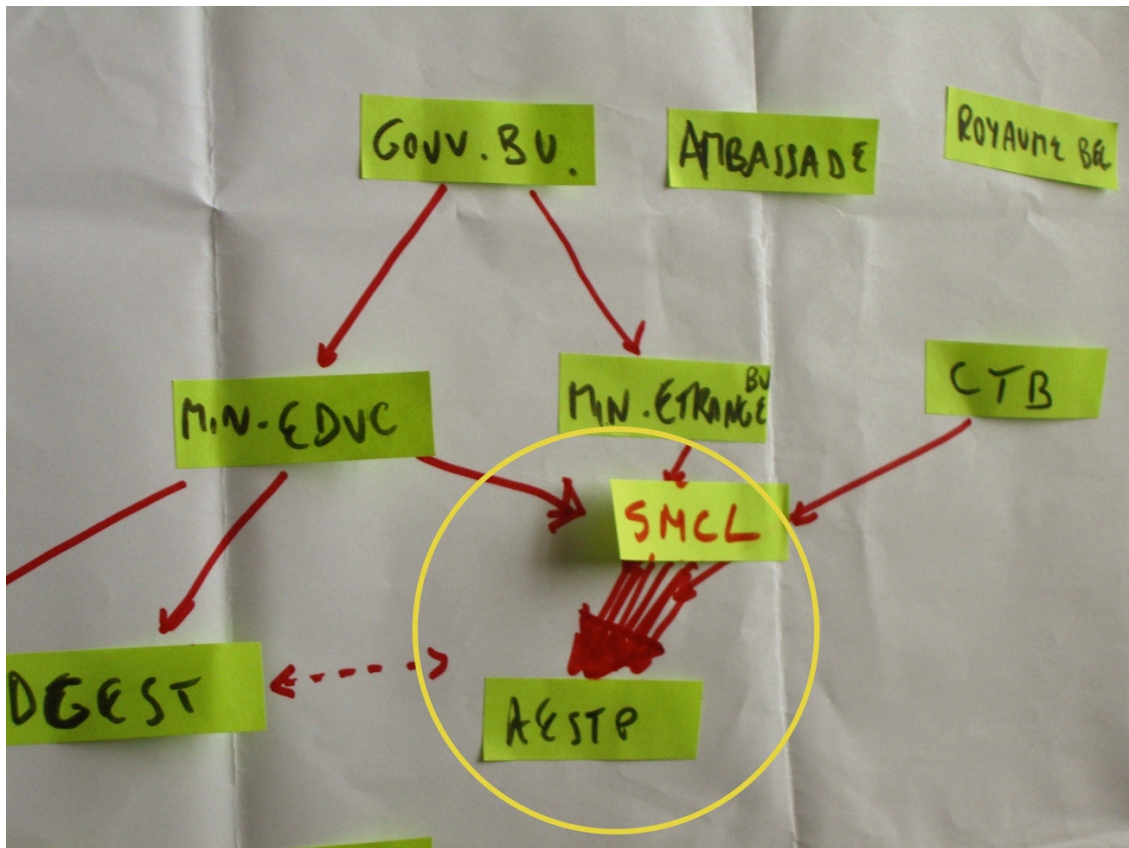
	Advantages	Disadvantages
<i>Multi-group, self-facilitated</i>	<ul style="list-style-type: none"> • The groups could discuss in their mother tongue (Kirundi). • There was no direct interference by the facilitator, hence less complacency and more confidentiality. • Multi-groups accommodated more people in less time. • Comparing the maps between groups triggered a rich discussion 	<ul style="list-style-type: none"> • The groups encountered difficulties in interpreting Net-Map instructions and steps. • The lack of a facilitator implied less control over the process, and therefore less focus on the problematic spots and relationships. • The researcher missed the development of the narrative and there was no chance to ask for clarifications along the way, thus hindering the comprehension of the final map.
<i>Single group, one facilitator</i>	<ul style="list-style-type: none"> • The facilitator could contain the discussion around the themes that are more relevant to the research questions, exploring tensions and observing which topics were most debated. • The facilitator could observe the group dynamics among the net-mappers. This is an insightful proxy of the dynamics within the group beyond the exercise. 	<ul style="list-style-type: none"> • The group had to speak a language understandable for the facilitator (French), thus their thought process was not the same as if they had been speaking Kirundi among themselves. • As recommended by Schiffer (personal communication), the optimal set up would imply two facilitators: one silent observer and note-taker, the other actively moderating the discussion among participants. This was not possible in my case and the handycam was a puny surrogate of a note-taker.
<i>Single net-mapper/interviewee, one facilitator/interviewer</i>	<ul style="list-style-type: none"> • Those interviewees who accepted to do a Net-Map instead of a regular interview got so involved that they prolonged the interview to up to three hours. The facilitator's efforts were only aimed at steering the conversation and to contain digressions. • Drawing and visual thinking activate different thinking modes and prevent the respondent to rely on ready-made answers. • The net-mapper's self-consciousness and control over his/her hand was much less refined than over verbal feedback, thus less vulnerable to political correctness. • During each step in the process, net-mappers were implicitly requested to provide increasingly sensitive information. The gradualism of this process sometimes helped to reach increased levels of confidentiality. 	<ul style="list-style-type: none"> • The technique being unknown and somehow mysterious, Net-Map may require high commitment, trust and availability. • The minimum duration to complete a Net-Map is 90 minutes. This is a considerable time commitment to be asked of an interviewee. • During each step in the process, net-mappers were implicitly requested to provide increasingly sensitive information, from simply listing the stakeholders, to declaring their agendas, and assessing their relative influence. This delicate escalation required high levels of trust and confidentiality.

Source: Author.

Nevertheless, three recurrent tensions arose across these applications of Net-Map:

1. *Synchronic versus diachronic.* Net-mappers tended to blend a *snapshot* description of the links relative to the Computer Lab sub-project with more *permanent* descriptions. This extended the time span to include dynamics of the larger AESTP project. It was almost impossible to set and maintain a clear timeframe throughout the process as it would have stiffened it excessively.
2. *Actors as individuals versus actors as organisations.* Different net-mappers adopted different degrees of granularity: some specified actors as individuals, while others considered the organisations as actors. It was then unclear who in the organisation was fostering or hindering the project. This also made it harder to compare the maps to get to a consolidated net-map capturing multiple stakeholder perspectives, as I had initially planned. This was further complicated by my double role as Net-Map facilitator and as former project manager. Indeed, in only one case was my name placed on the net-map as an actor, whereas for all the others the net-mapper preferred to use my organisation's name (APEFE), thus preventing any possible embarrassment.
3. *Ideal versus actual.* It was hard for both net-mappers and me as the facilitator to maintain the focus on the mapping of the *actual* situation, and not mix it with the *ideal* situation according to the formal documents. This was evident in one instance (Figure 9.1) in which the net-mapper stressed the violated hierarchical relationship between the local supervisory committee (SMCL: Structure Mixte de Consultation Locale) including the top Burundian and Belgian authorities and the AESTP project management unit. The net-mapper used a thick red arrow silently yet vibrantly to express how things *should have been*. Indeed, AESTP project managers (Cédric and Michel) made decisions autonomously, excluding him. This was despite the fact the SMCL (of which he was a member) had the higher authority.

Figure 9.1. The graphical expression of the violated hierarchy between Structure Mixte de Consultation Locale (SMCL) and AESTP project management unit, by Aristide, the General Director of Vocational Education (DGEST).



Source: Author (Net-Map, 26.02.2010).

In sum, this thesis dared to craft and explore innovative methods to address the research problems at hand, which could possibly serve as inspiration for other researchers confronted with similar challenges.

I now turn to the implications of this research for Development practice.

9.5 Implications for Development practice

“The problem, as Pritchett and Woolcock put it, is of “skipping straight to Weber”, that is, transferring from place to place principles of bureaucratic rationality, which carry with them institutional mythologies that conceal the fact that in reality institutional solutions “emerge from an internal historical process of trial and error and a political struggle” and that *part of ‘the solution’ is to hide this fact.*” (Pritchett & Woolcock, 2004, p. 201 ; cited in Mosse, 2011, p. 7) [italic mine].

This quotation is very much in line with the rationale of the SBIZO framework, in that it counterposes a supposedly ahistorical rationality with the historicity

of it as a political phenomenon. The former goes hand in hand with the objectivist essentialism of the dispositional route while the acknowledgement of the historical and political — i.e. relational — dimensions are akin to the situational one. Moreover, the authors' final remark (italicised) implies zooming out from an objectivist worldview to be able to appreciate its eminently *idiographic* nature, albeit widely dominant across places and for a considerable time span.

9.5.1 Implications for Aid effectiveness

As illustrated in Section 2.2.1, structure, style and terminology in the Aid effectiveness landmark documents to which the AESTP project had to conform, namely the Paris Declaration (DAC, 2005) and the ensuing Accra Agenda for Action (UN, 2008), were still bearing that hegemonic spirit, whereby 'Western' bureaucratic rationality is portrayed as Rationality — the one and only. Indeed, even though the evaluation commissioned by the CTB at the closure of the AESTP project (October, 2010) was co-authored by a Belgian and a Burundian auditor, its Annex 1.9 states that the time allotted for "briefing, debriefing and reporting in Europe was eight days for the Belgian and zero days for the local expert" (Van Baren & Ndayishimiye, 2010, p. 56). This seems clearly to indicate that the leadership in the writing of the report was Belgian, and it was written for a Belgian audience. The language, its structure and criteria are Eurocentric, despite the claimed aspiration for equality of bilateral cooperation rhetoric. Should an intercultural perspective be taken seriously into account, it would make sense that the evaluation report would be presented to both the relevant national authorities, Belgian and Burundian, by the two co-authors together, in order to allow for their different cultural perspective to be considered. Table 9.4 compares the evaluators' recommendations with the five principles of the Paris Declaration (DAC, 2005) and with Walton and Heeks (2011, p. 5) analysis of the five key factors accounting for ICT4D project failures. Their list was preferred over others' (Best & Kumar, 2008; Khang & Moe, 2008) as the best compromise between ICT4D-specific and general Development project factors.

Table 9.4. Comparison between the AESTP project self-evaluation, the Paris Declaration and Walton and Heeks' (2011) on the process approach to project management.

CTB provisional evaluation (2010)	Paris Declaration (2005)	Walton and Heeks (2011)
A lack of integration of the APEFE into the project, which responded to the needs of the final responsible, the CTB.	Harmonisation Donors-Donors	Lack of project leadership.
A training plan well structured	Alignment Donors-Partner Managing for results	Overly-rigid approach to project planning.
An institutional and organisational analysis before designing the project, including the inventory of local personnel's capacities.	Alignment Donors-Partner Managing by Results	Overly-rigid approach to project planning. A failure to learn. Lack of involvement with local institutions.
A more intense involvement of the local partner during the project design. One can achieve such intensification by introducing a trial period at the beginning of the implementation of the project. Such period has to be concluded by a "contract" between partners.	Ownership Alignment Donors-Partner Mutual accountability	Lack of beneficiary participation. Lack of involvement with local institution.

Source: Author.

The following is an analysis of each of the points in Table 9.4, in the light of the intercultural approach proposed in this research.

1. While harmonisation is generally referred to as being important in the coordination between different Aid providers, in the case in point it was lacking *within* the Belgian implementing organisations, namely the AESTP project and the APEFE. As illustrated in Section 5.3.1, two contrasting approaches towards the Burundian counterpart were enacted by the main *developers* actors: on the one hand Cédric and Firmin adopting a *command-and-control* management style, leaning towards a patronising attitude; and on the other Gilbert, Julie and myself promoting a rather paternalistic attitude, inclined to defend and justify *developees*. This affected the Computer Labs sub-project and

exacerbated the conflict between Firmin and myself (see Section 8.5.3). The incapacity or unwillingness to create a space for a transparent meta-communication (Schulz von Thun, 1997; Sclavi, 2003; Watzlawick *et al.*, 1967) about these different approaches in order to negotiate and settle them, resulted in an ambiguous leadership of the sub-project, which further impacted the already frail trust relationship with the Burundian interlocutors.

2. and 3. Both these points denote an enduring faith in the *ex ante* planning by the evaluators, in line with the dominant logic of the Paris Declaration (Easterly, 2007; Heeks, 2002). Implicit is the confidence on the command-and-control logic. This is highly controversial, as it may produce observable results in terms of material achievements (infrastructures), yet it is likely to damage the interpersonal relationships network in which such artefacts are supposed to be cultivated. It ethnocentrically assumes the cultural habit of planning as universally obvious and applicable, disowning any legitimacy to the indigenous logics (*Ubuntu* and *Relatio*) presented in Chapter 7 (Diallo & Thuillier, 2004; Latouche, 2000; Long, 2001; Mosse, 2005; Muriithi & Crawford, 2003; Van Stam, 2012a). The very idea of “an inventory of local personnel’s capacities” is problematic: while it positively recognises the need for a better knowledge of the pre-existing conditions, in order to go beyond ethnocentric assessments it should also check for those capacities that are relevant in the local culture, but invisible to the European untrained eye, such as dealing with uncertainty, negotiating or being a highly interconnected leader. Otherwise

“It is [then] but a short step to treating what has not been measured as not really real. Patterns of dominance are reinforced: of the material over the experiential; of the physical over the social; of the measured and measurable over the unmeasured and immeasurable; of economics over disciplines concerned with people as people.” (Chambers, 1995, p. 14)

If enacted, the *managing by results* attitude would restrain the space for *local improvisation*, considered a key success factor, in that only measurable skills would be taken into account, thus hampering local creativity (Heeks, 2002; Walton & Heeks, 2011). Nevertheless, the evaluators (Van Baren & Ndayishimiye, 2010, p. 33) praised the inventive “integration of the teachers’ and pupils’ learning process in

the renovation, construction, and installation activities, as it was the case with the implementation of a maintenance plan, *the installation of the computer laboratories, the rehabilitation of classrooms.*" (italics mine).

4. As illustrated in Section 2.2.1, local ownership is largely considered the key factor for project success and sustainability (Commission for Africa, 2005, 2010; DAC, 1996, 2005; Pearson, 1969; UN, 2008; World Bank, 1998). In this respect, the evaluators call for a more intense involvement of the Burundian counterpart. Further in the document they state (Van Baren & Ndayishimiye, 2010, p. 35):

"At the teachers level, we have assessed that their training needs a follow up, which was evident as they are not able to use all the equipment they have received. A good approach to support the sustainability of the initiative is the creation of a team in the computer labs, which includes a pedagogical advisor and two teachers/managers of the computer lab of each school".

With respect to the Computer Labs sub-project both Firmin and I strove to involve the beneficiaries directly in setting up their new facilities in order to foster ownership, with partial success, where computer lab managers felt confident enough to take care of the new facility, although in a few cases they abused their mandate, as illustrated in Section 8.5.2. Nonetheless, in hindsight, several Burundian interviewees lamented not having been listened to enough before and during the project:

David, directeur LTK: "Les burundais avaient vraiment très peu à dire, c'étaient les belges qui prenaient les décisions."

[Bu50b, 08.11.2011]

David, LTK principal: "Burundians had little say: it was the Belgians who made the decisions."

[Bu50b, 08.11.2011]

Aristide, directeur DGEST: "À un certain moment, il fallait laisser faire puis qu'il fallait que les constructions soient faites... Pourvu que ça soit fait, consulté ou pas. Tu es frustré mais pourvu que ça se passe..."

[Bu01b, 28.11.2011]

Aristide, DGEST Director: "At a certain point, we had to let them go ahead, since it we had to have the buildings built... Let it be done, consulted or not. You are frustrated, but as long as it's been done..."

[Bu01b, 28.11.2011]

And yet in late 2014, four years after the end of the AESTP project, Cédric's retrospective on sustainability was still focused on the *technical* layer — not the *relational*:

Cédric: “La plus grande déception c’est que ce qu’on a introduit n’est pas nécessairement perenne quoi, c’est à dire qu’ils n’appliquent pas toujours les mêmes procédures, les mêmes règles: cinq ans c’est pas beaucoup, il faudrait plus de temps pour former les gens à apprendre les procédures, à suivre des nouvelles règles, etc. Ce que j’ai constaté l’année passée [2013] c’est que certains directeurs avaient réalisé d’eux mêmes que c’était la bonne voie, surtout au niveau de la maintenance, par exemple, qu’il fallait maintenir les équipements, qu’il fallait regarder à l’environnement, installer des procédures pour l’environnement. Mais c’est seulement quelques écoles (...) 15-20%.”

[Be1c, 28.05.2014]

Cédric: “The biggest disappointment is that what we introduced is not necessarily durable, you see, that is to say that they don’t always apply the same procedures, the same rules: five years is not much! More time is needed to have people learn new procedures, to follow new rules, etc. What I observed last year [2013] is that certain principals had realised by themselves that it was the good way to go, especially for the maintenance, for example, that they needed to maintain the equipment, that they needed to consider the environment, set up some procedures for the environment. But it is only few schools, (...) 15-20%.”

[Be1c, 28.05.2014]

In contrast, Michel, the Burundian Intervention Director with whom he had been working side by side during the whole project, considered sustainability not a *technical*, but a *political* problem — i.e. a *relational* one:

Michel: “Hum... Je crois que le problème majeur se pose au niveau (...) **politique**. Problème politique pourquoi? Ecoute-moi, si on change de ministre pendant deux ans, au niveau de la continuité... Parce que le Ministre qui vient ne sait plus où les projets sur lesquels son prédécesseur avait insisté. Par exemple maintenant, avec mon ministre-recteur... C’est mon point de vue. Il devrait pouvoir dire: «Voilà ce projet AESTP est un projet qui a été piloté par un cadre qui est dans un collège de mes conseillers [l’interviewé même]. Pourquoi ne pas le renvoyer sur le terrain pour voir comment la situation se passe, pour faire un suivi, voir si on ne peut pas faire des propositions par rapport à la durabilité des... résultats.» C’est peut-être une proposition qui peut être utile. Quand tu m’as demandé ce qui se passe au niveau de l’après-projet: maintenant, je ne sais plus, parce que je n’étais plus sur le terrain.”

[Bu02b, 28.11.2011]

Michel: “Hum... I believe that the biggest problem is at the **political** (...) level. Why a political problem? Listen to me, if we change ministers every two years, in terms of continuity... Because the Minister who comes does not know the projects on which his predecessor has insisted. For example as it is the case now, with my current minister... It’s my viewpoint. He could be able to say: «Here it is the AESTP project, it has been directed by a civil servant who is member of my advisors committee [the interviewee himself]. Why not sending him in the field to check out the situation, to do a follow up, see if we can’t make proposals related to the sustainability of the... outcomes.» When you asked me what is going on after the project end: nowadays, I don’t know, because I wasn’t in the field again.”

[Bu02b, 28.11.2011]

These reflections further reinforce the importance of an ecological approach,

encompassing the context as an *ecosystem*, thus focusing on the relationships *between* stakeholders (see Michel, Bu02b), and between stakeholders *and* their environment (see Cédric, Be1c).

9.5.2 Implications for ICT for Education

Hollow (2010, p. 295) identified three omissions in the then current debate on ICT4E in Africa:

“The first is the assumption that education needs to change because of new technology; this is a problem of causality and misplaced determinism. The second is the notion that education in Africa is a blank slate to operate from; this is a problem of lacking historical and cultural awareness. The third is the associated naïvety surrounding the current educational context in Africa; this is a problem of limited knowledge, research and exposure.”

This study attempted to fill these gaps. It examined a relatively old technology, the computer laboratory. This is not as cutting-edge as tablets and smartphones to attract the interest of the ICT4D research community, yet it is still a common technology in thin-tech countries and schools. According to Gomez (2013, p. 15), the ICT4D community has been growing both in numbers and awareness, and sheer technological determinism is increasingly perceived as naïve:

“It is striking that almost half the literature studied (59%) exhibits a predominantly technological approach to the study of ICTD (either technical or technical with social implications), while only a smaller proportion (16%) exhibits a predominantly social approach (social or social with technical implications); nonetheless, the data shows a marked increase over time in technical with social implications.”

Through the analysis of the technological imperative rhetoric, I substantiated the risk of assuming a technologically deterministic approach, only to discover that not all stakeholders in a bilateral cooperation project share the premises underlying this rhetoric. Indeed, Development projects with an ICT4E component may well be led by non-ICT4E specialists for whom the computer lab still represent the archetype of ICTs in schools, hence the relevance of this study for practitioners.

Moreover, this research has stressed the importance of historical and cultural awareness, especially in a situation involving the former colonisers as *developers* and the ex-colonised as *developees* (Kapoor, 2008; Thompson, 2008). The research has highlighted the strong influence of the past in shaping current Belgo-Burundian relationships in everyday work and life, and how different their perceptions, expectations and experiences of ICTs can be. In particular, it pinpointed how invisible such differences are until ICTs are in place and ready

for use. As Garfinkel (1967) and Goffman (1959, 1974) illustrated eloquently, it is only when a social rule is broken that it becomes apparent — and at that point the intercultural relationship has already been established (see Section 2.6).

My analysis of some of these occurrences (*critical incidents* — see Chapter 5) revealed how the African *Ubuntu* logic (Kamwangamalu, 2004; Van Stam, 2012b) and *Relatio* economics (Latouche, 2003; Sheneberger & Van Stam, 2011) can affect the relationship with ICTs in schools. It underlined the importance of their symbolic value over their instrumental value, the latter of which was the only legitimate one for *developers*. Thus, this study calls for a wider scope in ICT4E projects — one that pays careful attention to the local context and seeks to understand the coherence behind the Other's behaviour rather than reacting according to one's ethnocentric standpoint.

Finally, in this study I have illustrated the complexity of the Burundian upper vocational education system, including four aspects that may be overlooked when the focus is too narrowly restricted to ICTs alone:

1. The *politicisation* of vocational schools. It was unusual for me as a European to observe schools as political outposts under the strong influence of the ruling party. It was particularly difficult to *read* such dynamics, as they were intermingled with oblique ethnic equilibria.
2. The role of *computer labs as disruptive sources of power* within a school context, empowering some, while disempowering others. The power distribution across each school's social network appeared to be dependent on the pre-existing relationships between school actors and therefore hardly predictable. Where the interests of principals, computer lab managers, teachers, pupils *and* the AESTP project staff could be aligned by effective leadership and management (LT Kirembe, EPC Kiganda, ET Bubanza and in 2011 also ITAB Karuzi and ITAB Gifuruzi), computer labs were reasonably well exploited. In contrast, where the school leadership was lacking (ETP Gitega) or the relationships among those actors conflicted (e.g. ETS Kamenge and ETSA Gitega), the new facility remained underused. This resonates with Latour's (1992) notion of *assembling* stakeholders' interests around a technological project throughout time as an emergent, contextual process occurring in the actor-network.

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3. Consequently, the crucial importance of *school leadership and management capacities* was emphasised. In particular, the role of principals as the main interlocutors of *developers* at the interface between their schools and the AESTP staff turned out to be essential. Those who possessed the political intelligence and emotional detachment to understand bilateral cooperation (ET Bubanza and LT Kiremba) took more advantage of the new facility, for the school *and* for themselves, in terms of status.
 4. The idea of an itinerant *teacher training* proved particularly effective to overcome novices' fear of ICTs (Medhi, Sagar, & Toyama, 2006) and to develop a long-lasting sense of ownership. Nonetheless, this implied extraordinary administrative and logistic effort on part of the AESTP project. The management of per diem and individualised transport refunds proved particularly challenging and occasionally strained the relationships between trainees, the trainer, and the AESTP project at large (see Chapter 6). On the Burundian side, this formula resulted in a significant disruption of the school routine that caused some complaints by principals, leading to an early suspension of the training by a month. Yet, the final ceremony in which trainees demonstrated their newly acquired lab management skills provided them with public recognition that boosted both their status and self-confidence.

In summary, this study advances research in the social implications of ICT4E initiatives, well beyond the restrained boundaries of the classroom where ICTs are introduced and argues that what happens *outside* the computer lab constrains the universe of possibilities of what may happen *inside* of it.

9.6 Intercultural communication, Attribution Theory and trust

Initially my research focus was on ICT use in education. However, throughout the research, it migrated from the use or non-use of computer labs to the broader *ecosystem* in which such labs were introduced. This widening of the focus of my inquiry was motivated by the recurrent problems related to computer lab *management* within the schools, rather than to technical issues. Most importantly, it was at the interface (Long, 2001) between the European AESTP staff and their Burundian counterpart that the most significant problems arose. Thus intercultural communication issues progressively gained the front

stage, leaving ICTs behind. In other words, the ICTs-related issues *within* the more powerful frame of the relationships between *developers* and *developees* within the bilateral cooperation interactional frameset. The evidence I provided aims at lifting the lens from the individuals to reframe their attitudes as their best available strategy to cope with a very stressful situation. Indeed, to ascribe both a paternalist and a patronising attitude to a person's bad faith would mean committing that fundamental attribution error that this study has tried to unveil. This is not to deny individuals' responsibility, but rather to distribute a larger share of it into the complex network linking actors, artefacts and the environment (Cole, 1998; Hutchins, 1995; Mantovani, 1995, 1998). The adoption of French as the official working language represents a telling example of such neglected biases.

9.6.1 Set apart by a common language

Generally, the working language in Development projects is that of the Aid providers. Very seldom Development workers in governmental cooperation are required or expected to learn the local language (Phillipson, 1997, p. 239):

“...speakers of dominant languages such as English and French tend to see the expanded use of their languages as unproblematic.”

In contrast, Colin (2008) quoted French poet Merleau-Ponty:

“Parler une langue c'est porter le poids d'une culture”³⁶.

From an intercultural perspective the use of French as a working language for Belgo-Burundian bilateral cooperation is problematic for at least four reasons:

1. It is the host who is expected to speak the language of the guest (Carpinelli, 2011, p. 34). Burundians' native language is Kirundi, a complex Bantu idiom. Its grammar and logic are very different from Indo-European languages and therefore difficult to learn for a European. Nonetheless, whenever a foreigner speaks a few words in Kirundi, this effort is greatly appreciated by Burundians who tend to assume a friendlier attitude.
2. In contrast, Belgian French symbolically manifests a durable form of cultural dominance by the former colonisers: it defines the symbolic universe within which the interaction can be and is played out

³⁶ Speaking a language is to carry the weight of a culture.

(Demorgon *et al.*, 2010; Fuglesang, 1982). Anything uniquely Burundian by default has no legitimacy in this space.

3. Native Francophone speakers have an undeniable advantage over second language ones in terms of ease and precision of expression. This reinforces the existing power asymmetry, which in turn reinforces and is reinforced by the cultural association between good French mastery, high status and intellectual achievement (Lugan & Fournel, 2009; see also Phillipson, 1997, p. 239).
4. Comprehension-wise, this asymmetry has an important consequence: both parties can never be sure to have understood each other, as their different cultural background cannot warrant a precise isomorphism between *signifier* and *signified*, the utterance and the underlying meaning. Yet, since both use the same words over and over they tend to grow overconfident that they mean the same thing: the French “*pain*” — bread — is literally translated as “*mokate*” in Kirundi, but symbolically and experientially, a better translation would be “*ubugari*”, which is the cassava dough that accompanies every Burundian’s meal as the bread accompanies every Belgian’s meal. “*Ordinateur*” — computer — has no translation in Kirundi, which makes it even easier to slide into thinking that Belgians and Burundians denote the same object and they *experience it* in the same way as well — in accordance with the technological imperative rhetoric. Chapter 8 analysed this issues in-depth, bringing in the aspirational value of ICTs as an insightful interpretive key to highlight the differences between the denotative and the connotative meaning (Maturana & Varela, 1980, p. 32) of ICTs for their proponents and their recipients.

In sum, while the use of French as the official working language is indeed a *passe-partout* to the huge Francophone community worldwide, it also constituted lopsided communicational ground, with Burundians on the disadvantaged side. A greater awareness of this fundamental *interconnectedness* or *social embeddedness* (Avgerou, 2008) may solicit a reordering of priorities in which *trust* becomes the utmost value to be preserved and cultivated. Further, a greater awareness of our biases and attribution processes may help pursuing this value, thus improving collaboration, conducive to better project outcomes.

9.7 Limitations of this research

If one embraces a socio-constructionist epistemology, it seems sensible to distil from the relevant literature those criteria that result in trustworthiness within the epistemic community of qualitative researchers. In this light, Yanow and Schwartz-Shea's (2006, p. 101) indication of *thick description*, *trustworthiness*, *reflexivity* and *triangulation* include a categorial mistake, since trustworthiness is the *result* of the other three criteria. Through their meta-analysis of qualitative research studies in social geography, Baxter and Eyles (1997, p. 512) seconded Lincoln and Guba (1985) in recommending four criteria: *credibility*, *transferability*, *dependability* and *confirmability* (Table 9.5). Considering geographers my epistemic community I will refer to those criteria to reflect on the limits of my research.

Table 9.5. Criteria for evaluation qualitative research.

Criteria	Definition	Assumptions	Strategies/practices to satisfy criteria
Credibility	Authentic representations of experience	Multiple realities Causes not distinguishable from effects Empathetic researcher Researcher as instrument Emphasis of the research endeavour	Purposeful sampling Disciplined subjectivity /bracketing Prolonged engagement Persistent observation Triangulation Peer debriefing Negative case analysis Referential adequacy Member checking
Transferability	Fit within contexts outside the study situation	Time and context-bound experiences Not responsibility of 'sending' researcher Provision of information for 'receiving' researcher	Purposeful sampling Thick description
Dependability	Minimization of idiosyncrasies in interpretation Variability tracked to identifiable sources	Researcher as instrument Consistency in interpretation (same phenomena always matched with the same constructs) Multiple realities Idiosyncrasy of behaviour and context	Low-inference descriptors, mechanically recorded data Multiple researchers Participant researchers Peer examination Triangulation, inquiry audit
Confirmability	Extent to which biases, motivations, interests or perspectives of the inquirer influence interpretations	Biases, motivations, interests or perspectives of the inquirer can influence interpretation Focus on investigator and interpretations	Audit trail products Thick description of the audit process Autobiography Journal/notebook

Source: Baxter and Eyles (1997, p. 512), adapted from Lincoln and Guba (1985).

9.7.1 Credibility

Although I strove to portray the context in detail, attempting to unearth people's implicit premises is a daring aim, especially when dealing with such a varied mix of cultures. As an Italian working in French with Belgians and with Burundians for whom this is a second language, and reporting in English, while relying mostly on Anglo-Saxon literature constitutes a long chain of translations and intercultural mediations, disposed to misunderstandings. Moreover, this prevented me from obtaining feedback from Burundian interviewees, whose English mastery was generally insufficient to understand my interpretation of their quotations.

Methodological triangulation aimed to ensure that I took into account all stakeholders' perspectives. This is precisely the rationale behind the Net-Map technique. However, this method is particularly time consuming and only in two instances could I use it twice with the same person during different field trips (see Section 7.5). Moreover, the research setting changed significantly over the three years (2008-2011), making it hard to carry out the field research as I had planned while in Europe. Many of the people included in the first field research were no longer involved in the project or even accessible in the subsequent rounds.

Bracketing was probably the hardest criterion to fulfil: my professional, academic and personal involvements were very intense since these three layers kept merging and diverging throughout the whole research (see Section 4.4.1). I agree with the authors that good faith is a moral imperative for any researcher and one should strive to be constantly mindful of one's own subjectivity through reflexivity. However, reflexivity is *ex post* by definition, while participant observation and empathy require to 'go with the flow' of interaction, to *feel*, rather than forcefully contain emotions for the sake of continuous self-monitoring. To strike a balance proved particularly difficult, especially in my conflict with Firmin. Moreover, it constituted both a stylistic and ethical challenge. With Walsham (1995, p. 78), I agree that

"Self-reporting faces the twin dangers of over-modesty and self-aggrandisement, and it is particularly difficult to steer a middle path between these two extremes."

In order to refrain from an excessively egocentric narrative plagued by confirmation and self-serving biases (Blommaert & Bulcaen, 2000, pp. 455-456), I discussed my early interpretations with my informants in Burundi on several

occasions via Skype or through email. Ethically, it has been particularly challenging to respect both my academic integrity and the trust bestowed upon me by my interviewees whenever they expressed stark criticism about their interlocutors, especially in the informal conversations following the interview. Where in doubt, I have explicitly asked for their permission to be quoted.

9.7.2 Transferability

“Single-site studies however still trigger what seems to be a deep and abiding fear of the particularistic among critics of ethnography who wonder what, if anything, can be learned from a “mere case.” The smart-ass but wise answer to this hackneyed but too common question is “all we can.” (Van Maanen, 2011, p. 179).

Van Maanen’s witty quotation echoes Lincoln and Guba’s (1985) position, reported by Yanow and Schwartz-Shea (2006, p. 109):

“Whether research findings from a particular study should be “generalized” to another setting should, logically, be the responsibility of the person who seeks to “transfer” those findings to the new setting.”

The SBIZO framework is but a heuristic tool to interpret a set of dynamics *I* experienced and reflected upon in the field. Like any model, it is inevitably oversimplifying the complexity of the flow of experience. Its intended value is primarily pragmatic and its interpretation is meant to be flexible since

“(…) generative mechanisms identified for phenomena in the social sciences should be viewed as ‘tendencies’, which are valuable in explanations of past data but are not wholly predictive for future situations.” (Walsham, 1995, p. 79)

Maurizio, whom I interviewed in 2011, was also working for the Belgian Technical Cooperation, leading a €5M (≈ £4M) project in support of *lower* vocational education in Burundi. Despite the many contextual similarities, his approach was radically different from Cédric’s (see Section 9.9). Had I worked in that project, the intercultural dynamics as well as the negotiation of power would have been significantly different. Nevertheless, resonances with accounts such as Mosse’s (2005) British bilateral project in rural India as well as Villarreal’s (1994) in Mexico, and Long’s (2001) experiences in South America testify to the significant commonalities in Development practice across the globe when it comes to power negotiation between *developers* and *developees* (see Section 6.4).

9.7.3 Dependability

“Credibility refers to the accurate representation of experiences while dependability focuses attention on the researcher-as-instrument and the degree to which interpretation is made in a consistent manner.” (Baxter & Eyles, 1997, p. 517)

There seems to be an inevitable tension between this criterion and the methodological evolution inherent in longitudinal case study research: methods are adapted and fine-tuned throughout the journey, as a result of early data analysis, new theoretical input from the literature and practical constraints. In this respects, this research confronted three main limitations:

1. The exclusion of the Hutu-Tutsi ethnic dimension from the analysis.
2. The difficult adjustment of the scope of the research.
3. The condition of being a self-funded, sole researcher.

As explained in Section 7.2.1, I decided to exclude the Hutu-Tutsi ethnic dimension from the analysis in the light of my previous experience living in Burundi. I judged that including that layer would have radically changed the perception of my inquiry thus eliciting resistances, suspect and possibly closure in my Burundian interlocutors, ultimately putting my whole research at stake. (Hammersley & Atkins on, 2007 Ch. 3). Whenever I suspected that this tension could have been the main reason for a significant change in the ecosystem under study (e.g. at the ETSA and ETS schools) *and* I felt sufficient trust and confidentiality with my interlocutor, I did enquired about it. Nevertheless, further research tackling these aspects would be desirable.

Second, my primordial assumption that context and culture are crucial in meaning-making (*semiosis*) and yet are often neglected in both Aid effectiveness and ICT4D/E debates, together with my immersive involvement in the project, induced me to slide my investigative lens across many levels of granularity, pursuing a holistic ideal (Hosman, 2010; Marais, 2011). In hindsight, this proved overly ambitious. My future research endeavours will require a sharper focus.

Third, a lone rider in this adventure, I have not enjoyed the possibility of *investigator triangulation*, although I engaged in peer examination extensively, as well as resorting to participant cross-checks (Baxter & Eyles, 1997, p. 516). Furthermore, in order to ensure the financial sustainability of the research, I had to combine my field research with work assignments on site and this occasionally restrained my researcher’s endeavour.

9.7.4 Confirmability

Lincoln and Guba (1985, p. 290; cited in Baxter & Eyles, 1997, p. 517) define confirmability as:

“...the degree to which findings are determined by the respondents and conditions of the inquiry and not by the biases, motivations, interests or perspectives of the inquirer.”

In accordance, I declared at the outset that this study espouses a critical inquiry perspective (Krauss, 2012, 2013; Unwin, 2009; Walsham, 2012) to the extent that it engaged with the gap between the mainstream rhetoric about the emancipatory value of both Development and ICTs and the inequalities perpetuated by their current practices. With Unwin (2009, p. 33), I agree that

“Critical science encourages a form of self-reflection that will enable the systematically distorted patterns of communication in society to be revealed for the benefit of all.”

Furthermore, I described the interpersonal conflicts I have been involved in especially with Firmin. However, as long as researchers may convincingly ‘prove’ their integrity, they cannot be expected to be able to judge to what degree their presumptions ‘biased’ the analysis: a bias is by definition unconscious. Consequently, the assessment of confirmability necessarily weighs on the shoulders of the reader, as in the case of transferability.

9.8 Nourishing the discussion: further research prospects

This research was designed to contribute to *bridging the gap between Aid effectiveness and ICT4E initiatives*. Along the way, it became increasingly clear how the larger Development frame subsumed the ICT4E one. It follows that both ICT4D/E researchers and practitioners cannot afford *not* to engage with this wider analytical layer (Kemppainen *et al.*, 2014). While many authors have insisted on paying careful attention to the context of intervention (Avgerou, 2000, 2008; Avgerou & Walsham, 2001; Hosman, 2010; Krauss, 2013; Pettigrew, 1990; Walsham & Sahay, 1999), the adoption of an *ecological approach* constitutes a step further: it implies sourcing our metaphors in the realm of the *living beings*: erring being unavoidable, I argue it would be better to err by treating ICTs as living beings than people as things, thus I provocatively suggest that scouting the very discipline of ecology in search of insightful analogies applicable to ICT-dense settings, may prove a worthy research pursuit, as it brings the focus onto the *interrelationships* between elements. Moreover, this

analogy may recall the increasing use of *ICT ecosystems* as a term to include all actors, services and technological devices integrated to ensure the loyalty of a user/customer to a certain digital corporation, e.g. Apple versus Microsoft versus Google ecosystems (Open ePolicy Group, 2010). While this terminology may represent a movement towards a more systemic thinking, the mainstream conception of ICTs ecosystems seems forgetful that a digital corporation's ecosystem is inevitably a subsystem of a larger hosting ecosystem. If one accepts that the ecosystem entails also the cultural dimension, then it becomes crucial to include intercultural dynamics into the analysis, as these are intrinsic to most ICT4D interventions.

Intercultural communication applied to ICT4D is indeed a second strand of research this thesis calls for, given both its relevance for practice and the current paucity of academic literature on the subject. Why such paucity subsists, is in itself an intriguing research question. While research around the aspirational value of ICTs in thin-tech countries is inherently intercultural, this alone does not seem sufficient to address the complexity of intercultural issues related to ICT4D interventions (Heeks, 2009).

These two strands, ecological and intercultural, would also help rebalance the current status in ICTD research by bringing the social implications of ICT interventions to the centre stage (Gomez, 2013, p. 15), overcoming technocentrism.

9.9 Final remarks

“Viewed from an individual's perspective, project implementation is not only (or primarily) about executing policy, or even putting schemes in place, but a matter of sustaining a set of relationships that secure a person's identity and status, and which are a precondition for action at every level. Effective relationships are necessary to win support, sanction the flow of resources, build reputations, trust and reliability; to fend off the arbitrary judgement. (...). Stability in the world of action does not come from coherent policy, but from effective relationships. (...) ‘All day long we are in relationships’.” (Mosse, 2005, p. 130).

This quotation captures the overarching argument of this study: the **primacy of relationships quality among stakeholders over policies, planned objectives and measurable outcomes**. While acknowledging the force of the technological imperative rhetoric and the great power of digital capitalism both inscribed in much of the ICT for Development practice (Nederveen Pieterse, 2009; Unwin, 2009), I agree with Long (2001, p. 16) that individuals do have *agency*.

Aggregated, their daily micro-negotiations make a significant difference overall: cultivating good interpersonal relationships is therefore key to allow for sustainability. In contrast, both paternalism and patronising may produce tangible outcomes, yet they are likely to undermine trust and motivation and consequently sabotage the sustainability of the project. Without mutual respect people cannot be motivated in the mid- to long-term; and to grant that mutual respect, it is indispensable to develop an intercultural sensitivity (Kealey, 2001; Kealey & Protheroe, 1995). Idiographically, this calls for a deliberate effort to zoom out and meta-communicate about the Belgo-Burundian relationship, acknowledging its crystallisation as heavily lopsided, yet not immutable (see Chapter 7). Most importantly, recognizing that, on the Belgian side:

“While we have been quick to grasp the potential of concepts such as “participation,” “ownership” and “empowerment,” we have been slower to recognize the changes these concepts demand of *us*. We have failed to understand that participation by them means non-ownership by us. Empowerment for them means disempowerment for us.” (Chambers, 1995, p. 15 — emphasis in the original)

Ultimately, the epistemological challenge for Development cooperation is to strike a fruitful balance between mindfully *speaking* and actively *listening* — two-way. This implies on the one hand, to avoid mindless reactivity when faced with puzzlement, sub poena of worsening the interpersonal relationships at the Belgo-Burundian interface (Long, 2001 — see Chapter 6). On the other hand, even when zooming out to build a bridge of coherence between *our* universe and *theirs*, for the Other to subsist as such, there must be a *quid* that remains *inexplicable* (Ghilardi, 2012; Glissant, 1990). This irreducibility of the Other within our frameset *must* be accepted from the outset: this requires abandoning the illusion of total control and allowing for a degree of ambiguity legitimately to persist. *This is to trust*. Trust should be strenuously cultivated, preserved and restored when damaged (Long, 2001, p. 16), thus acknowledging it as the primary pre-condition to long-term, fruitful cooperation. A deliberate and courageous effort is necessary to unfreeze sclerotic interactional routines, change them, open up first and stay vulnerable long enough for the Other to decide to do the same (Brown, 2011). Based on the data I have presented in this thesis, this may sound utopian, especially thinking of the AESTP project manager operating at the interface between the national policy layer and the project implementation layer (Mosse, 2005; Quarles van Ufford, 1988). However, with Long (2001, p. 16) I intend *agency* as “the capacity to process social experience and to devise ways of coping with life, even under the most

extreme forms of coercion". Maurizio, Cédric's homologue in a similar CTB project aimed at supporting the *lower* Burundian vocational education, was defending a very different approach:

Maurizio: "Il 90% del mio lavoro è eminentemente relazionale. (...) L'efficacia è legata alla capacità di essere accettati. Se io in questo progetto farò qualcosa, se avrò degli allievi nelle mie scuole, sarà semplicemente, non perché ho messo i soldi, ma perché sarò stato accettato come Maurizio in quanto tale. Sarò rispettato come persona, non come assistant technique o come quello che ha i soldi."

[Be6b, 25.11.2011]

Maurizio: "90% of my work is eminently relational. (...) The project effectiveness is linked to the capacity to be accepted. If I will do something, in this project, if I will have pupils in my schools, this will not be because I have put the money, but because I have been accepted as Maurizio as such. I will be respected as a person, not as a technical assistant or the one with the money."

[Be6b, 25.11.2011]

At the end of his mandate, Maurizio was reappointed on the next project with the advocacy of Burundian authorities. Although this event alone cannot be held as ultimate proof: a comparison between the two projects would have constituted a wholly different thesis. Nonetheless, Maurizio's stance as a *guest* pursuing acceptance by the local *host* represented an attempt to question the Belgo-Burundian relationship, rebalancing the traditional power asymmetry between the CTB and the Burundian counterpart, rooting it on the interpersonal layer more than on the institutional. This attitude embodies Chambers' (1995) call cited above as well as the kind of intercultural sensitivity this research calls for.

Conversely, only as Burundians "discover themselves to be 'hosts' of the oppressor can they contribute to the midwifery of their liberating pedagogy." (Freire, 2000, p. 48):

"The oppressed, having internalized the image of the oppressor and adopted his guidelines, are fearful of freedom. Freedom would require them to eject this image and replace it with autonomy and responsibility. Freedom is acquired by conquest, not by gift. It must be pursued constantly and responsibly" (Freire, 2000, p. 47).

This would imply moving beyond the status-boosting value of ICTs to appropriate the tools and skills allowing them to *shape* ICTs for their own local needs (Willoughby, 1990) — if not for the hardware, at least for the software. In order to promote full citizenship in the information society, Burundian vocational education should boldly aim at empowering teachers and pupils to master ICTs beyond the mere use of ready-made applications, such as office automation packages, and also beyond a pedagogical use of ICTs to learn other

subjects. Though both necessary, these application do not fulfil the aspiration expressed by teachers and pupils to join the conversation in the ‘global community’ (see Chapter 8). Consequently, an ICT4E project aiming at development as *emancipation* should leverage ICTs as a means for self-expression, rather than tools passively to mimic ‘Western’ meta-culture. It should enable stakeholders, and particularly those whom the project was meant to benefit, to:

1. Participate to the online world through social media.
2. Become knowledge creators, e.g. enriching the Kirundi version of the Wikipedia.
3. Develop localised websites.
4. Learning programming languages in secondary schools, to enable the creation of new software and smartphone apps.

This movement from *fruition* to *expression* echoes the Web 1.0 to Web 2.0 transition happened in thick-tech countries (Thompson, 2008). Unavoidably, even this is an acculturation process, since mastering ICTs implies adapting one’s own thinking to the cultural mindset of ICTs manufacturers and ‘Western’ software *developers*. Nevertheless, this seems to me the minimum indispensable cost for Burundian to gain *voice* in the global information society (Sabiescu *et al.*, 2013; Sabiescu & Paolini, 2013). Yet this needs not to remain a one-way process: as Winschiers-Theophilus and her research group have demonstrated studying ways to preserve Namibian elderly indigenous knowledge (Bidwell *et al.*, 2011; Fendler & Winschiers-Theophilus, 2010; Winschiers-Theophilus, 2013), ‘Western’ computer scientists can learn a great deal by co-designing with African villagers, even if illiterate, and not so much about the latter, but about themselves and their unconscious presuppositions — a very powerful form, albeit less conventional, of ICT for Education.

In the grander scheme of Development policy and practice, an authentically intercultural approach is one that acknowledges both the wisdom embedded in the Other’s culture as well as the flaws of one’s own. At the end of this long and strenuous journey, I dare envisioning a transition from *bilateral* to *reciprocal* Development projects: projects that in order to be financed *require* the identification of two sets of targets: one in the Aid recipient country and one in the Aid providing country. Both sets of issues should be tackled by leveraging

the wisdom of the Other. Thus this mutual advantage should move beyond the mere extension of, say, the global market or the exploitation of traditional healers' botanic knowledge to the benefit of pharmaceutical companies. Rather, it would imply to subsume *la technique* (Ellul, 1954, 1988) — economics included — to the higher goal of improving and strengthening the *relationships* between *the people* of cooperating countries, recognising their cultural and human richness with an attitude of peer-learners, conscious of their essential interdependence — *Ubuntu* and *Relatio*. This is what I would like to refer to when I speak of Development.

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Annexes

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Annex 1. Memorandum of Understanding between the AESTP Project, APEFE and the author

Memorandum d'entente

PARTIES CONCERNÉES

Le projet AESTP et l'APEFE

et

M. Paolo Brunello, doctorant auprès de Royal Holloway, University of London.

SUJET DE L'AGRÈMENT

Dans le cadre de l'appui que par son expertise M. Brunello va donner au projet AESTP en tant que consultant travaillant pour l'APEFE, il fera aussi de la **recherche scientifique sur le complexe processus d'introduction de l'informatique dans le système scolaire d'un pays en voie de développement**, notamment dans les écoles techniques secondaires burundaises.

Les parties sont unanimement d'accord que cette recherche sera bénéfique pour le projet, pour l'amélioration de leur expertise dans des futurs projets semblables, ainsi que pour la communauté des agents du développement en général, académique ou non.

Par conséquence les parties arrêtent que:

1. M. Brunello est autorisé à collecter des données pour cette recherche. Cela pourra se faire par la voie d'entretiens avec les acteurs impliqués dans le projet, par la prise de photos, par la prise des vidéos, ainsi que par l'utilisation des documents écrits produits par les acteurs.
2. Les organisations signataires chercheront, dans les limites du possible, à faciliter cette collecte.
3. M. Brunello s'engage à toujours demander aux acteurs impliqués l'autorisation d'utiliser les données dont ils sont la source, en leur garantissant l'anonymat.
4. Dans tous les cas, la décision finale concernant la publication de l'identité des organisations signataires dans le projet objet de la recherche sera laissée à la libre appréciation de celles-ci.
5. M. Brunello s'engage à transmettre aux organisations signataires le document définitif du travail de recherche (thèse de doctorat), ainsi qu' un résumé de celui-ci, pour obtenir leur consentement avant publication.
6. Les organisations signataires s'engagent à faire parvenir leurs objections ou leur approbation dans un délai maximum d'un mois.
7. M. Brunello s'engage à prendre en compte ces éventuelles objections et leur soumettre à nouveau le manuscrit avant publication.
8. La DGCD¹, la CTB et l'APEFE seront mentionnées dans le mémoire parmi la liste des contributeurs, par exemple dans la section remerciements.
9. Une fois le mémoire publié, la DGCD, la CTB et l'APEFE pourront en utiliser le contenu de plein droit.

PÉRIODE DE VALIDITÉ

Octobre 2008 – Octobre 2013 (période prévu de complètement du doctorat)

Lieu: Bujumbura

Date: 22/10/08

Pour l'APEFE

Pour le projet AESTP

Le Délégué de la
Cogestion

Le Directeur d'Intervention

Paolo
BRUNELLO

¹ Direction Générale de la Coopération au Développement Belge

Annex 2. Memorandum of Understanding between the Burundian Ministry of Education and the author



République du Burundi

Ministère de l'Enseignement Primaire et Secondaire

Direction Générale de l'Enseignement Secondaire Technique

Memorandum d'entente

PARTIES CONCERNÉES

La Direction Générale de l'Enseignement Secondaire Technique
au Ministère Burundais de l'Enseignement Primaire et Secondaire

et

M. Paolo Brunello, doctorant auprès de Royal Holloway, University of London.

SUJET DE L'AGRÈMENT

Dans le cadre de la **recherche scientifique sur le complexe processus d'introduction de l'informatique dans le système des écoles techniques secondaires burundaises** que M. Brunello est entrain de conduire, les parties sont unanimement d'accord que cette recherche sera bénéfique pour le pays, pour l'amélioration de leur expertise dans des futurs projets semblables, ainsi que pour la communauté des agents du développement en général, académique ou non.

Par conséquent, **les parties se conviennent de ce qui suit:**

1. M. Brunello est autorisé à collecter des données pour cette recherche. Cela pourra se faire par la voie d'entretiens, par la prise de photos, par la prise des vidéos, ainsi que par l'utilisation des documents écrits produits par les acteurs.
2. Les signataires chercheront, dans les limites du possible, à faciliter cette collecte.
3. M. Brunello s'engage à toujours demander aux acteurs impliqués l'autorisation d'utiliser les données dont ils sont la source, en leur garantissant l'anonymat, s'ils le préfèrent.
4. M. Brunello s'engage à transmettre aux signataires le document définitif du travail de recherche (thèse de doctorat), ainsi qu'un résumé de celui-ci en français.

PÉRIODE DE VALIDITÉ

Février 2010 – Octobre 2013 (période prévu de complètement du doctorat)

Lieu: Bujumbura

Date: 26/02/2010

Le Directeur Général de l'Enseignement
Secondaire Technique

Le doctorant



Paolo BRUNELLO

Annex 3. Memorandum of Understanding between the ST Foundation and the author

Memorandum of Understanding

This agreement is set by and between two different entities:

the **STMicronics Foundation**, based in 65, Rue du Rhône, 1204 Geneva, Switzerland

and

Mr. **Paolo Brunello**, consultant based in 6, Via Maffei, 36100, Italy and PhD researcher at Royal Holloway, University of London.

It is agreed that:

- Mr. Brunello will serve as a consultant for the Foundation in a mission from the 1st to the 15th of November 2011 in Burundi, to carry out a feasibility study aimed at selecting between 8 and 16 schools fitting the requirements for participating in the Foundation's Digital Unify program.
- Contextually, the Foundation will let Mr. Brunello carry out his PhD research field study in 9 of the above mentioned schools, namely: ETS Kamenge (Bujumbura), ETB Bubanza, EPC Kiganda, LTK Kiremba Sud, ETP Gitega, ETS A Gitega, ECOSSO Gitega, ITAB Karuzi, ITAB Gifuruzi .
- Mr. Brunello will warrant access to the information collected in the schools indicated above and will gratefully mention the collaboration with the Foundation in the acknowledgments page of his thesis.

President of STMicronics Foundation
Pietro Fox



Mr. Paolo Brunello



Vicenza, 30.10.2011

Annex 4. Informed consent form



Departement de Géographie

AUTORISATION A LA RECHERCHE

Lieu: _____

Date: _____ Heure: _____

Je soussigné _____
atteste d'avoir été convenablement informé sur les buts de la recherche de doctorat de M. Paolo Brunello, qui vise à comprendre les effets de l'introduction de la technologie dans le système scolaire Burundais, et j'accepte en pleine liberté de participer à la dite recherche en

Je accepte d'être enregistré en audio et en vidéo.

« J'autorise M. Brunello à utiliser ma contribution dans sa recherche, en forme anonyme.»

Signature: _____

« J'autorise M. Brunello à utiliser ma contribution dans sa recherche, en citant mon nom et prénom.»

Signature: _____

Annex 5. A detailed comparison between Belgium and Burundi

Table 0.1 compares Belgium and Burundi more thoroughly than in Section 3.3, against three sets of statistical indicators: socio-economic (i1-21), relative to the education sector (i22-27) and relative to technology (i28-i36). As a means for wider comparison, the average values of such indicators in OECD and Developing Countries (According to the UNDP 2011 classification) are provided, where appropriate.

Table 0.1. A comparison between Belgium and Burundi.

code	Indicator [source, year]	Belgium	Average OECD	Burundi	Average Developing Countries UNDP
i1	Official languages	French, Flemish	-	Kirundi, French	-
i2	Government	Kingdom	-	Presidential Republic	-
i3	Population	10.7 Million	-	8,52 Million	-
i4	Surface	30528 sq km	-	27,830 sq km	-
i5	Religion	84% Christian; 4 % Muslim; ≈12% secular	-	75% Christian 10% Protestant 15% Animists	-
i6	Population >65 [c, 2009]	17%	14%	3%	3%
i7	Median age [d, 2010]	41,7 yrs	39,4 yrs	20,1 yrs	18,6 yrs
i8	Population <15 [c, 2009]	17%	19%	38%	43%
i9	Life expectancy [c, 2009]	80 yrs	79 yrs	49 yrs	54 yrs
i10	Child mortality <5 (per 1000)	5	8	142	122
i11	Population: Urban — Rural [c, 2010]	U: 97% R: 3%	U: 77% R: 23%	U: 11% R: 89%	U: 37% R: 63%
i12	% of labour in agriculture	1% [c, 2009]	5% [c, 2009]	93% [B, 2011 est.]	-
i13	Pro Capita income (PPP 2005 \$) [c, 2010]	32.837	30.004	524	2.014
i14	Population under poverty line [c, 2010]	8,8% (< 930\$/month)		81,3% (1,25\$/day PPP)	47,50%
i15	Aid dependency as % of the GDP (2008-2010)[c]	-	-	42%	-
i16	Official Development Assistance Belgium to Burundi (2008-2010) [e]	56.000.000/yr current \$	-	10% of GDP	
i17	GDP by sector [B, 2011 est.]	Agriculture 0,7%		Agriculture 31%	
i18		Industry 21,7%		Industry 21,4%	
i19		Services 77,6%		Services 47,7%	
i20	HDI ranking (2013) [h]	17 th /186		178 th /186	-
i21	Ecological debt (Biocapacity-Ecological Footprint) [f]	7,11 – 1,33 = 5,78 gha per capita		0,85 – 0,45 = 0,40 gha per capita	
	Education				

i22	Adult illiteracy [c, 2009]	1%	2%	33%	37%
i23	Gross Education expenditures (as % of GDP)	-6,40%	-5,30%	-7,20%	-3,90%
i24	[As % of the public expenditure] [c, 2008]	[12,9%]	[11,9%]	[22,3%]	[18,9%]
i25	% of vocational pupils (2009)	42%	15%	7%	7%
i26	School enrolment, secondary (% net) [c, 2007]	88,20%	87,70%	9,30%	26,20%
i27	Pupils to teacher ratio, secondary (2008 WB)	9,8 ^[c, 2009]	13,3 [a, 2008]	29,5[a, 2008]	23,9[a, 2008]
Technological Indicators					
i28	% Tar Roads	78%	80%	10%	19%
i29	Electrification				
i30	Fixed phones (per 100 people) [c, 2010]	43	41	0,4	1,4
i31	Mobile phone subscriptions (per 100 people)	113	103	14	45
i32	Proportion of households with computers [g, 2012]	76	-	2,6	-
i33	Broadband Cost (2009)	≈4 \$/month/Mbit download		≈ 650\$/month/Mbit shared via VSAT	
i36	Internet users (per 100 people)	73	68	1,2	11

Sources: [a] www.WolphramAlpha.com. [B] CIA World Factbook. [c] World Bank www.databank.worldbank.org. [d] UN Statistics Data Bank. [e] OECD DAC statistics. [f] WWF Living Planet Report 2012. [g] International Telecommunication Union (ITU). [h] UNDP.

While Belgium and Burundi share some similarities in terms of size (i3, i4), religion (i5), and an official language in common (French), they are very different in most of other relevant aspects. Demographically, Burundians are a much younger population than Belgians (i6, i7, i8), who enjoy higher chances of survival at birth and live much longer (i9, i10) and safer (i11). Practically all Belgians adults are literate compared to only a third of Burundians (i22). Belgium is the 21st economy in the world by GDP while Burundi is the 192nd with more than 80% of the population living below the extreme poverty line (i14), according to the World Bank. Burundi is markedly rural economy (i11, i12, i17), heavily dependent on external Aid (i16), 10% of which is provided by the highly urbanised (i11, i28) and service-centred (i19) Belgian economy. Thus Belgium ranked 17th in the 2013 UNDP Human Development Report, while Burundi was 178th (i20), yet its ecological debt is 14 times higher than the Burundian one (i21), making its current living standard unsustainable.

Annex 6. List of trainees names and pseudonyms.

#	Name	Age	Gender	Specialisation	School
1	Joel	34	M	English and Computer literacy	EPC Kiganda
2	Jacqueline	26	F	Librarian	EPC Kiganda
3	Juvenal	30	M	Topography and Computer literacy	ETP Gitega
4	Gustave	31	M	Topography	ETP Gitega
5	Jean-Baptiste	44	M	Technical Director Drawing	ETSA Gitega
6	Emile	26	M	Computer literacy	ETSA Gitega
7	Prudence	30	M	Agronomy	ITAB Kigamba
8	Renovat	28	M	Agronomy	ITAB Kigamba
9	Romuald	32	M	Agronomy	ITAB Karuzi
10	Amat	34	M	Technical Director	ITAB Karuzi
11	Paul	30	M	Electrotechnics	LT Kiremba Sud
12	Laban	36	M	School Tresurer	LT Kiremba Sud
13	Espérance	30	F	Headmaster secretary	ITAB Gifuruzi
14	Désiré	33	M	Computer literacy	ITAB Gifuruzi
15	Fabrice	36	M	Electrotechnics	ET Bubanza
16	Isidonie	33	F	Afternoon tutor	ET Bubanza
17	Pierre	34	M	French	ET Bubanza
18	Gregoire	38	M	Agronomy	ITAB Gihanga
19	Joachim	44	M	Agronomy	ITAB Gihanga
20	Zéphirin	30	M	Computer Literacy	ETS Kamenge
21	Prosper	29	M	Electricity	ETS Kamenge
22	Paul	47	M	Pedagogy Advisor	BEET Bujumbura
23	Pierre-Clavert	37	M	Pedagogy Advisor	BEET Bujumbura
24	Eric	35	M	Pedagogy Advisor	BEET Bujumbura
25	Robert	45	M	Pedagogy Advisor	BEET Bujumbura
26	Roger	43	M	Pedagogy Advisor	BEET Bujumbura
27	Remegie	37	M	Computer Technician	ENS Bujumbura
28	Jean-Petit	36	M	Computer Technician	ENS Bujumbura

Source: Author.

Annex 7. List of the equipment allotted to each computer laboratory.

Image	Description	Quantity
	Fujitsu-Siemens Esprimo 3500 desktop running original Microsoft Windows XP Professional SP2 and Microsoft Office 2007 CPU: Pentium 4 3 GHz RAM: 512MB HD: 160GB DVD-RW 1 Gigabit Ethernet card	20
	Uninterruptible Power Supply (UPS) 600 Watts / 1000 VA 230V Frequency range: 47 — 63 Hz Tension range: 175 — 295V Battery duration: 18 minutes	20
	HP Compaq Business Desktop dx2200 Microtower running Linux Abuledu 8.08 CPU: Celeron 3 GHz RAM: 512MB 2x HD: 160GB DVD-RW 2 Gigabit PCI Ethernet cards	1
	24-port 10/100 Ethernet (+ 2 Gigabit Ports) Switch	1
	Cat. 5 UTP cable, with hand-crimped RJ45 connectors	≈ 50
	HP Colour Laser Printer 2600n Cyan, Yellow, Magenta, Black (CYMK) with network card.	1 + 1 extra cartridge
	Epson Perfection V30 Scanner	1
	Hitachi XVGA LCD Projector	1
	5MP Kodak Digital camera	1 (8 schools only)
	Large (L:3m x H:1.2m) 3-panes whiteboard	1

Source: Author.

Annex 8. Net-Map digitisation procedure using Visualyzer 2.0 software. Source: courtesy of Dr. Eva Schiffer.

Data entry and interpretation



Difference between SNA and other data:
Attribute data vs. relationship data

	Gender	Age	Origin	Married
Kwame	M	20	Accra	0
Francis	M	23	Kumasi	1
Mary	F	30	Accra	1
Isaac	M	40	Wa	0

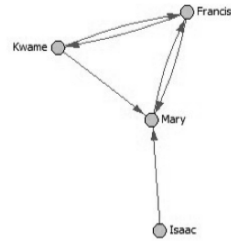
Attributes of individuals

	Kwame	Francis	Mary	Isaac
Kwame	0	1	1	0
Francis	1	0	1	0
Mary	0	1	0	0
Isaac	0	0	1	0

Links between individuals
"gives money to"

Visual representation of matrix

	Kwame	Francis	Mary	Isaac
Kwame	0	1	1	0
Francis	1	0	1	0
Mary	0	1	0	0
Isaac	0	0	1	0



Who gives money to whom?

Example: Square Matrix sheet “advice”

	A	B	C	D	E	F	G	H	I	J
1		WoGroup: NGO	MarketWo	IrrFarmer: Fulani	MoE	MoAg	DA	Fis herm		
2	WoGroups									
3	NGO									
4	MarketWo									
5	IrrFarmers									
6	Fulani									
7	MoE									1
8	MoAg				1	1				
9	DA							1		
10	Fis herm									
11										
12										
13										
14										
15										
16										
17										
18										
19										
20										
21										
22										
23										
24										
25										

MoAG gives advice to IrrFarmers

One file per interview, one sheet per kind of link

Example: Actor Attributes in Separate Sheet

The screenshot shows an Excel spreadsheet with the following data:

	A	B	C	D	E	F
1		height of tower	relative influence	actor group	level	goal
2	WoGroup:	0	0	citizen	local	D
3	NGO	1	0.333333333	NGO	internat	P
4	MarketWc	1	0.333333333	citizen	local	D
5	IrrFarmer:	2	0.666666667	citizen	local	D
6	Fulani	0	0	citizen	local	D
7	MoE	2	0.666666667	gov	district	P
8	MoAg	3	1	gov	district	D
9	DA	3	1	gov	district	DP
10	Fisherm	0	0	citizen	local	D

Callouts from the left side of the image point to the following data points in the spreadsheet:

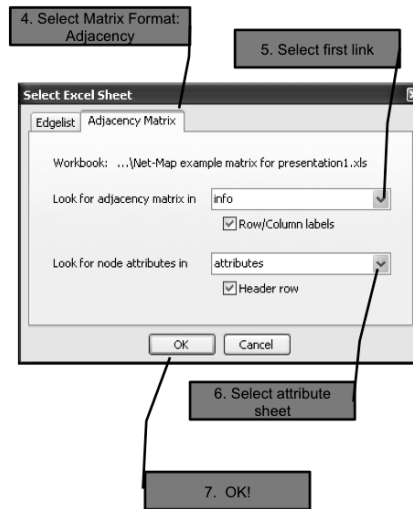
- Actual height of tower (number of pieces):** Points to the 'height of tower' column (B).
- Normalized influence value: Divide height of tower by height of highest tower in this map:** Points to the 'relative influence' column (C).
- Actor groups according to color of actor card (pre-defined categories):** Points to the 'actor group' column (D).
- Other actor characteristics of interest:** Points to the 'level' column (E).
- Goals of actors:** Points to the 'goal' column (F).
- 1 attribute sheet per interview:** Points to the entire spreadsheet.

Import Square Matrix to Visualizer

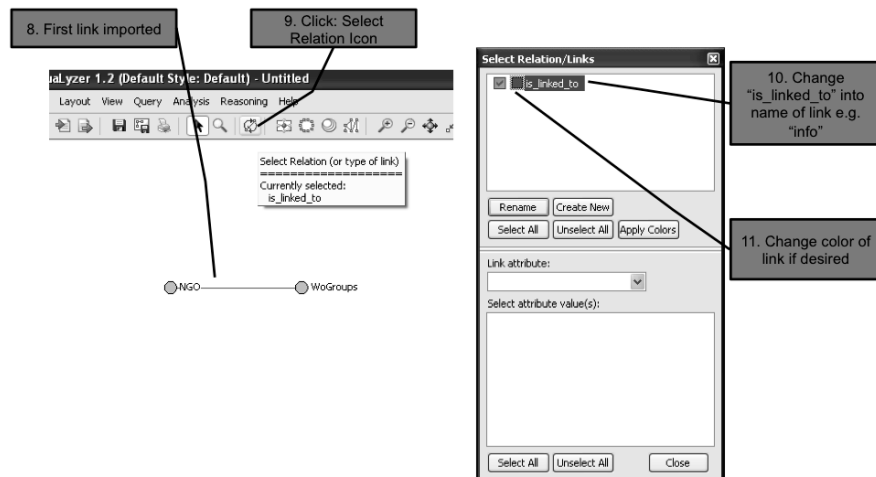
The screenshot illustrates the steps to import a square matrix into Visualizer 1.2:

- 1. File - Import:** The 'File' menu is open, and the 'Import...' option is selected.
- 2. Indicate Format: Excel:** The 'Files of type' dropdown in the 'Import' dialog is set to 'Microsoft Excel Workbook (*.xls)'. The 'File name' field contains 'Net-Map example matrix for presentation1'.
- 3. Select and open document:** The 'Open' button is clicked to load the selected file.

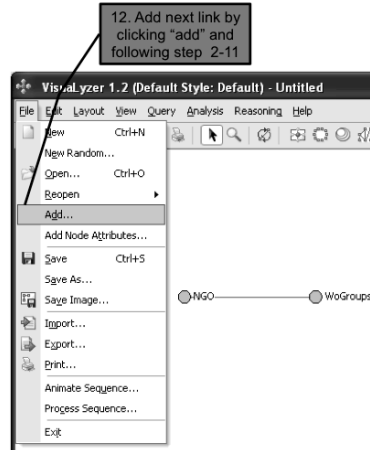
Import Square Matrix to Visualizer



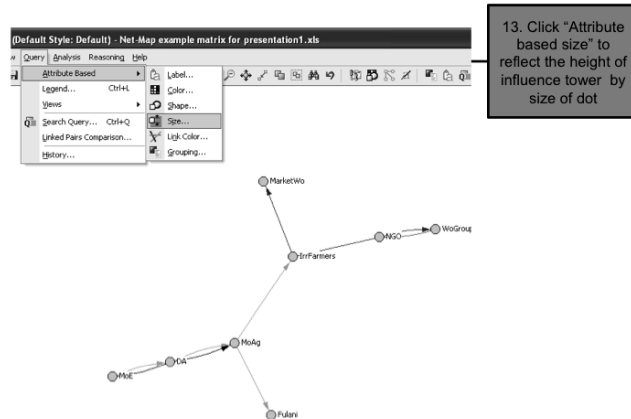
Name link



Add next kind of link



Attribute based node layout



Size according to attribute

14. Choose "relative influence" to determine size

Network Properties and Node Centrality

15. Click "Analysis", "Network Properties" and "Node Centrality" to start quantitative analysis

Network Properties

The graph is connected.
The graph is directed.

Total nodes: 8
Enabled nodes: 8
Isolates: 0
Dyads: 0
Components 3+: 1
Groups: 0

Relations: advice, command, info, money
Current relations: info, money, advice, command
Total links: 10
Current links: 10
Current enabled links: 10

Diameter: 5
Average geodesic (distance): 2.4286
Density: 0.2571
Degree Centralization: 85.7143%
Closeness Centralization: 37.479%
Betweenness Centralization: 45.980%
* all measures for undirected graph
* multiple links between two nodes are counted as a single link.

Node Centrality

The graph is connected.
The graph is directed.

Current relations: info, money, advice, command
* multiple links between two nodes are counted as

Node	Degree	InDegree	OutDegree
NGO	3	1	2
InfFarmers	3	2	1
DA	3	1	2
MoAg	3	1	2
WoGroups	2	1	1
MoE	2	1	1
MarketWo	1	1	0
Fulani	1	1	0

AVG: 2.250 1.125 1.125 32.143%
STD: 0.829 0.331 0.781 11.845%
MIN: 1 1 0 14.286%
MAX: 3 2 2 42.857%

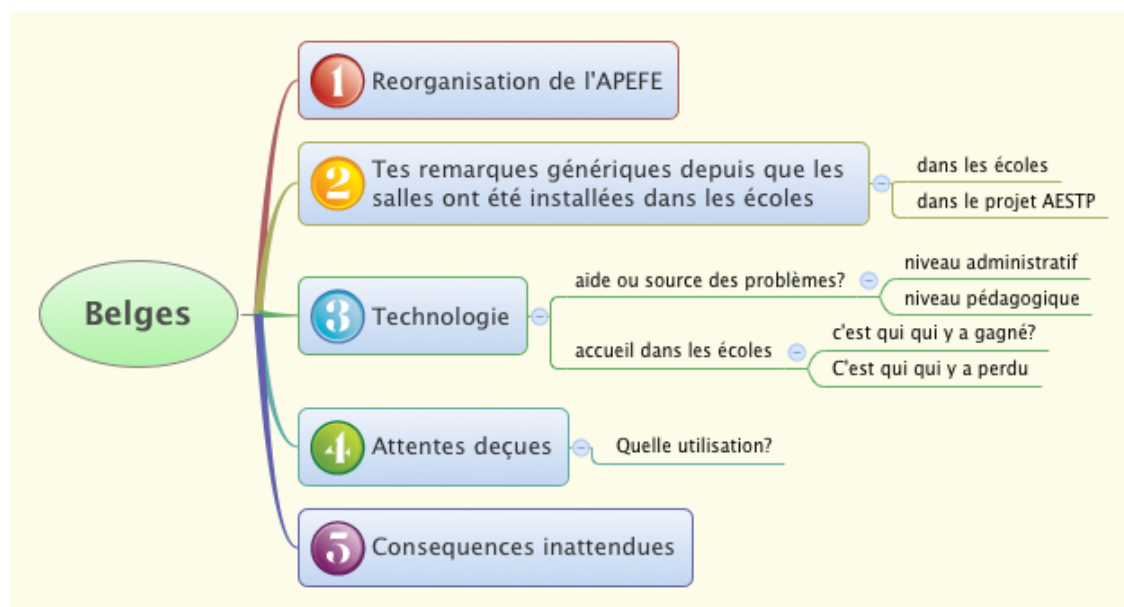
Closeness Centrality (for undirected graph)

Node	Farness	Closeness	Normalize
InfFarmers	12.0	0.083	58.333%
MoAg	12.0	0.083	58.333%
NGO	16.0	0.063	43.750%
DA	16.0	0.063	43.750%
MarketWo	18.0	0.056	38.889%
Fulani	18.0	0.056	38.889%

Annex 9. Second round of field research: interview templates

Field research 2 (February – March 2010)

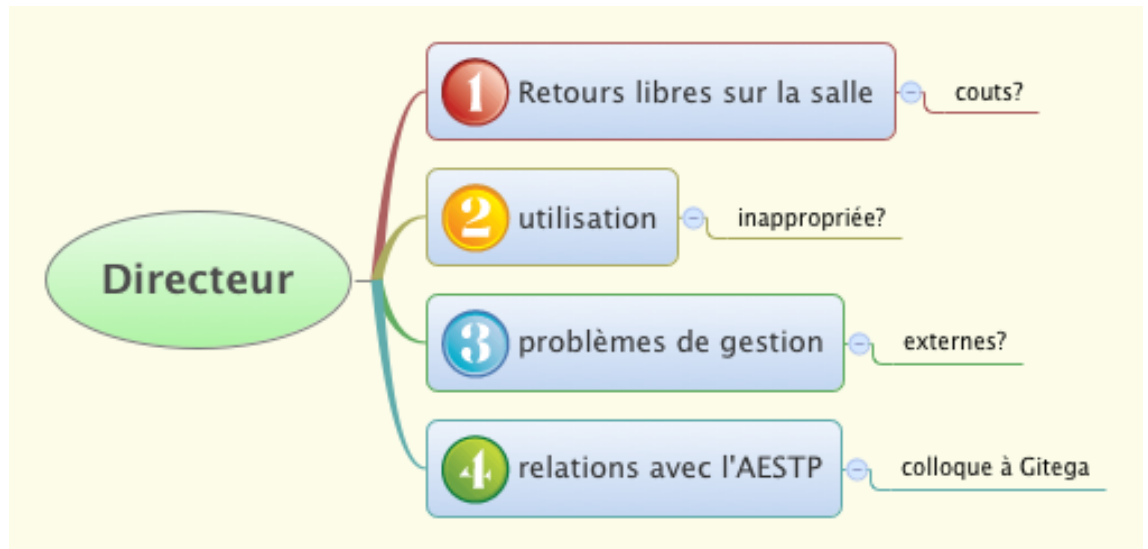
Interview template for Belgian AESTP workers.



Source: Author.

- 1 APEFE reorganisation: comments?
- 2 Free comments since the Computer Labs were installed in the schools
 - Comments from schools
 - Comments from the AESTP project staff
- 3 Technology
 - Aid or source of problems?
 - At the administrative level
 - At the pedagogical level
 - Reception of the computer labs in schools: how was it?
 - Who did gain from it?
 - Who did lose?
- 4 Unfulfilled expectations
 - What kind of use?
- 5 Unexpected consequences?

Directeur Interview template for principals.

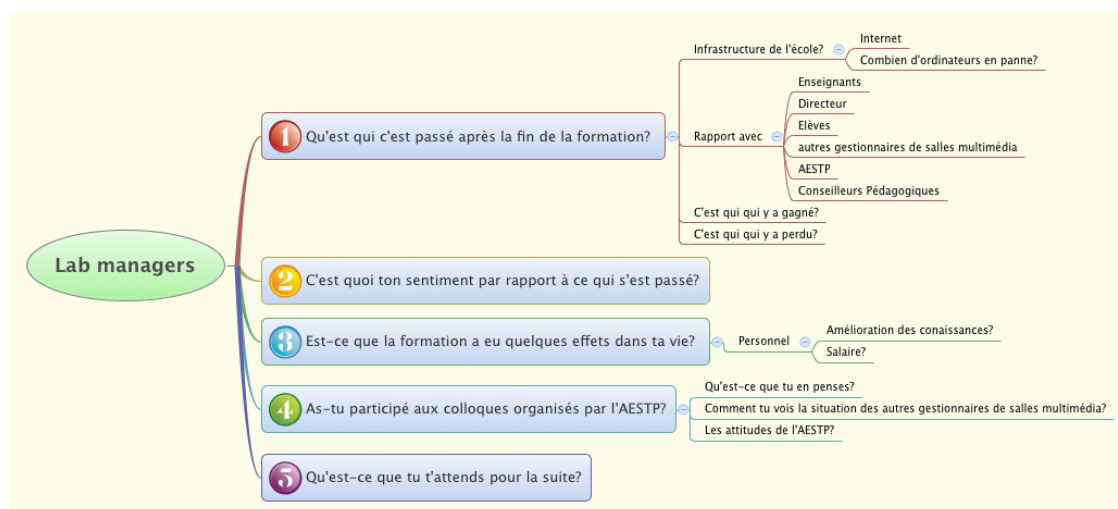


6

Source: Author.

- 1 Free comments on the newly installed computer lab
 - Costs?
- 2 Use
 - Inappropriate uses?
- 3 Management problems?
 - External users admitted?
- 4 Relations with AESTP
 - Did you take part in the convention in Gitega

Interview template for lab managers.



Source: Author.

1 What happened after the end of the training?

- What's the current state of the school infrastructure?
 - Do you have an Internet connection?
 - How many PCs are out of service?
- Relationship with:
 - teachers
 - principal and technical director
 - pupils
 - other lab managers
 - AESTP
 - Pedagogical advisors
- Who did gain from the computer lab?
- Who did lose something?

2 What are your feeling with respect to what happened so far?

3 Did the training have some impact in your life?

- At a personal level
 - Improved knowledge?
 - Better income?

4 Have you taken part in the convention organised in Gitega by the AESTP?

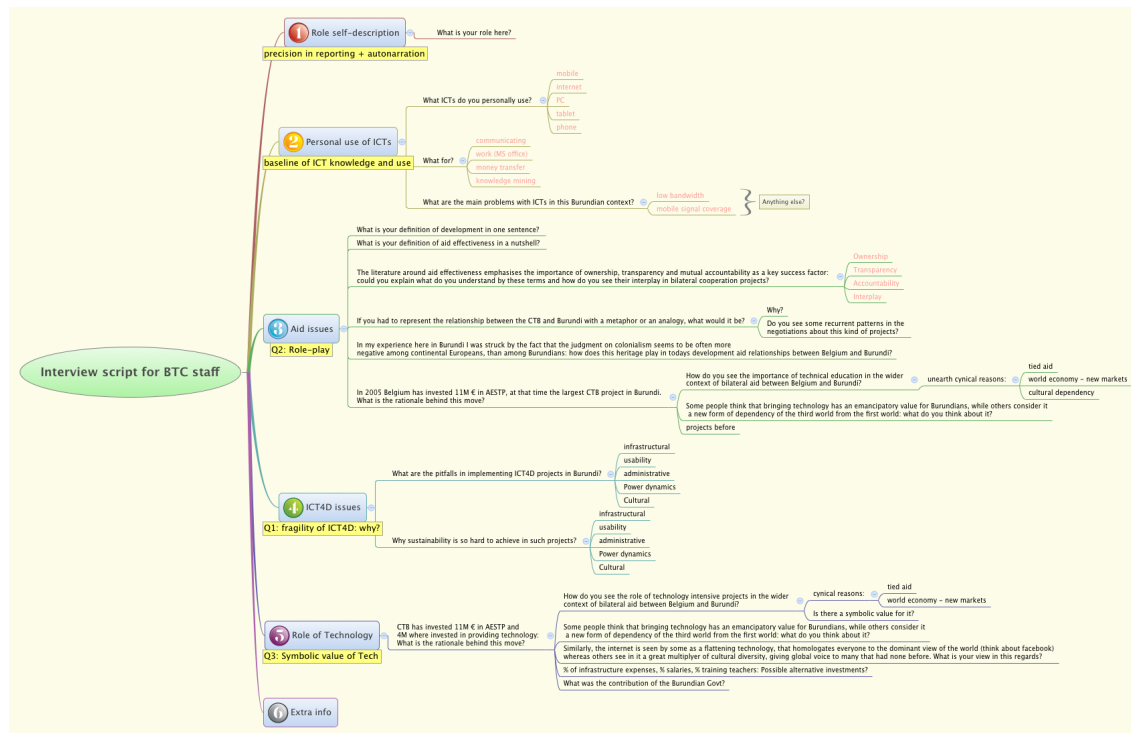
- What do you think about it?
- How do you see the situation of the other lab managers?
- What were the attitudes of AESTP staff during the meeting?

5 What do you expect in the future?

Annex 10. Third round of field research: interview template

Field research 3 (November 2011)

Interview template for CTB staff.



Source: Author.

- 1 Role self-description** Goal: precision in reporting + autonarration
 - What is your role here?
- 2 Personal use of ICTs** Goal: baseline of ICTs knowledge and use
 - What ICTs do you personally use?
 - Mobile
 - Internet
 - PC
 - Tablet
 - Phone
 - What for?
 - Communicating
 - Work (MS office)
 - Money transfer
 - Knowledge mining
 - What are the main problems with ICTs in this Burundian context?
 - Low bandwidth
 - Mobile signal coverage
 - Anything else?

- 3 **Aid issues** Goal: Research Question 2: Role-play
- What is your definition of development in one sentence?
 - What is your definition of aid effectiveness in a nutshell?
 - The literature around aid effectiveness emphasises the importance of ownership, transparency and mutual accountability as a key success factor:
 - Could you explain what do you understand by these terms and how do you see their interplay in bilateral cooperation projects?
 - Ownership
 - Transparency
 - Accountability
 - Interplay between the three above
 - If you had to represent the relationship between the CTB and Burundi with a metaphor or an analogy, what would it be?
 - Why?
 - Do you see some recurrent patterns in the negotiations about this kind of projects?
 - In my experience here in Burundi I was struck by the fact that the judgment on colonialism seems to be often more negative among continental Europeans, than among Burundians: how does this heritage play in today's development aid relationships between Belgium and Burundi?
 - In 2005 Belgium has invested 11M € in AESTP, at that time the largest CTB project in Burundi.
 - What is the rationale behind this move?
 - How do you see the importance of technical education in the wider context of bilateral aid between Belgium and Burundi?
 - Unearth cynical reasons:
 - tied aid
 - world economy — new markets
 - cultural dependency
 - Some people think that bringing technology has an emancipatory value for Burundians, while others consider it a new form of dependency of the third world from the first world: what do you think about it?
 - What kind of projects were you involved in before?
- 4 **ICT4D issues** Goal: Research Question 1: Fragility of ICT4D: why?
- What are the pitfalls in implementing ICT4D projects in Burundi?
 - Infrastructural
 - Usability
 - Administrative
 - Power dynamics
 - Cultural
 - Why sustainability is so hard to achieve in such projects?
 - Infrastructural
 - Usability
 - Administrative
 - Power dynamics
 - Cultural

-
- 5 Role of Technology Goal: Research Question 3: Symbolic value of Technology
- CTB has invested 11M € in AESTP and
 - 4M where invested in providing technology:
 - What is the rationale behind this move? *[this question was placed in two branches to accommodate the flow of the conversation, but was asked only once]*
 - How do you see the role of technology intensive projects in the wider context of bilateral aid between Belgium and Burundi?
 - cynical reasons:
 - tied aid
 - world economy — new markets
 - Is there a symbolic value for it?
 - Some people think that bringing technology has an emancipatory value for Burundians, while others consider it a new form of dependency of the third world from the first world: what do you think about it?
 - Similarly, the Internet is seen by some as a flattening technology, that homologates everyone to the dominant view of the world (think about Facebook) whereas others see in it a great multiplier of cultural diversity, giving global voice to many that had none before. What is your view in this regards?
 - What do you estimate the percentage of infrastructure expenses, salaries, training teachers to have been in the AESTP project?
 - Could you imagine alternative investments?
 - What was the contribution of the Burundian Government?
- 6 Extra information emerging serendipitously

Annex 11. Provision of a GPRS/EDGE modem to school principals, to be assigned to the computer lab managers

REPUBLIQUE DU BURUNDI

Bureau d'Etudes de l'Enseignement Technique (BEET)

N. Réf. : 629.02/BEET/..... /20 Bujumbura, le / /2009

V. Réf. :

A M. le Directeur de

.....

Objet: Remise du modem GPRS/EDGE UCOM destiné aux gestionnaires de la salle multimédia

M. le Directeur,

par la présente, j'ai l'honneur de vous transmettre ce modem GPRS/EDGE de UCOM (complet de carte SIM) afin que vous le confiez à vos gestionnaires des salles multimédia. Ils pourront ainsi se connecter à l'internet et échanger via e-mail avec le formateur et avec leurs homologues des autres établissements du projet « Salles Multimédia », condition jugée **fondamentale** pour un suivi efficace de la salle dans la première année de son fonctionnement.

Je vous prie aussi de mettre à disposition des gestionnaires les unités nécessaires à assurer cette connexion, dans la mesure du possible.

En échange de cette fourniture gratuite du modem, UCOM se garantit le droit d'afficher dans la salle multimédia une pancarte publicitaire de 50x50cm environ qui signale que la connexion internet dont la salle dispose est fournie par UCOM.

Je vous prie d'agréer, M. le Directeur, l'expression des mes salutations distinguées.

Le Directeur du BEET

<M. Dieudonné>

Annex 12. Contract with transcribers

Contrat de collaboration

entre

M. Paolo Brunello

et

<transcriber's name>

pour la transcription d'interviews

Par ce contrat les deux parties conviennent que:

1. **Les enregistrements audio à transcrire sont strictement confidentiels et seront traités avec le maximum de discrétion: aucun de ces contenus sera divulgué, ni à l'écrit, ni à l'orale.**
2. **Les noms des interviewées ne devront pas apparaître en entier dans la transcription, mais juste leur code qui sera fourni dans un fichier à part.**
3. Les transcriptions seront faites avec le maximum de précision, en reportant l'entièreté du dialogue à l'exception des interférences occasionnelles qui ne pertiennent pas à l'interview (coups de fil, problèmes logistiques tel que le changement d'endroit dû au bruit, etc.) De toute façon, ces interruptions doivent quand même être marqués dans la transcription, avec leur durée.
4. Toute partie de l'enregistrement qui n'est pas clairement compréhensible doit être marqué dans la transcripition par 3 points d'interrogation: ???
5. Toute expression paralinguistique (rire, pause très longue, etc.) doit aussi être marqué dans la transcription.
6. Toute expression occasionnelle en Kirundi doit être transcrite en Kirundi, en écrivant la traduction en français juste après.
7. Le délai d'exécution des transcriptions doit être respecté et si il y a un retard le transcripateur devra renseigner M. Paolo tempestivement.
8. Le service de transcription, si jugé de bonne qualité, sera payé 12.000BIF par heure de audio transcrite.

Pour acceptation

• M. Paolo Brunello

• <transcriber name>

Annex 13. Transcripts analysis codes tree

#	Code name	Sources	References
1	Attitude	1	1
2	Paternalism	3	9
3	Patronising	2	13
4	defying	1	1
5	Critical Incidents	3	5
6	Attributions	5	6
7	Laxisme	1	2
8	Lazy	1	2
9	Money-driven	3	5
10	Sales	1	4
11	Stupid	1	2
12	double-dealing	0	0
13	Context-related Critical Incidents	13	37
14	Cultural differences	17	55
15	LoC in	1	1
16	LoC out	3	8
17	reagency	2	2
18	lack of resources	8	17
19	mineduc	12	25
20	overpopulation	24	101
21	politicisation	8	26
22	Positive outcomes	5	14
23	Relationships-related Critical Incidents	22	91
24	APEFE-AESTP	6	9
25	Conflicts	4	4
26	Be-Bu	0	0
27	Firmin-Jeef	1	2
28	Cédric-Diomedé	0	0
29	Cédric-Victoire	0	0
30	Cédric-bahizi	2	4
31	Cédric-bizimungu	1	2
32	_Inter-BUs	17	60
33	Paul-Hermès	0	0
34	Théodore-econome etb	0	0
35	prosperetb-jeef	0	0
36	_Inter-EU	0	0
37	Firmin-Julie	0	0
38	Paolo-Firmin	4	5
39	Cédric-Julie	0	0
40	Cédric-Propser	0	0
41	bel-bu	11	45
42	CTB-Mineduc	11	49
43	chantage	2	3
44	gestion	14	40
45	lack of communication	6	12
46	money-related	28	64
47	status	6	15
48	Tech-related Critical Incidents	31	124
49	Linux	4	6
50	Internet	7	9
51	missing links	3	5
52	new tech old use	1	1
53	Whos to fix it	1	4
54	theft	9	19
55	underused	18	38
56	Declarations	1	1
57	Aid	17	117
58	aid effectiveness	16	124
59	<i>developers</i> sustainability	3	6
60	success	1	2
61	sustainability	11	33
62	judgement	20	48
63	Formation PEIBU	19	54

64	Context-related	16	57
65	avec ou contre	0	0
66	Relationship-related	13	39
67	Bel-bu	25	130
68	metaphoric img	19	78
69	Belgians are...	6	14
70	Burundians are...	16	56
71	Relatio economics	3	8
72	Tech-related	29	103
73	CLs metaphors	1	2
74	Tech Imperative	11	31
75	techidolaty	3	7
76	modernité	8	10
77	techterminism	3	10
78	Tech expertise advantages	8	13
79	Learning	6	13
80	money	12	27
81	motivations for volunteering	10	19
82	prestige	9	20
83	riche en obligations	3	4
84	expectations	12	18
85	fears	12	21
86	hopes	5	8
87	Internet	11	17
88	linux	4	7
89	pedagogie of ICTs	16	54
90	_Jewels	34	162
91	developpement	16	42
92	Emotions	1	1
93	Disappointment+Frustration	1	8
94	resentment	1	2
95	Factual Descriptions	0	0
96	Macro	15	47
97	Meso	12	52
98	APEFE	6	13
99	CTB	14	33
100	Mineduc	16	33
101	PEIBU	7	16
102	aestp	5	7
103	evaluation	1	5
104	smcl	1	1
105	Micro	32	278
106	horaire	13	30
107	reglement	5	11
108	Nano	19	106
109	orchestration	5	10
110	ICT4E barriers	0	0
111	PEIBU	1	1
112	aestp2	3	11
113	appropriation	3	4
114	autofinancement	3	6
115	dependence	2	2
116	evil	1	1
117	goals	1	6
118	money-related	3	7
119	prj rationale	1	2
120	responsibility	1	1
121	uses	18	60
122	instrumental use of tech	3	5
123	peer learning	2	5
124	solutions	1	3

Source: Author.

Annex 14. ETSA computer lab regulations

REGLEMENT D'ORDRE INTERIEUR DE LA GESTION DE LA SALLE MULTIMEDIA DE L'ETSA GITEGA

DISPOSITIONS GENERALES

Dans le cadre de la contribution au développement socio-économique du pays et de l'amélioration de certaines filières techniques, le Projet d'Appui à l'Enseignement Secondaire Technique et Professionnel (AESTP) sur financement du Don du Royaume de Belgique a installé au cours de l'année scolaire 2008-2009 une salle multimédia à l'ETSA de Gitega.

La salle est équipée de :

- 20 ordinateurs, marque Fujitsu Siemens avec un système d'exploitation Windows XP et Linux.
- 1switch (24ports), marque Baseline
- 1scanner, marque Epson
- 1scanner, marque Scanjet G3010
- 1imprimante, marque HP
- 1projecteur vidéo, marque Hitachi
- 1Caméra Digital, marque Panasonic
- 1appareil photo Digital, marque Kodak
- 5 calculatrices, marque Casio

Tous les ordinateurs, l'imprimante et le scanner sont reliés par des câbles interconnectés sur le réseau local pour faciliter le partage des données.

La salle multimédia pourra offrir aux utilisateurs des services suivants :

- Améliorer la qualité de l'enseignement par l'usage de différents logiciels spécifiques de graphisme, de dessin d'architecture et d'infographie.
- Apprendre aux élèves, au personnel de l'ETSA et au milieu environnant de l'école à être de bons citoyens dans cette ère de la mondialisation en matière d'information et de communication en vue de faire face aux enjeux du monde économique en pleine compétitivité.
- Apprendre aux élèves et aux enseignants des compétences informatiques qui leur permettent de concevoir, de créer et de réaliser des messages graphiques et de traitement des images sur l'ordinateur.

CHAPITRE I

JOURS ET HEURES D'OUVERTURES

Article 1 :

Jours d'ouverture

-Pendant la semaine

JOURS	UTILISATEURS			
	Elèves		Professeurs	
Périodes	Avant-midi (8h00-12h00)	Après -midi (14h00-18h00)	Avant-midi (8h00-12h00)	Après-midi (14h00-18h00)
Lundi			X	
Mardi	X	X	X	
Mercredi	X	X	X	
Jeudi			X	
Vendredi	Propreté et maintenance des équipements			
Samedi	Club d'Infographie dans l'après-midi			

Article 2 :**Services d'entretien et de maintenance des équipements**

Le service d'entretien, de propreté et de maintenance des équipements de la salle se fera uniquement tous les vendredis dans la matinée.

CHAPITRE II**DE LA GESTION DES UTILISATEURS DE LA SALLE MULTIMEDIA****Article 3 :**

Les Gestionnaires de la salle communément appelés « Administrateurs » sont responsables des équipements et doivent programmer et coordonner toutes les activités de la salle.

Article 4 :

Seuls les Administrateurs de la salle sont autorisés à :

- s'occuper du serveur,
- configurer et gérer tout le système réseau informatique
- faire des connexions.
- gérer les postes clients (terminaux TX)
- créer des comptes des utilisateurs (enseignants, élèves, stagiaires ...).
- faire un suivi régulier et l'entretien des équipements pour la pérennisation du projet.

Article 5 :

Il est interdit aux utilisateurs des machines de :

- toucher le serveur qui est une machine centrale.

Cette machine exécute tous les programmes des autres postes clients et de l'imprimante.

Il est conseillé d'utiliser plutôt les services qu'il offre notamment les applications et le partage des fichiers.

- faire l'impression des copies sans l'accord de l'Administrateur.
- utiliser le scanner et le rétroprojecteur des images.
- Utiliser les flashes disques contenant des virus (les faire scanner chez le Gestionnaire avant leur utilisation).
- visualiser les CD vidéo ou des films à titre privé sans autorisation de l'Administrateur de la salle ou sauf en cas d'une activité à caractère pédagogique et d'encadrement programmé au préalable par le Gestionnaire de la salle.

Article 6 :

La discipline est exigée à l'intérieur de la salle afin de permettre une concentration des utilisateurs.

CHAPITRE III**DE L'AUTOFINANCEMENT DE LA SALLE MULTIMEDIA****Article 7 :**

La salle multimédia de l'ETSA doit être dotée d'une des machines photocopieuses en noir/blanc offertes par le projet AESTP qui sera aussi connectée sur le système réseau comme les autres machines pour les différentes impressions des documents des clients.

Article 8 :

Les tarifs des services offerts par les équipements de la salle sont fixés par le Conseil de Direction et de Gestion de l'école et sont répartis de la façon suivante :

A) Volet production

- Impression d'une page en couleur :
 - Texte : 1 000 BIF
 - Image : 2 500 BIF
- Impression d'une page en noir / blanc : texte : 500 BIF
- Impression d'une page en noir / blanc : tableau : 700 BIF
- Photocopie d'une page : 50 BIF
- Scanner + impression
 - Texte : 1 500 BIF
 - Image : 3 000 BIF

- Scanner + Retouche (image) + impression : 4 000 BIF
- Impression d'une photo (Sur Flash disk) : 2 500 BIF
- Impression d'une photo (Sur Flash disk) + Retouche image : 3 000 BIF
- Carte d'invitation : 250 BIF / pièce
- Dépliant : 2 500 BIF / pièce
- Copier un CD : 1.000 BIF
- Copier un VCD ou DVD : 2.000 BIF
- Graver les données : 2.000 BIF

B) Volet formation

- Initiation et formation en Microsoft Word : 20 000 BIF
- Initiation et formation en Microsoft Excel : 25 000 BIF
- Adobe Photoshop : 45 000 BIF
- Adobe Illustrator : 40 000 BIF

Article 9 :

Les recettes sont perçues en terme de pourcentages moyennant un reçu ou quittance de paiement établi à cet effet .Elles sont affectées par le Conseil de Direction et de Gestion suivant la répartition ci -après :

- La salle multimédia recevra 50% des recettes perçues pour l'achat du matériel, pour l'entretien des machines et le remplacement des équipements défectueux.
- L'école recevra 20% des recettes perçues comme contribution de la salle pour la subsistance de l'école.
- Les Gestionnaires de la salle multimédia recevront 30% des recettes perçues comme honoraires de tous les services rendus aux clients et la maintenance de la salle.

Article 10 :

L'école devra ouvrir un compte bancaire de transit de toutes les recettes perçues de la salle multimédia.

Article 11 :

Le compte bancaire devra être géré par 2 mandataires c'est-à-dire le Directeur de l'école et un Gestionnaire de la salle multimédia comme co-gestionnaire.

Article 12 :

Les retraits de fonds en banque sur le compte se feront sur base des prévisions des dépenses à engager établies par les gestionnaires et par chèque contresigné par les 2 mandataires (Directeur de l'école et de son co-gestionnaire). Un comité de contrôle composé de deux professeurs membres du conseil de Direction — Gestion devra procéder au contrôle des finances une fois par trimestre.

Article 13 :

Pour plus de sécurité et de contrôle des mouvements d'ouvertures de la salle multimédia de l'école, seuls les Gestionnaires devront porter chacun une des clés de la salle.

DISPOSITIONS FINALES

- Toutes les clés USB doivent être détectées de virus.
- Les Gestionnaires doivent afficher leurs numéros de contact pour faciliter la communication en cas de nécessité.
- L'école devra fournir les équipements de remplacement qui exigent des coûts onéreux en cas de pannes matérielles.
- La salle multimédia devra être dotée, dans un proche avenir, d'un ventilateur pour l'aération de la pièce et d'un groupe électrogène pour l'alimentation des machines en cas de coupure de courant électrique.
- Le Conseil de Direction et Gestion de l'école ainsi que les Gestionnaires de la salle sont chargés de l'exécution du présent Règlement d'Ordre Intérieur (R.O.I) qui entre en vigueur à la date de son approbation par les signataires.

Fait à Gitega, le 22/10 /2009

Pour Approbation**Les membres du Conseil de Direction et de Gestion de l'ETSA**

- : Directeur de l'ETSA
- : Préfet de Discipline
- : Econome
- : Econome -Adjoint chargé de l'Autofinancement
- : Représentant des professeurs
- : Représentant des professeurs
- : Représentant des professeurs
- : Professeur et Gestionnaire de la salle multimédia
- : Gestionnaire du matériel didactique
et Co-Gestionnaire de la salle Multimédia.

Annex 15. Computer lab management training: agreement signed by recruited trainees

Conditions pour la participation à la formation

Je soussigné , _____, ayant été sélectionné pour la formation en administration réseau informatique organisée par le projet AESTP, je m'engage à y participer régulièrement, aux conditions suivantes:

1. j'accepte le principe de vie communautaire adopté dans cette formation, notamment la mise en commun du perdiem (25.000BIF/nuitée quand on est en transfert, 0BIF/jour si on n'est pas en transfert), repartit comme il suit:
 - a. 50% pour moi;
 - b. 50% pour le fond de démarrage de la nouvelle salle multimédia;au net des frais réel de logement et nourriture;
2. je serai remboursé des frais de transport lorsque la formation se déroule ailleurs que dans mon établissement;
3. au cas où je me trouvais empêché de participer à la formation pour des raisons de force majeure, je m'engage à le communiquer le plus tôt possible aux reste du groupe, via email ou SMS.

Signature:

Lieu: _____ Date: _____