

From "the end user is the message" to "the interaction is the message": Proposing mediated action as a framework for analyzing the role of ICTs in development

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Abstract

Based on empirical research on the use of traditional and new ICTs by social movements in Latin America, as well as the use of mobile phones in Africa, this paper seeks to interrogate notions at the intersection of information and communication technologies (ICTs), development, and technology appropriation. While the articulation of links between the ICT and development worlds has found some expression in the ICT for development (ICTD) community, there is still a fundamental gap between expectations and realities in the development-oriented efforts within this community. Not only do several ICTD projects fail to deliver the envisioned results, but target populations often use ICTs in unexpected ways. Responses to these realities often reflect limited views or expectations about how ICTs should affect or be affected by people in low-income countries. Drawing on Sen's capabilities approach to development and Wertsch's concept of mediated action, we begin an exploration of the utility of the concept of mediated action as a means of broadening characterizations of what happens when people engage with ICTs for personal, community, and global development.

Introduction

This paper seeks to interrogate notions at the intersection of information and communication technologies (ICTs), development, and technology appropriation. While the articulation of links between the ICT and development worlds has found some expression in the ICT for development (ICT4D) community, there is still a fundamental gap between expectations and realities in the development-oriented efforts within this community. Not only do several ICT4D projects fail to deliver the envisioned results, but target populations often use the ICTs at their disposal in surprising or unexpected ways. One of the perspectives that has emerged in response to observed unexpected uses and outcomes of ICT use is that of technology appropriation, broadly defined as the process by which people make a technology their own. Views from this perspective often produce more pragmatic depictions of end-user engagement with the offerings of ICT4D. They also highlight the largely positive relationship between the openness of technological systems and the ability of end users to appropriate and innovate with the technology.

Yet the conceptualizations associated with technology appropriation, ICTs, and development remain unsatisfactory for several reasons including the following – they maintain a relatively dominant focus on technological artifacts; they are based on a relatively inflexible conception of development impacts; they show limited recognition of the multiplicity of possible and actual development paths; they do not fully capture the role of end-users as influential actors; and they do not account for the varied ecology of actors participating in the practice of ICT appropriation. Drawing on Sen’s capabilities approach to development and Wertsch’s concept of mediated action, we begin an exploration of the utility of the concept of mediated action as a means of characterizing what happens when people engage with ICTs for personal, community, and global development. To a great degree, flexibility built into the design of ICTs facilitates technology appropriation and, in theory, should enable people to pursue the goals that they have reason to value. Even so, we caution against unduly celebrating incidences of ICT appropriation without a full appreciation of the conditions that led to such appropriations.

This note represents our formative ideas on the analytical value of mediated action in the ICTD field. Our goal is to begin exploring different ways to approach the theory and practice of ICTD. No doubt there are several possible frameworks, concepts and models that could be applied to ICTD discussions; we have chosen to start our exploration with mediated action, because we find it to be particularly apt as an analytical tool. In particular it provides an entry point for us to introduce a form of openness that is less evident in conversations about open ICTD - conceptual openness to diverse and non-traditional ideas

about the relationship between ICTs and development. We believe that to be truly open, the ICT-development space requires flexibility (or openness) not only in the design of ICT artifacts, systems, and contexts, but also in ideas about what constitutes ICT appropriation and what counts as development. The title of the paper illustrates our on-going journey through ideas and our own experience of the need for conceptual openness - we began with a fairly clear view that the end-user of technology was and should be the center of attention in ICTD research and practice, but soon came to the realization that there was an even larger frame of action that required our attention. In short, the interaction (the core of mediated action) became the focus of our discussion and we continue to wrestle with the ideas presented here.

This paper is organized as follows: we begin with a brief history of what we believe to be the roots of ICTD - development communication. This is followed by an introduction to the notion of mediated action as proposed by Wertsch (1998). The next section briefly outlines the possible applicability of mediated action to the field of ICTD, after which we present two case studies of mediated action in Ghana and Mexico. We conclude with some thoughts on how the case studies demonstrate the utility of mediated action as an analytical framework.

2. Development Communication – The lost history of ICTD

In the field of development communication, information and communication technologies (ICTs) have always been considered critical agents, indices, and catalysts for social change. As early as the 1950's, when modernization approaches guided the practice and theory of development, communication technologies (particularly mass media) were seen as mechanisms to achieve economic growth, increase literacy, and spread the values of modernity within traditional societies (Lowenthal, 1952/53; Lerner 1958; Rogers, 1962 and 1976; Schramm, 1964). Since then, conceptual revisions of development have continued framing the way development communication scholars and practitioners approach their work and think about what they do (Wilkins & Mody, 2001).

During the last fifty years since development communication was born, three paradigms have guided the theoretical frameworks of the field: 1) the *Modernization paradigm*, 2) the *Dependency paradigm*, and 3) the *Participatory Development paradigm*. Although these paradigms differ significantly in their approaches to the role of ICT in development they share a common set of characteristics that are worth mentioning as a context to understand the theoretical evolution of the field. These characteristics are relevant to the scholarly work in the field as it was known until the late 1990's, and also for more

current studies in the field of ICTD: In all the paradigms, communication and communication technologies are conceived either as an agent, an index, or as a catalyst for social change and to enhance democratic practices. The difference is in the unit of analysis, which was commonly the individual in the *modernization paradigm*, the structure of the world system in *dependency* studies, and the local community in the *participatory paradigm*.

Under the *modernization paradigm*, development was considered a linear and evolutionary process and modernization was equated to the spread of ideas and cultural values from the West (Hettne, 1995). The scholars under this school of thought assumed that the only way for developing countries to follow the path towards modernization was by following the Western model. This paradigm built upon top down approaches to development and focused on the internal causes that deterred developing countries to achieve a higher standard of living. Along these lines, the theories and approaches in development communication emphasized individual psychological factors that could deter or foster the transition from a traditional to a modern society. Communication technologies were conceived as an engine that would help achieve economic growth and as the conduit to help individuals feed their self-spirit of modernity. The *modernization paradigm* never questioned that communication technologies embraced the values that western societies thrive for – rationality, efficiency, systematic organization, individualism, etc., - and that could disrupt local cultures and social practices in developing countries. This paradigm was highly criticized for its ethnocentric bias, technological determinism and because it considered development as an endogenous process that was separated from the cultural and social contexts, and most importantly, from the structures and dynamics of the global system.

The *dependency paradigm* grew as a criticism towards the modernization approach and considered development and underdevelopment an interrelated process that was a product of the capitalist system itself. This approach was unique in the sense that was conceived in Third World Countries, particularly in Latin America with the economists at the Economic Commission for Latin America and the Caribbean (ECLAC). Contrary to the modernization view which searched for the sources of underdevelopment at the internal, individual level, dependency scholars focused on the external causes of development which they found in the structure of the world system. Communication technologies under this view were considered an engine through which developing countries could influence the balance of power within the world system. This view led to the famous New World Information and Communication Order (NWICO) debate in the United Nations Educational and Scientific and Cultural Organization (UNESCO) where countries from the developing world pushed the agenda for a restructuring of the international

communications system. This paradigm came under severe criticisms as well because it concentrated mainly on economic indicators, as did the modernization approach, and the external causes of underdevelopment ignoring the internal power structures in societies that heavily affected the process of development.

Inspired by the work of the Brazilian Paulo Freire (1970, 1994) “Pedagogy of the Oppressed” a new approach in development communication developed. The frustration with past decades of theory and practice of development and development communications directed scholars to look for answers for social change at the community level. The *participatory development paradigm*, generated approaches to development aimed at empowering people at the community level to become participants in the process of development. Embracing cultural diversity, or as Servaes elegantly put it “One World, Different Cultures” (1999), the scholars under this view supported the capacity of local people to decide on the path they would like to follow towards the future. Participation under this view was equated with empowerment, and in turn, empowerment would create the social scenario for generating collective action and social change. Based on this premise, communication technologies became a catalyst for social change, not an agent or an index, but a conduit through which information that empower people could be disseminated enabling them to become key agents and participants of social change. Technology was not considered a neutral object; rather it was conceived as a social, cultural, political and economic phenomenon.

One of the most prevalent criticisms is that participatory communication theories (and the practices) embrace the idea of empowerment without actually prescribing any methods for achieving structural change. In this view empowerment through participation has become just another “quick fix” to development. *Participatory development* is a normative approach, that is to say, it analyzes development “not in terms of how it actually takes place but rather how it should take place. The distinction between positive and normative, ‘is’ versus ‘ought’, has certainly contributed to some intellectual confusion in the field [of development]” (Hettne 1995: 160-161). Even though the theory and practice of development are in a continuous stage of dialogue, the structural social changes so whole-heartedly advocated by participatory development scholars imply a radical reform in developing countries and also in developed ones. The common-held belief that poverty and marginalization could be fought by implementing reforms exclusively at the national level is no longer sustainable. Social change in developing countries is highly interdependent to policy reforms and consumption patterns of more developed countries as well. For example, child labor and sweatshops will exist in China, Thailand,

Vietnam and other less developed countries as long as the demand for cheap manufactured products exist in United States, Canada, Japan, Europe, and even within richer segments of societies in developing countries themselves. In this highly interdependent context, participation for social change must transcend the boundaries of marginalized communities and less developed countries and the theory and practice of participatory development communication need to reflect this interdependence.

The legacy from the last sixty years of development communication thinking has left us with many valuable lessons about the conceptions and misconceptions of the role of communications in the process of social change. And yet, the field seems to be going through a theoretical impasse, a sort of critical stage that could define the future of our discipline. There is no doubt about the relevance of this field in the study of social change today. We live it every day as researchers, citizens, activists, and, some would claim, wishful thinkers. However, as scholars and practitioners, we really need to reassess many common-held assumptions about the definition, or the many definitions of development, the commonly-held characterizations of the interaction between people and ICTs, and the role of this interaction in the development process. Based on this history, we can claim that ICTD as a field of social inquiry is not really all that new. If we look closer at the characterizations of the role of ICT in development elaborated in the three development communication paradigms it is not difficult to identify elements that are commonly integrated into ICTD research and the discourse of the field as it stands today. We see development communication as the precursor of ICTD.¹

3. Mediated Action

Both development communication and ICTD notions of development and the associated roles of information and communications tend to place undue emphasis on one or another component as the driving force of change (often either individuals or a particular ICT tool). This invariably leaves gaps in our understanding, and leads to incomplete (even erroneous) conclusions about the relationship between technology and development processes. Any effort to recognize and accurately represent the complexity of this relationship requires taking the *interaction* between ICTs and individuals as the unit of analysis, in contrast to extant approaches that take individuals or ICTs as the unit of analysis. In this respect, the concept of “mediated action” (Wertsch, 1998) provides a useful framework for revising

¹ A comprehensive literature review of the field of ICTD will be elaborated in the next version of the paper

current discourse on ICTs in development.² Mediated action focuses on “agents and their cultural tools—the mediators of action” (Wertsch, 1998, p.24). From this perspective, one cannot provide an adequate account of an action if the agent and the cultural tool are examined in isolation. An action is more appropriately viewed as an *interaction between* participants, rather than as an *act by* participants.

Mediated action, as outlined by Wertsch (1998, p.25), has ten basic properties:

1. There is an irreducible tension between agent and mediational means.
2. Mediational means are material.
3. Mediated action typically has multiple simultaneous goals.
4. Mediated action is situated on one or more developmental paths.
5. Mediational means constrain as well as enable action.
6. New mediational means transform mediated action.
7. The relationship of agents toward mediational means can be characterized in terms of mastery.
8. The relationship of agents toward mediational means can be characterized in terms of appropriation.
9. Mediational means are often produced for reasons other than to facilitate mediated action.
10. Mediational means are associated with power and authority.

We discuss how these properties come together to represent a comprehensive ways of examining the use of ICTs in any context. One of our major critiques of the ICT-development discourse is that it tends to privilege either users or ICT tools as the primary driving force of action. There is no doubt that a real artifact of some sort exists and is complicit in the interaction.³ Wertsch terms this the *materiality of mediational means* (or cultural tools), explaining that in order for agents to develop the skills to use particular mediational means, they have to interact with its material properties over time. This does not however make the material object the primary force. Rather, the concept of mediated action recognizes an *irreducible tension* between agent and mediational means – that is, mediated action cannot exist without both a cultural tool and a user of the tool, neither can it be reduced to one or the other. The tool on its own has little power (mediated action requires that the cultural tool be actually used), but neither does the agent – thus Wertsch suggests a redefinition of the notion of agent to be seen not as

² Wertsch’s proposal comes out of work in psychology and educational development; however with its attention to issues around human action, agency and society, it is applicable to the general arena of social science

³ Although, as Wertsch notes, materiality does not mean physical – language for instance is considered to be material.

an individual acting alone, but as an “individual-operating-with-mediational-means” (1995, p.64). While mediated action does involve individual elements, and looking at them separately often facilitates analysis, the action cannot be fully understood or represented without considering the joint interaction of the elements involved. From this perspective, while the entry point for discussions of the ICT-development nexus may be an individual element, this irreducible tension should at the very least be acknowledged, if not directly within the discussion, then by making room for appropriate connections to be made.

In addition to focusing on tools or agents, analysts usually highlight affordances (that is, what new tools enable) when contemplating new mediational means. However, in mediated action, the same cultural tool that facilitates new action also imposes new restrictions. The possibility of such new constraints should not be overlooked even as affordances are celebrated or condemned, and the balance between the two bears examination.

The properties of mediated action also address two other critiques of the ICT-development discourse – its tendency to be a-historical and its fairly rigid conception of development. Both the planning of ICT interventions and assessments of ICT impacts are influenced by these tendencies. What mediated action contributes to the discussion is the reminder that mediated action has a historical context and a trajectory along one or more *developmental paths*. Analyses that fail to take history into account may end up being “confused by the appearance of ‘fossilized’ forms of behavior” (Wertsch, 1998, p.35), or giving undue prominence to new mediated actions/mediational tools that are actually more evolutionary than revolutionary. Additionally, much of what is observed in a particular moment of mediated action is the result of contingency and happenstance. This complicates the definition of movement through history – notions of human development invariably involve an ideal end point, a “preferred directionality” (Wertsch, 1998, p.36) towards which efforts are directed. The fact that chance plays a large role in the process of mediated action means that this action cannot be guaranteed to move in the preferred direction, and even when it does, that achievement cannot necessarily be attributed to the deliberate application of a particular cultural tool.

Yet the context of mediated action does not deny the capacity of new cultural tools to *transform* action and contexts. New cultural tools can bring about transformations in mediated action because they unsettle the status quo. However it is not the tool in isolation that brings about change, but the particular mix of tool and agent – different mixes are likely to result in different transformations, ranging from minor changes in the organization of the action, to the emergence of completely new forms of

mediated action. This informs our exploration from two angles – first, in terms of technology appropriation, this property is consistent with a view of appropriation that recognizes a range of (mediated) actions that qualify as appropriation. Second, in terms of ICT impacts, this is consistent with a view that holds impact to have diverse forms and multiple dimensions that may or may not conform to expectations.

As several commentaries have noted, popular trends in the uses of ICTs often deviate significantly from the purposes for which the technologies were developed (e.g., Fischer, 1995; Williams, Stewart & Slack, 2005). Wertsch argues, in the ninth property of mediated action, that consumption of mediational means should be examined together with their *production*. One error that this approach helps to avoid is that of assuming that cultural tools emerge in response to the needs of agents (Wertsch, 1995, p.58). Consequently, it is important to account for purpose or goals when viewing mediated action. Another property of mediated action highlights the fact that mediated action tends to have *multiple, simultaneous, and often conflicting goals*. Conflicts could arise because individual agents have multiple goals and/or because the agent's goals are not completely consistent with the goals for which the mediational means were developed. The significance of this for our discussion is that it would be erroneous to *a priori* associate an observed action with a single well defined goal. Furthermore, for any ICT for development project, important considerations to bear in mind include the extent to which an ICT for development tool is an accurate representation of the needs of the target agents, and what the response should be if/when a particular tool is not used in the expected manner. Whose motivations and goals are paramount in assessments of ICTs in development?

The function of *power and authority* in mediated action does not need much elaboration. On the one hand, employment of certain cultural tools can impart authority to the user. In addition power holders can direct rules around acceptable uses of cultural tools. On the other hand, new cultural tools can also change power structures to different degrees.

Finally, in mediated action, the relationship of agents to mediational means can be characterized in terms of mastery or in terms of appropriation, where mastery is defined as “knowing how ... to use a mediational means with facility” (Wertsch, 1995, p.50), and appropriation is “the process ... of taking something that belongs to others and making it one's own” (Wertsch, 1995, p.53). This distinction is a useful one in that it provides a means to distinguish between simple use of a technology, and instances that appear to go beyond mere use (what one might call “appropriation”). Admittedly, it also complicates – how does one ascertain whether an action demonstrates mastery versus appropriation?

Who makes that determination – e.g., the researcher, or the user? What does it really mean to make a technology “one’s own”?

4. ICT in Development as Mediated Action or When Sen Meets Wertsch

Viewing human-technology interaction as mediated action can inform the discourse on ICTs in developing countries in at least three ways – first, in the overall approach to the role of ICTs in facilitating development; second, in the characterization of the relationship between people and ICTs; and third, in the conceptualization of development.

First, in terms of the general approach to ICTD, reframing the discourse in terms of mediated action creates a shift in the conversation. Because of the irreducible tension between agent and tool, the conversation is no longer about what ICTs “do” to people or situations, nor is it about what people do with ICTs. Instead, the issue of interest is how ICTs and people interact, what features the interaction has, and what emerges from that interaction. Whether related to research projects, development projects, or commentary on development issues, this orientation alone could alter expectations, observations and interpretations. When the unit of analysis is mediated action, as Wertsch recommends, Burke’s pentad of act, scene, agent, agency, and purpose (or what, where, who, how and why) provides the framework for inquiry.

Second, over the years, the relationship between people and ICTs has been described in a variety of ways – diffusion, adoption, consumption, use, appropriation, for example, with technology appropriation being the current norm. Each characterization has its connotations - for example, diffusion characterizes people according to the speed with which they adopt a new technology, while technology appropriation is oriented towards capturing evidence of user adaptations of technology. Notions of technology appropriation vary widely, from those that define it as any type of use (e.g., Orlikowski, 1992; Stewart, 2003), to those that see it primarily as uses that are different from what was intended or expected in the creation of the technology (e.g., Majchrzak, Rice, Malhotra, King & Ba, 2000; Bar, Pisani & Weber, 2007). At the core of technology appropriation is the idea that users are active consumers of technology, often extending their consumption into production behavior (e.g., Eglash, 2004). In this, the notion of technology appropriation has come a long way in transforming thinking about who participates in the production and consumption of technology. Nevertheless, because

current notions focus on the user, the ability of technological and institutional forces to shape user behavior is sometimes overlooked. Admittedly, some characterizations of technology appropriation do acknowledge the influence of other factors, notably Orlikowski who draws on Giddens's structuralist theory. Newer conceptualizations do however appear to give prominence to users. On the other hand, within the framework of mediated action, technology appropriation is just one element in the scene, representing a particular type of relationship that a user could have with a technology. When the unit of analysis is mediated action, the lens is broadened to capture multiple actors, behaviors, goals and outcomes.

Thirdly, by explicitly placing mediated action within an historical context, and problematizing development by acknowledging its value-ladenness and the likely existence of multiple development paths, the mediated action framework draws our attention to the need to consider whose priorities and goals are brought to bear on implementation and assessments of "development" interventions. Just as mediated action allows us to expand the analytical landscape of human-technology interaction beyond the agent or the cultural tool, Sen's (1999) approach to "development as freedom" provides a fruitful building block to inform our understanding of what constitutes development, for who, and how we go about assessing the success or failures of development projects. In few words, Sen's capabilities approach provides us with the analytical space to bring mediated action into the context of development.

Although a detailed description of how both approaches (mediated action and capabilities) complement each other it is outside the scope at this stage of the paper it is nonetheless relevant to identify some of the analytical synergies that could expand our understanding of the role of the human-ICT interaction in development outcomes. First and foremost, agency lies at the heart of both approaches although it manifests itself in different forms. For Sen (*ibid*), agency is defined as the freedom of an individual to act and achieve "to bring about change, and whose achievements can be judged in terms of her own values and objectives, whether we assess them in terms of some external criteria as well." For Wertsch, agency manifests itself in the very interaction with cultural tools that is to say in the process of an "individual-operating-with-mediational-means." (1995:64). And second, mediated action and development as freedom are both placed in a historical context and this allows for the analysis of the interaction between an agent and cultural tools, in the case of the former, and the capabilities of that agent "to lead the kind lives they value", for the latter, to invariably recognize the existence of multiple goals and multiple development paths. Wertsch (*ibid*) elegantly elaborates on the importance of context in the

analysis of mediated action as follows: "The task of a socio-cultural approach to social inquiry is to explicate the relations the human actions and the cultural, institutional, and historical context in which this action occurs. The particular type of the human action [in this case] is mediated action. Mediated action is a natural candidate for a unit of analysis in socio cultural research because it provides a kind of natural link between action, including mental action, and the cultural, institutional, and historical context in which such action occurs. This is so because the mediational means, or cultural tools are inherently situated culturally, institutionally, and historically" (P.24)

Mediated action is shaped by a set of capabilities that an agent has at her disposal and can select from "to promote her ends" or "functionings", as Sen defines them, that she has reason to value. Functionings, in this context, represent the outcome. Capabilities are in turn determined not only by individual characteristics but most importantly perhaps by social arrangements (society & the State) thus, so it is mediated action. In Sen's approach, "the capacity to achieve" (freedom) is both the aim and the principal means of development – the capacity to interact with ICT (mediated action) is in itself a kind of freedom. However, the opportunity to translate this capacity into the functionings that an individual has reason to value is also dependent on other factors such as: 1) other kind of substantive freedoms at her disposal; 2) social arrangements; and 3) agency and judgment of the individual

From Sen's perspective, the process aspect and the opportunity aspect go hand in hand in the analysis of development as freedom. As he (ibid) succinctly states: "In pursuing development as freedom we have to examine – in addition to the freedoms involved in political, social, and economic processes – the extent to which people have the opportunity to achieve outcomes that they value and have reason to value" (p. 291). This could prevent researchers from falling into the unquestioned celebrations of the power of ICT to advocate social change without looking at: 1) the constraints of the technology; and 2) the ability of people to translate their capability set into the functionings they have reason to value. Just the fact that the interaction between an agent and a cultural tool, in this case ICT, exists does not automatically translate into social, economic, or political outcomes or functionings, borrowing Sen's term, for the agent.

5. CASE STUDIES

5.1 Emergence of the Mobile Payphone System in Ghana

The emergence of mobile payphones in Ghana and their flourishing between 2004 and 2005 provides a useful phenomenon to examine through the lens of mediated action. These small-scale payphone services offered by micro-entrepreneurs via mobile phones attracted a great deal of attention in their day, from the formal Grameen village phone lady, to the independent individual using a personal mobile phone as a payphone. This development has been largely portrayed either as evidence of the power of mobile phone technology, or as a manifestation of the creativity and entrepreneurial spirit of low-income earners (e.g. Bayes, von Braun, & Akhter, 1999; Day, 2005). When viewed as a triumph of mobile phone technology, the mobile payphone system appears to be a technology-driven phenomenon; when viewed as an example of user creativity it appears to have been driven by end-users. A deeper look at the events leading up to and propelling the growth of the medium in Ghana reveals a slightly more complex story – the confluence of a variety of events, actors and motivations that culminated in the mobile payphone phenomenon. Approaching this analytically as a manifestation of mediated action enables us to pay attention to all these elements (even if in varying degrees). This case study presents the who, where, how, why and so what of the mobile payphone system as it occurred in Ghana.⁴

The first version of a mobile payphone in Ghana was introduced by the Spacefon network (now known as MTN) sometime in 2004, in response to interconnection problems with the incumbent fixed line network provider, Ghana Telecom.⁵ These problems have been attributed to deliberate attempts by Ghana Telecom to inhibit the performance of Spacefon, which had become the premier mobile phone provider in the country.⁶ Communication centers⁷ were particularly affected by this situation, since they were the major source of telephony for most of the population, and all run on the Ghana Telecom fixed line network. In response to promptings from the communication centers to address the problem, Spacefon provided them with fixed wireless telephone sets running on the Spacefon network, to enable communication center users to bypass Ghana Telecom when they wanted to make calls to Spacefon subscribers. The micro-entrepreneurial model emerged when these fixed wireless phones found their way into the hands of certain individuals who began to sell phone calls in roadside kiosks, convenience

⁴ This case study is derived from a research project on the appropriation of mobile phones in Ghana (Sey, 2008). Data came mainly from personal observation and interviews during field visits between 2005 and 2007. Additional sources of information are Ajao (2005b), Cudjoe (2005a, 2005b), Day (2005), and Mobile Africa (May 2005, July 2005).

⁵ See Frempong (2004), Alhassan (2003), and Haggarty, Shirley, & Wallsten (2003) for discussions of the turbulent relationships between Ghana Telecom and other telephone network providers.

⁶ Ghana Telecom denies this claim

⁷ Companies providing telephone, fax and general secretarial services to the general public

stores and other small business setups. All of these were initially associated with the Spacefon network, hence their popular designation as “Space-to-Space.”⁸ A new industry in telephone service provision had emerged, with reportedly about 25,000 mobile payphone operators around the country by 2005 (Day, 2005).

Although there was no contractual or professional relationship between Space-to-Space operators and Spacefon, the fixed wireless phone sets were configured so that they could only operate on the Spacefon network.⁹ Being the dominant network, calls to Spacefon subscribers from these roadside airtime resellers cost less than calls to other networks. Of course it would not have been a successful venture to resell mobile phone calls in this way if there was no market for that service. Payphone users (including mobile phone subscribers and non-subscribers) were an important participant in the action. For all users, the near ubiquity of mobile payphones (especially in urban areas) made them more convenient than trying to find a traditional communication center. For those who did not own a personal mobile phone at all, mobile payphones were a means for them to communicate with others – generally using payphones to make calls, and wherever possible, using the mobile phone of a relation or friend to receive calls. Mobile phone subscribers also found payphones useful, but only when they had run out of airtime and could not or were not ready to top up, or for other emergency situations such as a depleted phone battery, or desire to avoid caller identification.

In response to these developments, mobile phone networks began to roll out branded payphone products. Spacefon initiated two versions of a mobile payphone service (i-Tel ‘Pop’) in 2005. The first was a manned service station where users could make wireless phone calls from wall-mounted payphones. The second was a mobile service provided by bicycle riders. Subsequently, rather than modify its anti-competitive stance and make access to and from its networks easier for rival mobile phone companies, the incumbent telecommunications provider, Ghana Telecom, launched its own mobile payphone system, ONE4ALL. Other networks introduced similar products. None of these were as successful as Space-to-Space.

Although mobile phone network providers were required to meet certain universal access obligations, this did not include the provision of payphones, thus mobile telephony was not associated with shared access. The appropriation of mobile phones as a commercial shared means of communication was

⁸ Because they represented the ability to make a call from one Spacefon number to another Spacefon number.

⁹ Although since the phones were not manufactured by Spacefon, technically, it should have been possible to replace the SIM card with that of any other cell phone company, thus enabling access to in-network calls for subscribers on all networks.

triggered by service providers (communication centers and telecom networks), not consumers, directly influenced by deficiencies in service provision that threatened to damage Spacefon's market share. On the other hand, the extension of shared mobile phone access from the confines of the communication center onto the streets was largely an initiative by consumers, who saw a livelihood opportunity worth exploring. It could be said that the development of Space-to-Space was an unconscious (or semi-conscious) collaboration between Spacefon and the payphone operators interacting with the unique features of mobile phone technology, the goal of which was to resolve the connectivity problem inconveniencing both the network and its subscribers, while simultaneously opening up a new intermediary role akin to that played by communication centers.

Linking this to development then, the question is so what? What are the outcomes of this mediated action and what do they mean in relation to the goals of the participants and other less involved parties? Multiple outcomes can be identified – expansion of access and telephony options for low income populations, improved connectivity via in-network calls, and employment or income generation for both payphone service providers and mobile phone networks. To what extent can any of these be classified as “development”? For example, in terms of telecom access it could be said that an improvement occurred – but interviews with payphone users also showed that while appreciative of payphones, respondents considered them an inferior alternative to personal mobile phone ownership. Consequently, when after about one year, a new mediational tool (technology for micro airtime transfers) entered the scene payphone users were quick to abandon mobile payphones for their preferred form of mediated action – personal mobile phone ownership.¹⁰ The fall-out was a collapse of the mobile payphone industry, with the primary losers being payphone operators (networks and users appear to have had overall benefits in increased personal subscriptions).

5.2 The evolution of the information and communications network of the Zapatista Movement in Chiapas, Mexico¹¹

The last decade has seen an exponential growth of civil society organizations and social movements collaborating with one and other in the quest for social change. Facilitated in part by the interaction with different ICTs these civil society actors are creating and re-creating alternative spaces of communication to voice their concerns, raise awareness of locally engrained social struggles beyond

¹⁰ See Sey (2008) for details.

¹¹ This case study is based on data collected during 2005 as part of the dissertation research (see Garrido, 2006 for additional reference).

their borders, and build local, national, and transnational alliances with other actors working together against the negative effects of what they perceive as a socially predatory economic globalization process. One of the best known examples is the Zapatista Movement in Chiapas, Mexico. The skillful interaction between the Zapatista Movement and different cultural tools, language and old and new ICT among the most important, allowed the Zapatistas to build an information and communications network that laid at the heart of the movement's strategy in the quest for social change. It is precisely the evolution of the Zapatista information and communications network from 1994 – 2005 that serves as a unit of analysis to explore the role of social movements in development through the lens of mediated action.

The Zapatista Movement became known to the world on January 1st 1994 when an army constituted of indigenous peasants of Mayan origin united under the name of the *EZLN Ejército Zapatista para la Liberación Nacional (Zapatista National Liberation Army)* rose up in arms and took seven towns of the Mexican southern state of Chiapas (Schulz, 1998). Basing their struggle on a list of eleven demands – work, land, housing, food, health care, education, independence, freedom, democracy, justice and peace – the *Zapatista Movement* placed the indigenous people in the country at the heart of a call for a radical transformation of the political, economic, and power system in Chiapas, in Mexico, and in other regions of the world. The rapid flow of news from the Lacandon Jungle to different national and international media outlets aided by information about the uprising disseminated on the Internet put the movement and Chiapas at the center of the world public opinion within a few days (*ibid*).

The uprising was nourished with an urgent need to fight together against the extreme poverty and discrimination that has deterred, historically, the social and economic development of indigenous communities in Mexico and waged against the policies of *neoliberalismo* that had just exacerbated these conditions. On the very same day that the *Zapatista* uprising occurred, government officials and business leaders from Mexico, United States, and Canada were celebrating the triumph of economic liberalization, since on January 1st of 1994 the North America Free Trade Agreement (NAFTA) took effect, opening the markets of the three countries to the free flow of goods and services.

The *Zapatista Movement* made evident to the world that the insertion of Mexico into the world economy could not be successfully achieved without addressing the most pressing needs of the always-ignored indigenous peasants: access to land, cultural recognition and respect for indigenous traditions, and autonomy. On their second Communiqué dated January 6th 1994, and widely disseminated through traditional and new media, the *Zapatistas* called upon civil society - “their Mexican brothers and sisters,

the millions of disposed, the workers, the students, the *campesinos* and progressives of other countries” - to support their struggle for democracy, liberty, and social justice (EZLN, 1994a). The national and international support, material or ideological, that the *Zapatista Movement* received opened an opportunity for indigenous *Zapatista* communities in Chiapas to transform their social role from reactors to top-down economic policies and political practices to central actors in the search for an alternative development model to neoliberal globalization.

Using neoliberalism as a “frame of resistance” (Olesen, 2005) the *Zapatista* mediated action resonated with civil society actors in many places of the world. Language became the most important meditational mean to shape and promote this frame of resistance. Even though the movement was initiated by local indigenous people looking for solutions to local problems, their fight became an icon for social justice for every kind of marginalized and exploited group around the world (Cleaver, 1998). A multiplicity of civil society actors working in areas as diverse as human rights, women’s rights, indigenous rights, fair trade, international peace, alternative development, citizen journalism to name a few, constitute one of the building blocks that fed and shaped the *Zapatista* information and communications network¹².

Interacting in innovative ways with email, distribution lists, websites, faxes, cell phones, radio and Internet radio, and community newsletters, the *Zapatistas* and other civil society actors created spaces for collaboration, coordinated action, and to jointly developed alternatives to the dominant economic model. As new meditational means became available (for example, blogs), the *Zapatista* information and communication network evolved and so did the strategies for coordinated action and mobilization.

Since a full analysis of the development outcomes of the *Zapatista* information and communications network (or the so what?) is outside the scope of this paper, the following examples illustrate some of the dynamics of the *Zapatista* mediated action and the effects of the interaction with different cultural tools for the members of the Movement and its supporters: 1) Creating bridges of information among the *Zapatista* communities; 2) Creating bridges of information among the civil society organizations that supported the Movement; and 3) Bringing *Zapatista* products to international markets and supporting the sustainable development of the indigenous communities.

1. Creating bridges of information and communication among Zapatista communities.

¹² See Garrido & Halavais (2003) for a thorough elaboration of the structure of the Zapastista Network as represented in cyberspace

These bridges used different media outlets to reach the communities across *Zapatista* territory. Since access to communication infrastructure is really challenging, especially in the remotes areas near the Lacandon Jungle, these bridges were crucial for keeping community members informed of different activities while providing a channel for their voice to be heard. For example, the Melel Xojobal¹³ (which means “true light” in the Tzotzil language) email distribution list is an information system created by and for the indigenous communities. Created in 1999 it provides a weekly synthesis of relevant news and includes a space where communities denounce human rights abuses and make requests of different kinds to the rest of the network. The Melel Xojobal bulletin, in turn, is circulated in the *Zapatista* network allowing network actors to address these requests.

An example of the convergence between traditional and new media is Radio Insurgente¹⁴, which, as described in the website, is the official voice of the *Zapatista Movement*. Radio Insurgente broadcasts programs and music in different indigenous languages (Tzotzil, Tzeltal, Chol, Tojolabal) through six FM radio stations and short wave radio. These programs are also uploaded periodically to the website for people with access to the Internet and who are interested in listening to the voice of the *Zapatista* communities. Although Radio Insurgente broadcasting is not all exclusively geared towards women, it gives an important space for programs discussing gender and women’s issues. Women are an integral part in the process of reporting and editing of different programs. The lack of access to communications and electricity in most of the communities makes the task of collecting and disseminating information very daunting, and radio remains the most important venue of information for indigenous people. Converging traditional media (spoken and written) with new information technologies is enabling communities to maintain communication and it is also providing *Zapatista* men and women with the opportunity to learn about other social struggles around the world.

2. Bridges among Zapatista information and communications network actors

In terms of information and communication bridges that link the communities to the larger network and the rest of the network actors themselves one of the most important was the Chiapas95¹⁵ email distribution list. Created at the end of 1994 by Harry Cleaver, a faculty member at the University of Texas in Austin, Chiapas95 constantly fed the information and communication circuits of the *Zapatista* network with articles from newspapers, relevant research, postings of network actors informing the

¹³ <http://www.laneta.apc.org/mailman/listinfo/melel-s>

¹⁴ <http://www.radioinsurgente.org>

¹⁵ <http://www.eco.utexas.edu/Homepages/Faculty/Cleaver/chiapas95.html>

larger network of their current activities or plans, and the *Zapatista Communiqués*. Most importantly, it provided one of the most important spaces to coordinate simultaneous actions in response to a *Zapatista* and the unfolding events in Chiapas. An example of the effects of the interaction with the Chiapas95 distribution list was the coordination of 230 protests, engaging more than 200,000 people in 27 countries as a response of a *Zapatista Communiqué*¹⁶ denouncing the massacre of 45 people in the community of Acteal and asking national and international civil society to demand justice.

3. Bringing Zapatista products to international markets and supporting the sustainable development of the indigenous communities

In the autonomous communities in Chiapas, cooperatives involving both men and women have been forming in order to organize to produce and sell diverse products at a fair price. The cooperatives are a way of looking for economic alternatives to improve the living conditions of the autonomous communities as well as the defense of their identity. The cooperatives provide an income, which allows the communities to improve their nutrition, health, education, and to continue organizing. “By supporting these cooperatives network actors address the economic needs of the producers and their families, and also contribute to the development of the whole community and their struggle for autonomy and indigenous rights” (Appel, personal communication, 2005).

One of the most important effects of the Zapatista mediated action was the possibility to open channels for importing fair trade and organic products mainly to Europe, Canada, and the United States. Café Rebelión¹⁷ for example, started in 1996 at the request of a *Zapatista* Commander named David. It imports products from four cooperatives that group *Zapatista* producers from the Chiapas Highlands: MutVitz honey and coffee cooperative, Yachil Xojobal Chulchan (New Light from the Sky) Coffee Cooperative, and the women Xulu'm Chon Weaving Cooperative founded in 1998, 1999, and 2000 respectively. Café Rebelión imported in 2005 only thirty five tons of coffee, and its work has inspired other network actors, particularly the *Zapatista* Solidarity Committees in Europe who now also import coffee, honey, and weaving to that market. There are eleven or so of these network actors in Europe and other organizations that commercialize fair trade products from different countries not only Chiapas. Some examples of *Zapatista* European Solidarity Committees are: Café Libertad¹⁸ in Hamburg,

¹⁶ “In Response to the Acteal Massacre”, December 27th, 1997. Retrieved on January 4th from: <http://palabra.ezln.org.mx/>

¹⁷ <http://www.caferebellion.com/>

¹⁸ <http://www.cafe-libertad.de/>

Germany, Distribution network of *Mut Vitz* and *Yachil Xojobal Chulchan* coffee in Switzerland¹⁹ and Italy²⁰, *Andines Commerce équitable*, in France, and *Colectivo de Solidaridad con la Rebelion Zapatista en Barcelona*²¹, in Spain.

Conclusion: Mediated Action and Open ICTD...

The mediated action concept is useful in that it provides an analytical perspective that compels attention to a broader scene of action than that provided by the concept of technology appropriation. The action, or rather interaction, involves several elements including human actors (such as mobile phone network providers, their local and foreign suppliers, mobile phone retail companies, micro-entrepreneurs, mobile phone subscribers, and mobile phone users²² in the case of Ghana, and social movements networks, indigenous communities, mass media, and civil society actors in the case of Mexico); a socio-cultural, economic and technological context; a particular cultural tool or mediational means (mobile phone technology, old and new ICTs, and language); and a variety of motivations. Because it is an interaction, one cannot elevate one element above another, except by empirically establishing that such elevation is justified. This compels a re-visioning of the mobile payphone phenomenon in Ghana – is it an example of end-user technology appropriation, or perhaps more accurately characterized as the working-out of a particular configuration of technology, service providers, consumers and historical context, of which technology appropriation is but one part? Similarly, is the use of ICTs by the Zapatista Movement an example of indigenous communities appropriating technology for social change? Was the evolution of the Zapatista information and communication network an unquestionably success of the power of ICTs to improve democratic and participatory processes? Or was it a reflection of the particular socio-economic context in Chiapas and other regions of the world during that period of time? The answers to these questions do not change any of the facts of the cases, nor necessarily the conclusions about what happened, who did what and

¹⁹ <http://www.mutvitzkaffe.org/>

²⁰ <http://www.andines.com/>

²¹ <http://chiapas.pangea.org/home/mexp.htm>

²² Mobile phone subscribers are defined as individuals who have subscribed to a mobile phone network, while mobile phone users are individuals who do not own a subscription but nevertheless use mobile phones owned by others.

so on. They could, however, make for a richer, deeper and truer analysis, and perhaps affect how we answer the “so-what?” question.

Our thoughts on this issue are far from complete and we anticipate continuing to shape and re-shape our ideas over time.

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