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10

Translating Magic: The Charisma of One Laptop per Child's XO Laptop in Paraguay

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In April 2008 liberal candidate Fernando Lugo won the Paraguayan presidency with 41 percent of the vote. It was the first time Paraguay's conservative Colorado party had relinquished power in sixty-one years and one of the few peaceful transfers of power between parties in the country's nearly two-hundred-year history (Nickson 2009). Known by his supporters as the "Bishop of the Poor" for his humanitarian service as a Catholic priest in one of Paraguay's poorest districts, Lugo centered his campaign on reducing the nation's bleak social inequalities and widespread corruption (Economist 2008; Nickson 2009). Lugo's messages of hope and reform lasted beyond his election. During my fieldwork in 2010, many told me about their newfound hopes for Paraguay's future on the

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world stage, even as Lugo became embroiled in scandal and faltered in implementing the dramatic changes he had promised (Economist 2009; Prensa Internacional 2009).

Also in 2008, two elite, well-connected Paraguayans, both fresh out of college (one from Tufts University in Massachusetts, one from the Catholic University in Asunción), took up the banner of hope and steered it toward education. Captivated by the promises of the One Laptop per Child (OLPC) project—and one motivated by nostalgia for his own experiences with computers as a child, which inspired him to become a skilled software engineer—the two formed a nongovernmental organization (NGO) called Paraguay Educa to bring OLPC's distinctive laptops to their country. In September 2008, one month after Lugo took office, they explained their motivations for the project in an article in *ABC Color*, one of Paraguay's two major newspapers and a staunch supporter of the project (ABC Color 2008). Their dream of producing technologically savvy, passionate learners by giving them their own laptops was inspiring to many who became involved with the project, but it was not unique. In fact, much of the vision expressed in that 2008 news article was drawn directly from OLPC's promotional materials, from the hyperbolic list of benefits including customized learning software, rugged construction, and a state-of-the-art screen (OLPC 2011) to the project's Five Core Principles of child ownership, low ages, saturation,

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connection, and free/open source (OLPC 2012a). The vision that Paraguay Educa and Cambridge, Massachusetts–based OLPC shared was that their laptop, called the XO, had the power to change a learning culture through the individual child's interactions with it (Papert 1980, 9, 37), making up for a lack of local educational infrastructure and producing children adept at the kind of individualistic mathematical thinking valued in computer engineering cultures (Papert 1993; Negroponte and Bender 2007).

Paraguay Educa's faithful adherence to One Laptop per Child's vision could be seen as problematic: though independent of OLPC, Paraguay Educa nonetheless uncritically adopted a set of ideals largely developed at an elite institution, the Massachusetts Institute of Technology (MIT), in the United States, a country with a history of both military and cultural imperialism in the region. However, this chapter will demonstrate that the hopes held by those using the laptops day to day often did not coincide with those of either OLPC or Paraguay Educa, instead symbolizing many other possible futures for Paraguay.

To explain the laptop's symbolic power, I develop the idea of a *charismatic object*. Charisma as a sociological construct was theorized by Max Weber (1947) to describe the exceptional, even magical, authority that religious leaders seem to have over followers. Though *charisma* usually refers to the power of humans, not objects, the word has been applied to nonhumans as well. Maria

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Stavrinaki describes the Bauhaus African Chair as a charismatic object based on its portrayal within the Bauhaus community, though she does not dwell long on the idea of charisma itself (Stavrinaki 2010). Relatedly, Anna Tsing (2000) discusses how the *idea* of globalization has been charismatic to some academics who uncritically naturalize or even reinforce globalist agendas. Tsing's model of charisma—a destabilizing force that not only elicits excitement but can produce material effects in the world (even if those material effects differ from those that were promised)—is at play in this chapter as well.[1]

Distinct from fetishism, which theorizes the fixation on the materiality of the presumably passive object itself as a source of power, a charismatic object derives its power experientially and symbolically through the possibility or promise of *action*—what is important is not what the object *is* but what it promises to *do*. As McIntosh (1970) explains, "charisma is not so much a quality as an experience. The charismatic object or person is *experienced* as possessed by and transmitting an uncanny and compelling force" (emphasis added). Charisma implies a persistence of this compelling force even when an object's actions do not match its promises—hence the magical element of charisma.

As I argue elsewhere (Ames 2013, Ames and Rosner 2014), a key component of the XO laptop's charisma among many of OLPC's developers and donors is its ability to evoke the nostalgic and often individualist stories that many

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in the technology community tell about their own childhood experiences with computers. It is this charisma that Paraguay Educa initially adopted and promoted. However, we will see here that the charismatic authority the XO had among many of its day-to-day users in Paraguay often took different forms, less tied to the ideologies of OLPC than to more general dreams of an information-rich, Internet-enabled future.

The charisma of OLPC's XO laptop takes on a different valence in light of the social history of technological adoption, adaptation, and innovation in Latin America. Projects in ten Latin American countries account for 85 percent of the XOs in use around the world (Klein and Holt 2012; Warschauer and Ames 2010).[2] The project's tensions around how technology is adopted, and on whose terms, have previously surfaced in other projects across Latin America: indeed, Lemon and Medina's historical review in this volume points to the histories of other such projects. Elsewhere in this volume, Chan discusses the resurrection of one of the largest and most troubled OLPC projects in Peru, particularly the negotiations between local and international developers in Puno, Peru, to reappropriate the laptops as tools for local pride and activism. Further afield, Medina's (2011) account of the negotiations between local actors and international "experts" over the utopian visions of a cybernetic society in Chile bears resemblance to the negotiations between Paraguay Educa and teachers.

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Likewise, Hagood's description of Argentina's dreams for nuclear energy (this volume) and Kreimer and Zabala's (2007) discussion of the compelling "fictions" around Chagas disease in Argentina have parallels in the charismatic stories that circulate about OLPC's laptop in Paraguay and across Latin America. More broadly, the differences between "imported" and locally developed meanings of OLPC's laptop are yet another instantiation of Vessuri's (1987) discussion of development versus dependency in early Latin American science and technology studies.

In the second half of 2008, as Paraguay's new president settled into his duties, Paraguay Educa's founders used their family connections and a captivating story about the promise of OLPC laptops to secure financial, political, and infrastructural support from a number of local and international sources. With the help of a donation from the philanthropic arm of Swift Group, a European banking conglomerate, they purchased 4,000 first-generation XO laptops from OLPC, which arrived in early 2009 (ABC Color 2008). For Phase I of the project in April 2009, Paraguay Educa distributed these XOs to all students in grades one through six (ages six through twelve) and their teachers in ten schools in the small municipality of Caacupé, fifty kilometers east of the capital Asunción. In May 2011, they purchased and gave an additional 5,000 second-generation XO laptops to all primary-school students and teachers in the other twenty-six schools in the

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municipality in Phase II of the project. Throughout these deployments, Paraguay Educa remained committed to OLPC's ideological roots even as others developed divergent visions, as we will see.

Ideological Worker or Toy? Diverse Translations of the XO

The remainder of the chapter draws on six months of ethnographic fieldwork in the Phase I and Phase II schools in Paraguay to explore whether and how meanings of the XO laptop preferred by the project's creators and sponsors were taken up, resisted, or selectively shaped by local actors in the laptop's use.[3] OLPC and Paraguay Educa promoted meanings that revolved around the tenets of *constructionism*, a learning theory developed over some forty years by former MIT professor and OLPC advisor Seymour Papert. Constructionism, the opposite of "instructionism" (or passive listening and repeating with a teacher), valorizes self-directed learning through active creation using a computer (Papert 1980, 7, 31–32, 115).[4] OLPC's leadership and mission statement openly acknowledge the project's constructionist roots (Negroponte and Bender 2007), asserting moreover that constructionism is the *only* path to really learning how to learn. As OLPC's mission statement says, "constructionism emphasizes what Papert calls 'learning learning' as the fundamental educational experience. A computer uniquely fosters

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learning learning by allowing children to 'think about thinking,' in ways that are otherwise impossible" (OLPC 2012b). Though claiming to tap into children's innate desires to learn rather than promoting a particular type of knowledge, constructionism ultimately centers on students' learning to "think like a machine," culminating in learning to program the machine itself (Ames 2013).

Papert further argued that a computer was an exemplary apparatus for the ideological work of constructionism. *Ideological work* is described by Bennett Berger (1981) not as state-sponsored dogma but as the more informal—though still powerful—negotiations between ideals and real life on late-1970s "hippie" communes. Here, the ideological work of the project is constructionist learning, and according to constructionism itself, the best ideological worker was a computer. Papert described computers as "the Proteus of machines," appealing to many audiences (Papert 1980, viii) and, like videogames, exerting a charismatic "holding power" over children that most teacher-led classroom learning lacked (Papert 1993, 3–5). He further claimed that specially designed "learning machines" could "be carriers of powerful ideas and of the seeds of cultural change" (Papert 1980, 4) and would naturally replace traditional "instructionist" classrooms in the marketplace of educational innovation (Papert 1993, 8–9).

In practice, how independent could OLPC's laptop be as an ideological worker for constructionism? From the accounts of researchers and visiting

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journalists, the deployments of 15,000 laptops in Birmingham, Alabama (Warschauer, Cotten, and Ames 2012), and 980,000 laptops in Peru (Derndorfer 2010a; Cristia et al. 2012) have struggled from the lack of social and infrastructural investment beyond handing out the laptops themselves. In many schools in these areas, the laptops are not used at all, suggesting that laptops alone are insufficient in promoting constructionist learning.

Paraguay Educa chose a different path.[5] Shortly after its founding in 2008, the NGO's staff, following the advice of Paraguay's new president (ABC Color 2008), decided to encourage classroom laptop use with teacher training. The employees of Paraguay Educa, still numbering just around half a dozen and lacking much teaching experience themselves, recruited volunteers to lead training sessions for the teachers in the ten Phase I schools. They spent October 2008 familiarizing these trainers with the laptop's functions (Paraguay Educa 2009), and for two weeks in December 2008 these trainers taught all of the teachers from the ten Phase I schools what they had learned (Paraguay Educa 2008).

The focus of this training session, however, was on basic operations such as using the web browser, camera, and word processing, rather than more concrete lessons on how the laptop could be integrated with existing curricula. Moreover, in 2010 interviews, teachers reported that there was little follow-up

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with them in the months after this training session. Even teachers who would later become the strongest advocates for the program told me that they were left with little idea how to use the laptop pedagogically in that first year, and many struggled enough with basic operations like searching the web or checking their email that they hardly used the laptops at all. One fifth-grade teacher explained, "When I did the teacher training, it was one week and only about the Internet, and Paint and Write. We did not know what to do later."[6]

Some of this difficulty was due to context: before receiving an XO, only one in four teachers had had a computer at home, only one in eight had Internet access, and less than half had *any* access to or experience with a computer (though all had mobile phones and nearly all had televisions). This lack of experience with computers in general compounded the difficulty the teachers had in using a laptop scaled for children, with unfamiliar software and sometimes unreliable hardware (Warschauer and Ames 2010).

As a result, the meanings that teachers and students developed about the XO laptop that first year diverged significantly from Paraguay Educa's and OLPC's. Many told me that they had viewed the XO laptop more as a brightly colored plastic plaything than as a useful tool for learning. One school director said that she and her colleagues "thought the laptops were just a toy for games," especially when they saw their students and their own children using them as

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media consumption devices for videogames, videos, and music. And rather than thinking of it as a *useful* toy, the teachers made clear from their tone that seeing the XO as a toy was equivalent to writing it off entirely.

Indeed, the ideological work that the laptop appeared to accomplish on its own—and the charisma it held (and continues to hold) for its child users—did not consist of students learning to "think like a machine" in the ways described by constructionism, where students develop an intuitive understanding of mathematics, but of students using the machine as a media device. Even during my fieldwork in 2010 (nearly two years into the project), almost all of the many hours of children's unstructured laptop use I observed—before and after school, during recess, and often at home—was still focused on videogames and media consumption. While constructionism embraces play, the kind of play I witnessed was not the mathematically oriented version described by constructionism, but more like using an interactive television, where the focus was on the products of large media corporations. Paraguay Educa, lacking day-to-day contact with students and teachers throughout 2009, was not present often enough to reinforce a different view, and the laptop by itself was not inspiring the kind of proto-programming exploration for which it was designed.

Seeing the laptop as a toy also meant that the children, parents, and teachers who were involved with the project that first year did not see a particular

need to care for it. Though the laptop was designed ruggedly for child ownership, it still did not stand up to the actual roughness of children: one year and three months after Paraguay Educa's Phase I laptops were handed out, 15 percent of the laptops and 10 percent of the AC adaptors were unusably broken, with little recourse for repair.[7] As described in more detail in (Rosner and Ames 2014), the material realities of the laptop itself destabilized the meanings that OLPC and Paraguay Educa attached to it: the vision of universal access to XOs as a social leveling force was undermined by how laptops were broken and who could afford the few repair parts available, thus reifying rather than mitigating socioeconomic differences.

In short, the laptop was *not* immediately charismatic to teachers in the ways it was for Paraguay Educa and OLPC—as an educational machine—or in the ways it was to children—as a media machine. As we will see, it was not until Paraguay Educa encouraged teachers to develop alternate meanings of the laptop as a device for education that it started to become charismatic to them.

Teaching Charisma: The *Formadores* Program

When it became clear that OLPC's ideology was not automatically transferred via day-to-day laptop use, Paraguay Educa filled the gap by creating a new type of ideological worker to do the job instead: a teacher trainer. It was not long after

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laptops were handed out, in fact, that Paraguay Educa staff began to notice their lack of use. Several interviewees explained to me during my fieldwork in August 2010 that one year before, just a few months after the laptop handout, the founders had enlisted the help of a local education expert and family friend to consult on the project, and a month or two later, brought her on full-time as the director of Paraguay Educa's newly formed educational division. One fifth-grade teacher recounted an August 2009 visit from this education expert, where both realized that Paraguay Educa and the teachers needed to take a more active role in shaping the uses and meanings of the XO laptop if the object was to be seen as something more than a toy:

> [The educational director] came one day [in 2009] … and said in a strong tone, "You're using the [paper] notebook [and not the laptop]." I didn't know what to say—I only knew how to turn the laptop on and use the Internet, because that's what I was taught, but I didn't know how to use it pedagogically. I told her I can't teach what I don't know.

Realizing that the laptop was not by itself sparking the kinds of exploration they had hoped for, Paraguay Educa hired and trained residents of Caacupé with experience in both technology and education, and with excitement about the project, to become full-time trainers (*formadores*) after the 2009 school

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year ended in November. When the 2010 school year started in late February, these trainers began working daily in the ten Phase I schools, serving as local mouthpieces for Asunción-based Paraguay Educa by promoting the idea of the laptop as a learning device and giving concrete suggestions for lessons that incorporated the XO. I heard from many sources that their work resulted in a large increase in laptop use. In the words of one third/fourth-grade teacher, "It's so much easier with the trainers. Last year we didn't use the laptop at all—it was impossible without them. They give support and help in class with activities I still don't know well and have a hard time with." Teachers from all ten schools recounted versions of this story: having someone whose job it was to educate the school staff about the laptop and its learning theories transformed the project from one that was marginalized in the classroom to one that, though not as central as OLPC or Paraguay Educa might hope, was still much more integrated.

What Kinds of Charisma? Negotiating Types of XO Use

The trainers were able to stimulate laptop use, but were they also able to enforce constructionist meanings? This question can in part be answered by examining *how* laptops were used. Unique in the ecosystem of classroom laptops, OLPC's XO laptops included not only custom-designed hardware but an educational software suite with several specifically constructionist activities that, according to

Papert, would capture the attention and imagination of children, leading them to self-motivated learning.

In fact, the laptop's charisma did appear to have some material effects. I observed and discussed a number of differences between students at schools with laptops and those without: whether their schools were urban or rural, large or small, public or private, the students with laptops seemed much more outgoing and confident than those at otherwise similar neighboring schools without laptops. The difference was especially strong at rural schools, where students were otherwise much shier with visitors like me. One trainer, who himself grew up in a rural household and described a painful transition between rural and city life in secondary education, thought that this could be one of the larger effects of the project—to give rural children contact and common ground with their urban counterparts and more opportunities than they would otherwise have:

> I see that all children are given the same opportunity, even if they're in a rural school. Technology is something that's a dream for them. … There are no secondary schools in the [rural] places I go—they have to come to downtown urban Caacupé and there they'll discover technologies like computers. [When they do,] they won't have such stage fright, where they would be afraid because they are more humble and have less money—they won't be afraid. The project … demonstrates to children that they can still progress

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> even if they don't live in the city center or have many resources—
> if someone is dedicated, they will have the opportunity to benefit.[8]

Teachers and school directors reported that school attendance had improved, and that some students who had been held back in third grade because they could not read or write Spanish were finally motivated to learn because of the laptop and passed to fourth grade, though I was only able to locate one such student. Better reading skills were also reflected in the results of a cognitive exam that I administered with Paraguay Educa in November 2010, which showed a small, but statistically significant, difference of 5 percent in third- and sixth-grade reading comprehension scores between students with laptops and students in nearby schools without them. (However, results in mathematics were mixed, despite constructionism's focus on mathematical literacy.) Even if some of these changes—or belief in these changes—were due to a placebo effect motivated by the laptop's charismatic authority, the result of teachers and trainers *treating* students as more outgoing and creative and believing that the laptops can enact changes may in itself be significant.

These differences, however, do not tell us which of the laptop's activities were used in the classroom, and how. Were these changes due to extensive use of constructionist activities, as OLPC would like to believe, or from laptop use more generally? Or, as one trainer mused, might the changes be less about the laptops at

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all and more about increased awareness of child-centered pedagogy from Paraguay Educa's trainers and international visitors?

My fieldnotes from an August 2010 school visit depict many commonly recurring features of classroom laptop use that I witnessed. The fourteen students in the fourth-grade morning session I was observing that day haphazardly faced the board in the classroom's sixteen small wooden desks, well worn and full of carved graffiti. The teacher's slightly larger desk sat in the back right corner, stacked high with students' paper notebooks.

These students were already halfway through their four-hour school day this morning; twelve different students would attend in the afternoon. The teacher had written most of the day's lessons on the chalkboard before the morning session started: one section of the board for language, one section for mathematics, one section for natural science, and one section for a rotating lesson on a fourth subject, as required by the countrywide curriculum set by Paraguay's Ministerio de Educación y Cultura (MEC). We had already completed the mathematics and language sections of the board, using the most common tools for education in Paraguay: pencils and slim paper notebooks, both of which can be bought at the school cantina. The third lesson was on health, and we would be using XOs.

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Forty-five minutes had elapsed since the teacher asked students to take out their XOs. Only ten of the fourteen had working laptops at the beginning, and of those, only one had the software the teacher wanted to use, Tux Paint, installed. With the help of the trainer (but losing four more laptops to discharged batteries in the process), the teacher had installed the software on all six remaining laptops and was finally ready to start her lesson. She writes "Alimentos" (foods) at the top of a blank panel of the chalkboard, and then "según su origen" (according to their origin) underneath. She asks, "What are some foods?" The class brainstorms together—first the categories of animals, vegetables, and minerals, and then examples of each (cow, lettuce, salt)—for a few minutes. The girls participate more; the two boys with laptops intently stare at their screens and ignore the teacher. One has closed Tux Paint and has the browse activity open with a search for *chistes* (jokes). Another laptop runs out of battery power.

On the teacher's instruction, students start drawing examples of foods in their laptops or paper notebooks. Those with laptops draw shaky lines to divide the categories using their trackpads, often holding down the keys at the four corners of their keyboards to reset the trackpad hardware when it gets jittery or unresponsive. They then use Tux Paint's built-in image "stamps" to generate examples in the three categories, and soon the room is filled with the sounds associated with those stamps. Students without XOs write out examples and draw

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pictures in their notebooks instead. After about five minutes of working, the teacher announces that the rest will be homework for tomorrow and asks children to put their laptops away and take out their notebooks to copy a poem in Guaraní from the board in the fifteen minutes before school ends.[9] Most students comply, but the two boys with XOs keep them out, half-open, and peek at them from time to time. I peek at one of them and find a download in progress of *Naruto*, a popular anime series.

This XO lesson illustrates some of the negotiations involved in using XOs in the classroom. One feature of this narrative that may especially strike those familiar with OLPC and its XO laptop is that none of the laptop uses that I noted that day were particularly XO-specific. Despite the XO's ability to rally support from sundry groups with its iconic appearance, in this classroom the laptop did not differ much from other computers, or even from paper and pencil. Furthermore, the activity Tux Paint—though developed for children, relatively easy to understand, and fun to use—was not very constructionist: it did not encourage deep, embodied, passionate exploration any more than any other drawing program. In fact, drawing on the laptop was in several ways inferior to drawing on paper, even after the software was loaded and working. It was beset by the difficulty of using the unreliable trackpad rather than a pencil, the

temptation to categorize only the available images instead of thinking of other items and drawing them freehand, and the clarion call of the Internet.[10]

The relatively frequent use of Tux Paint that I witnessed across many classroom observations illustrates a broader issue of which activities were considered best to use in class. The topic was a point of frequent and sometimes heated negotiations between Paraguay Educa and teachers, and a site where different meanings of the machine were particularly evident. The staff of Paraguay Educa, like OLPC, advocated using the most constructionist activities, such as Scratch and Turtle Art. But in both interviews and surveys, teachers said these two activities, along with eToys, were the hardest to learn and the hardest to incorporate into lessons. All have similar interfaces in which command "blocks" are grouped to direct the computer's actions in what amounts to visual programming, and all became even more difficult to manage with a jumpy trackpad. Even in schools that encouraged teachers to use these activities, only a small fraction of teachers were willing to put in the considerable unpaid time needed to learn them adequately. And except in these schools, Scratch, Turtle Art, and eToys were rarely used in the classroom unless a trainer was teaching with them directly.

In contrast, the most commonly used activity by far was Navegar, the web browser. Teachers and students both agreed that it was the easiest activity to use,

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the easiest to incorporate into existing lessons, and the most compelling. Based on teacher reports and my own observations, teachers used this activity nearly every time they used the laptop, both in class and personally. “The focus is on using the Internet in class,” one teacher admitted, because “it’s easiest. We need to work more to connect other activities with lesson plans.” The reliance on using the web browser was so great that one of the few teachers who had taken up the idea of the laptop as constructionist tool labeled it as one of the project’s biggest problems, after breakage—not only were teachers relying on the Internet in the classroom, but they were allowing themselves to be distracted by it at meetings, much as their students were distracted by anime and jokes in the classroom. She said,

> I’d teach Phase II teachers to use activities without the Internet, and I’d like them not on the Internet for hours. The Internet should only be a support—train teachers to use only the school server. Let the children learn the activities in Sugar—that would be my ideal. Sugar is educational. Use the XO like a [paper] notebook that has only limited use of the Internet, because very few see the Internet’s educational side. Having a foothold with the activities would be good.
>
> We had a meeting with Phase I teachers and everyone had their XOs and was checking their email, everyone looking at their screen and not paying attention. Then we turned off the Internet

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and the whole room closed their XOs and began to pay attention. Nobody cared that everyone was doing something else.

In short, though its trainers stimulated use of the laptops, Paraguay Educa was less successful in enforcing constructionist meanings. Most teachers struggled to learn how to use the more constructionist activities and many handed over classroom use of these activities to trainers. In contrast, the most-used activities were the easiest to integrate into existing lesson plans, especially the web browser. To teachers and students, the XO was charismatic not because it could teach programmatic thinking, but because it was a portal to the Internet.

Limits to Charisma: Labor, Conflicting Priorities, and the XO

Other popular activities on the XO were also some of the more general, nonconstructionist ones. After Navegar, the next most-used activities were the word processor and the two drawing programs, all of which straightforwardly replaced parts of blackboard-and-paper lessons. Teachers were clear in their reasons for making only the easiest substitutions: it allowed the one-quarter of students whose laptops were broken to use their paper notebooks instead. Many teachers stated that it was enough work to incorporate the laptops into their lessons at all, much less to use the more complicated activities. In fact, according

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to the trainers and my own observations, at least one-quarter of the teachers never used the laptops in class unless the trainer taught for them.

These kinds of differences arose from teachers' varied responses to the many demands on their time and loyalties: commands from the school director or coordinator, national curriculum requirements, pressure from Paraguay Educa, teachers' union activities against exploitation and low pay, and personal concerns. Balancing the demands of the MEC's national curriculum against the short school day could be particularly difficult, as both the fieldnotes excerpt earlier in this chapter and the teacher quoted here highlight:

> We don't have a lot of time to use the XOs in class. I'd like to use them more—there are so many things to discover and do with it. But the Ministry requires us to complete four lessons a day, and you need at least forty-five minutes for the XO. These aren't activities they'll figure out in twenty minutes, and it takes time to open them [the laptops] up, to type—the children are slow.

The leadership at two of the ten schools in Phase I tried to align at least some of these pressures. One school coordinator who supported Paraguay Educa's mission helped the teachers under her supervision to develop curriculum that used the XO in more constructionist ways. She found, however, that few teachers were committed to investing the considerable time she requested of them—four unpaid

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training sessions every week—to thoroughly learn the laptop's constructionist activities. Similarly, the director of another school, who had a longstanding interest in a variety of educational reforms, revised her school's mission around constructionist teaching with the XO and encouraged the teachers in her school to volunteer their time for curriculum development and support for fellow teachers, students, and students' parents. Even under her commanding authority, however, some teachers were less committed to the project. In her words, "I can see that we're innovating our old pedagogy with the XO. It's a difficult change. … If the teacher has training, the XO, and space, but no change of attitude, nothing happens." Her framing of the problem as one of individual "attitude" placed the blame on the teachers themselves rather than on structural issues such as a lack of time or pay for these extra duties.

The other eight schools in the program focused less on promoting constructionist learning in the face of other considerations. The fourth-grade teacher whose classroom is described earlier in this chapter liked Paraguay Educa's mission, but her school's leadership was not so committed and the trainers were not very forceful, making her an anomaly who lacked the influence to rally her colleagues. Similarly, the coordinator at yet another school wanted to promote the project, but both she and the school's trainers lacked the leadership to recruit more teachers to use the XO in the face of an indifferent director. Paraguay

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Educa found that while the practices of the most committed schools could inform strategies for reaching the others, these strategies would fall flat unless they took into consideration the specific politics and practices already present in each school.

Overall, the changes that schools with laptops experienced appear to be due less to the use of constructionist activities, which was relatively rare, than to laptop use more generally and the attention that the laptops generated. Paraguay Educa continues to champion use of constructionist activities, hosting ongoing teacher training sessions in Scratch and Turtle Art, sponsoring after-school clubs for children interested in learning more about them, and organizing special events such as a local party for the international Scratch Day each May. However, even using the laptop as an optional replacement for a pencil required negotiation between teachers, students, school administrators, and Paraguay Educa's trainers, all of whom may have different visions of how to use the laptop in class. Thus, though constructionism was promoted by certain actors, this ideology was largely absent among the laptop's beneficiaries as they negotiated other uses in the classroom.

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Charismatic Objects: The Symbolic Importance of the XO

This chapter has in part been a cautionary tale about entering into an education or development project like OLPC's with too much hubris—illustrating the consequences of overpromising and underdelivering. Unfortunately, both OLPC and Paraguay Educa, along with many NGOs and nonprofits, are caught in a catch-22: they must set lofty goals and show (or at least suggest) great results to continue to attract the interest of investors, even though showing great results could also lead investors to conclude that the project is "done" and does not need more funding. Showy but myopic projects are rewarded either way, even when they rarely produce lasting results. This chapter suggests another course, honestly acknowledging sites of difficulty and conflict as well as the tremendous amount of work—social, infrastructural, and ideological—that must be mobilized to produce even incremental social change. As NGOs take on more functions formerly expected of states in many parts of the world (Ferguson 2006), it becomes ever more important to moderate expectations, promote transparency, and learn from "failures."

This does not mean that such projects are not worth pursuing. To close this chapter, I want to turn back to how the laptop, despite its failings and frustrations, was still a charismatic object. In a country shaped by significant humanitarian

intervention, it is remarkable that the XO laptops in particular commanded this charisma, even when other local projects—schools sponsored by American churches, Peace Corps projects, religious mission work, and more—did not. In fact, in six months of fieldwork and hundreds of conversations with teachers, students, and parents, I had trouble finding anyone who was not hopeful about the effects of the laptops, even if their day-to-day experience with them was frustrating or disappointing. Like a semiotic version of a charismatic leader, the laptop inspired hope for change by signifying possible technological futures to those invested in the project. Though their visions often differed, parents, teachers, and trainers alike were unfailingly, unflinchingly hopeful about the laptop's effects. "It's a beautiful project," teachers would remark to me or to each other, even after an hour of venting about how impossible it was to use the XO in the classroom when so many laptops were broken or misconfigured. "It will help the minds of the children develop, and the country will develop too."

While some interviewees were vague on what sort of future the laptops might create for the children of Caacupé, some were quite specific. A number focused on the perceived benefits of technological proficiency and the associated worldliness, similar to the sentiments of the trainer quoted earlier in this chapter who was excited that rural children were finally given the same opportunities as urban children. In the words of one parent, "Children are learning not to have fear

of technology—they realize that they can work with it. It's not outside of their realm, or only for really intelligent people. Learning that they can use it too is one step to the technology improving their lives." A teacher likewise stated, "For these kids, nothing will surprise them—teachers can be intimidated even by cash registers, but the kids are prepared for the future, and with luck they'll study more and more and make our city evolve into something great."

Several interviewees linked the processes the XO made possible with the processes of citizenship, comparing Paraguay Educa's project to the historic lack of support for education from Paraguay's government and invoking the importance of initiative and individual responsibility in being a good citizen. During my fieldwork in 2010, as Paraguayans were still adjusting to having a liberal president who came to power in an election seen as fair by the international community for the first time in many of their lifetimes, declarations about technology's role in creating good citizens took on an even more idealistic tone, similar to the way the rhetoric around Peru's open-source software movement produced a vision of its role in civic responsibility (Chan 2004). In the words of one parent, the laptops would enable not only information access, but political thoughtfulness: "We'll have a digital city. These kids won't be shy. Citizenship itself will change—there will be more reflection, and votes will really reflect the best candidate. They won't believe everything they're told because they can

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investigate anytime and anywhere." One trainer more explicitly implicated the lack of governmental support in the project, but believed that participants would find ways to enact change without it:

> In twenty years, Caacupé will be digitized, and the youth will be well-prepared and thoughtful citizens. It will make a profound difference in their cultural background. The government doesn't care that these people will be able to make such a difference—they say it'll create problems for the state, and they won't support the project. But the citizens will be thoughtful and have visions, and will change Caacupé.

It is important to note that the charismatic power that the XO possessed in Paraguay seemed to come not from the messy material realities of the laptop in use, but from the desires that the laptop-as-*symbol* was able to fabricate from theoretical use. The XO laptop seemed most powerful as a prototypical object, its power lying in its ability to produce or connect to certain dreams for a technosocial future. The apparent contradiction between these dreams and the object's much less glamorous material reality did not seem to result in a revision of the dreams—a finding that touches on the moral claims made about new information technologies more generally.

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Anthropologist Arjun Appadurai (1991) highlights the social role of fantasy in a world of new media technologies, implicating mass media in allowing more people to "see their lives through the prisms of the possible lives offered"—even when the result is an "ironic compromise between what they could imagine and what social life will permit." Similarly, OLPC's XO laptops revealed social fault lines around the ideals and realities of joining the "information society" that played out not only in the laptop's use but in visions of how it might shape the region's or country's future—from the constructionist learning of Paraguay Educa and OLPC to the portal to the Internet that students and teachers embraced. Since the hopes many Paraguayans had attached to President Lugo were dashed in June 2012, when he was impeached by a Colorado-controlled Congress under suspicious circumstances that international observers have labeled a coup (Guillemi 2012), the dreams that Paraguay Educa's participants have connected to the XO may loom ever more central.

This chapter, like others in this volume, provides an account of the agency of technology users in Latin America, challenging the common story of unidirectional technology transfer from North to South. The specifics of Paraguayan politics and daily life shaped both the use of the XO laptop and the users' visions for it, subverting OLPC's arguably imperialistic aims in favor of uses and meanings that made more sense given the constraints of schools and the

interests of students and teachers. In sum, the laptop could not accomplish the ideological work for which it was built, even with significant social intervention. However, many students and teachers using the laptop day to day were captivated instead by the charisma of the XO as a media machine and portal to the Internet. In this way, the hopes held by those using the laptops often did not coincide with those of either OLPC or Paraguay Educa, but instead symbolized a future of better education, better citizenship, a better economy, and better quality of life in Paraguay.

Notes

1. One element of the term *charisma* not at play here, or in Tsing's work, is its connection with Pentecostalism. Though belief in the laptop's powers for change could be characterized as a "faith," it does not resemble the attraction to (or the perceived threat of) Pentecostal religion.

2. Peru and Uruguay host the largest projects (over 500,000 laptops); Argentina, Mexico, and Nicaragua host medium projects (25,000 to 60,000 laptops); and regions in Paraguay, Colombia, Guatemala, Brazil, and Costa Rica host small projects of 1,500 to 10,000 laptops each.

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3. I observed classrooms and conducted 133 interviews with students, parents, teachers, and other local actors between late June and mid-December 2010. The bulk of my data comes from fieldwork in the ten Phase I schools. I also visited nearby schools without laptops, many later included in Phase II of the project. Though a volunteer for Paraguay Educa, I often worked independently, and with full access to the schools and the promise of anonymity, I was able to see and hear many local opinions of the project that the Asunción-based NGO could not. I supplemented this fieldwork with quantitative data including breakage reports, attendance records, and exam scores for reading and mathematics, as well as visits to much larger projects in Uruguay and Peru.

4. An overloaded term, *constructionism* is not only distinct from Piaget's construct*iv*ism (Ackermann 2001), but is entirely unrelated to sociological theories of social constructionism.

5. Paraguay's laptop project, though small, has been praised by visitors from the OLPC community for having extensive and ongoing investments in teacher training, student motivation, repairs, and local software (Buderi 2010; Derndorfer 2010b). While it is easy to find accounts of OLPC deployments doing badly, this chapter explores the ongoing complexities and challenges of a deployment that has been described as doing well.

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6. Teachers participating in the OLPC project in Paraguay were interviewed during the course of the author's fieldwork in 2010.

7. Of the 1,095 unfixed hardware problems in Paraguay Educa's inventory system in August 2010, 474 involved a broken charger, 403 a broken screen, 139 a broken keyboard or trackpad, and 79 other hardware issues. Uruguay's Plan Ceibal program, even with state-sponsored repairs, has published similar numbers of broken laptops (Derndorfer 2011).

8. This trainer's focus on *opportunity*, and the unspoken assumption that it is an individual's responsibility to take advantage of opportunity, illustrates the individualistic explanations for success I frequently heard from teachers and Paraguay Educa staff alike.

9. Guaraní is a South American indigenous language and one of the two official languages of Paraguay.

10. The first-generation trackpad was especially bad: many who bought XO laptops through the "Give 1, Get 1" program complained about them. OLPC later updated the software to reset automatically when the trackpad started jittering (OLPC 2009).

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One Laptop per Child (OLPC) is a non-profit initiative established with the goal of transforming education for children around the world; this goal was to be achieved by creating and distributing educational devices for the developing world, and by creating software and content for those devices. Its primary goal continues to be to transform education, by enabling children in low-income countries to have access to content, media and computer-programming environments. At the time that the program