

The Prototype as a Cosmopolitical Place: Ethnographic design practice and research at the National Zoo in Santiago, Chile

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Abstract: This article presents an empirical reflection about the design of prototypes and the individualization of some animals at the National Zoo in Santiago, Chile. Using the material produced by design students, we describe how the process of prototyping contributes to singularize those animals, therefore becoming a cosmopolitical device. The environmental enrichment for chimpanzees case will demonstrate how prototyping displays a truly ontological vocation, establishing open processes of dialogue and experimentation. Its provisional, malleable and fragile nature turns the prototype into a *locus* for inquiry and exploration; its cosmopolitical qualities derived from its many forms of ontological diplomacy: instead of stabilizing properties, it constantly re-specifies its conditions for verification. Finally, we attempt to develop the thesis of the prototype as a cosmopolitical device and its implications on design research as well as a way to intervene the world.

Keywords: prototype, cosmopolitics, design, zoo, ontologic diplomacy

1. Introduction

How to co-design zoos taking into account the priorities of the animals that live in them? What is the role of the prototype in the articulation of different ontologies concerning animals and humans? What is the specific knowledge that emerges from the provisional nature of the prototype?

This article reflects on the role of the design process in the configuration of certain animals living in the National Zoo in Santiago, Chile (NZSch). Using the material produced by a team



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of design students¹, we describe how the process of prototyping contributes to singularize those animals, therefore becoming a cosmopolitical device. We uphold that prototyping operations can be understood as cosmopolitical diplomacy devices, as these prototypes establish open processes of dialogue and exploration on the specificities and abilities of the animals. We will see how prototypes facilitates co-design processes, precipitating the interaction between the world of chimpanzees in captivity — who explore, use, and defy the prototypes —, and that of the professionals at the zoo — who comment and install the prototypes — and of the students — who design, produce and interpret the prototype in use.

2. From the local zoo to the global network of parks for animal welfare

In 19th Century Europe, zoological parks offered a healthy environment — counteracting the increasing industrial pollution —, gave prestige to cities in their race with neighboring ones, and as science displays, they operated as animal domesticating environments as well as educators of citizens, “engaging in (theoretical) classification and (practical) acclimatization.” Lambrechts (2014, p. 9)

By 1989 the principles of environmental enrichment began to be applied systematically at the NZSCh, improving exhibition standards as well as the physical and psychological life conditions of animals³. Research for conservation has turned the NZSCh into a complex institution, entering important international zoological networks.

Being part of global networks does not only have consequences in the internal operations of the zoo, but also regarding the biography and record keeping of animals. Besides sheltering confiscated specimens from possession, illegal importing or exotic species that are abandoned, the majority of the animals have been born within the park, and have probably spent time in other zoos from the network.²

3. Benevolent confinement of animals: animals as users

From the first collections of exotic animals captured to show military power, to the current *parks for animal welfare*, zoological parks have developed different forms of management, according to the different ecosystems they comprise. Hence, animals play different roles: trophies of power; representations of the exotic and savage; samples of science; and, lately,

1 This team worked during the first semester of 2014 in the context of the course “Interaction Design Workshop” under a working agreement between the National Zoo in Santiago de Chile and the School of Design of Pontificia Universidad Católica de Chile.

2 In fact, from the more than one thousand animals distributed in 158 native and exotic species, only Corneta, the sea lion, was born in the sea, that is, in the original environment of its species. (Cubillos, 2014)

survivals of *Progress* that require to be understood and preserved since their original habitats are in danger³.

Today, for animals that belong to international zoo networks, *these are their native environments*, just like cities are to citizens. Most of the animals that now inhabit any zoo of relative complexity are descendants of animals raised within the same zoo network.

Humans and not humans are inscribed, and live within a socio-technical ecosystem, in collective experimentations (Callon, 2012; Callon, Barthe, & Lascumes, 2001; Latour, 2001). Advancements in techno-science transforms society in an experimentation space, blurring the boundaries between the “confined laboratory” and the “outdoor laboratory” (Callon et al., 2001). This sets in crisis the idea of a given world (*out there*) (Latour, 1997; Quessada, 2013). Quoting Latour (2008a), this involves “the slow and painful realization that there is no outside anymore. It means that none of the elements necessary to support life can be taken for granted.” Just like the weather, the Internet, viruses, citizenship, tourism, rivers and other global scale phenomena, animal species are also internal matters of concern⁴.

3. Prototyping environmental enrichment

At the NZSCh experts look after the physical and psychological health of the animals. They have political representatives that stand up for their interests and, for some time now, design teams undertake ethnographic research and develop prototypes that animals can accept or reject — just like customers of Starbucks, LAN, McDonald’s or Apple do.

In 2013 the Interaction Design Workshop (IDW) at the Design School (Catholic University of Chile) began researching animals at the NZSCh. How could we provide epistemic and empirical credibility to the design decisions in front of non-human actants? In particular, how to translate the world of animals? Animal-recipients without a language to make their needs explicit, demand new procedures to translate their requests. Unintentionally, designers took as their own the current anthropologic problems concerning the management and composition of worlds under an ethic of coexistence capable of materializing a *cosmopolitic* which articulates different ways of existence of human or non-human entities (Callon & Rip, 1992).

The case of chimpanzees at the NZSCh places prototype technology in a privileged position. It will be shown how its function is not only generating provisional models of a product (Corsín Jimenez, 2013; During, 2002), making explicit and translating psychological, emotional and physical features of the animals. This testing technology, flexible and permeable will play in turn the role of *boundary object* (Star & Griesemer, 1989) or *social*

3 In a way, this idea reminds the positivist anthropological project of recording non-European ethnic groups before they become extinct in its pure state, because of the inevitable advance of mankind toward the homogeneity risen from progress. (Hermansen, 2013)

4 If we give credit to those who argue that the melting of ice at the poles is a result of our production, then we are interacting—and thus adding to our world project—even the last polar bear from the arctic as “matters of concern” (Latour, 2008a, p. 9). For this point, see also (Yaneva & Zaera-Polo, 2015).

*adhesive*⁵ precipitating the interaction between the world of animals and the world of the designers.

However, beyond the role of *boundary object*, we suggest that the prototype displays and updates an *ontological vocation*, while *enacting* animals as singular entities, exerting a function of inquiry, dialog and diplomacy with the animals. Enacting is understood as the operation of giving life to something, or *hastening something to be* (Mol & Law, 2004), under the premise that the entities that inhabit the world do not exist independently of a series of re-composing and re-designing operations (Latour, 2008b). We argue that the prototyping practices can be conceived as cosmopolitical operations (Latour, 2007; Stengers, 2010)⁶, by establishing methods of inquiry that make visible, arguable and tangible matters related to the animals' modes of existence. From a point of view similar to that of Domínguez Rubio and Fogué (2014) — who understand design as a political activity — with this case we explain how the prototype works in a cosmopolitical way, by unfolding dialog and exploration methods (diplomatic, perfectible) on the specificities and faculties of these animals.

4. Grammar of the prototype and pragmatics of the test

The question of how to produce plausible information in the presence of ontologically diverse informants-recipients is linked to the problem of representation and experimentation devices to *make reality speak* (Latour & Woolgar, 1988).

The work of Shapin and Schaffer (1993) on the controversies between Boyle and Hobbes about the vacuum pump is, without a doubt, a main reference to track the historical origins of the notion of the experimental prototype. The authors analyze the demonstrative operations and the equipment used to resolve and stabilize such epistemological dispute.

Shapin and Schaffer (1993) show how Boyle is able to construct an experimental infrastructure, becoming the main promoter of the experimental practices in natural philosophy, laying the foundations of the laboratory as a place for experimentation.⁷

On the other hand, ethnographic studies of material technologies and experimental practices (Latour & Woolgar, 1988; Lynch & Woolgar, 1988) reveal two main aspects which

5 Henderson (1995), from a study of prototypes in the medical field, shows how these testing technologies coordinate and recruit heterogeneous actors. See also Vinck (2003) and Suchman, Trigg, and Blomberg (2002).

6 The concept of *cosmopolitics* can be understood as a critical view to the anthropocentric matrix and its traditional idea of politics (a government amongst humans and their interests) in order to redefine it as the articulation of multiple ontologies. Nevertheless, this concept presents different subtleties depending on the authors. Since Stengers (2010) the emphasis lies in the exploration of the ontological uncertainties (with its image of the 'idiot'), while in Latour (2010) the emphasis is on the work of a *symmetric re-composition* between the different mediations — human and not human — that constitute the world.

7 It is important to note that during the 17th Century, the word "prototype" represented the idea of perfect model, and during the 19th Century it started to be considered as "the first real model of an object" (Corsín Jimenez, 2013; During, 2002; Henderson, 1995).

help to think of a certain grammar of prototypes. First, *materiality* reshapes a reality that wants to be known or represented. Scientific representation does not emerge from an expert-world confrontation, but from a space full of intermediaries, tools, notes, and computer devices, whose functions are to preserve, visualize and formalize information. To recognize the multiplicity of the *inscription devices* (Latour & Woolgar, 1988) allows not only to materialize knowledge, but also to understand that notions of “truth”, “mistake”, “natural”, or “irrational” do not pre-exist the laboratory work⁸ — which interweaves cognitive, material and narrative technologies, creating the conditions *for becoming*, therefore enabling certain facts to be objectified, argued, and exposed.

Second, this literature shows the political and ontological vocation that representation and experimentation technologies hold. If what we search for has no relation to the *aristotelian question* and the degrees of adaptation of science with Nature, but instead to the material activities that make it speak, then the question related to how the devices enable, make possible, and articulate the existence of certain entities comes forth strongly (Daston & Galison, 2012).

Linked to this ontological dimension of experimentation technologies, some authors have sought to establish a *trial* pragmatics (Boltanski & Thévenot, 1991; Latour, 1984): “that which is real has resisted a test” (Latour, 1984). Latour develops the concept of *test of strength*, where the idea of “real” or “objective” follows a series of carried out tests. By testing we verify the “texture of reality”, its properties and resistance capabilities. Thus, the notion of trial (Latour, 1984) is closely related to an ontological uncertainty; before a test it is not known what constitutes an entity⁹. Following Dewey (1938), the test always raises an uncertainty of things, but at the same time allows the verification of certain qualities.

This “ontology of variable geometry” (Latour, 1984) has inspired research on how to forge, technically and anthropologically, the demarcation between human and non-human (Descola, 2005; Despret, 2002; Lestel, 2001; Michalon, 2011; Catherine Rémy, 2009; Catherine Rémy & Winance, 2010). It is necessary to *politicize* the strategies of modern metaphysics aimed at dividing the human from the nonhuman by examining empirically the protocols, methods and forms of representation used to make this demarcation. Depending on the observations as well as the testing device to which the animal is subjected, we will obtain different ontological canons (Catherine Rémy, 2009). Catherine Rémy and Winance (2010) proposed to re-problematize the concept of “common humanity”, exploring the moments of testing and negotiation that determine how the actors define the “limits of the human”.

In this article the zoo institution is examined as a site for problematizing and negotiating these frontiers: the qualities that distinguish a subject from an object — or a designer from a

8 When we speak about “Laboratorization” we refer to the equipment and experimentations that produce knowledge. (Latour, 1984; Tironi & Laurent, 2015)

9 On testing sociology, see Barthe et al. (2013) and Guggenheim and Potthast (2012)

recipient — far from being assumed as given will become the product of clarification, prototyping and re-designing operations. The inquiry and singularizing processes described here will show a testing grammar typical to the prototype, and related to its cosmopolitical nature¹⁰.



Figure 1 Judy and Gombe at the National Zoo in Santiago, Chile. (Chimpáticos, 2014a)

10 It is important to mention that Wilkie (2014) in a study on obesity, as a conclusion he suggests the cosmopolitical capacity of the prototype, as it enacts the concrete variants of obesity while co-producing with human and not human entities. However, the cosmopolitical capacities of the prototype are not approached systematically, while in this article we intend to do so.

5. Prototyping with Judy and Gombe. Fine motor skill as a design opportunity

Unlike conventional ethnographic descriptions, the ones from interaction design are visually structured. This visual structure, inherent to design, allows a representation and eloquent restitution of the field experience. This representation mode seeks to provoke an empirical reading of the data, creating in the viewer the feeling of *having been there*. Unlike the ethnographic text, visual ethnography elicits multiple narratives, which once analyzed and organized, become a *design opportunity*.¹¹ The descriptions and the analysis we develop below are originated from these dynamics and from *in situ* observations during nearly three months of work.

In order to define their design opportunity, students observed, recorded and densely described the interactions between the different actors at the NZSCh, such as visitors, staff, weather, topology, enclosures, shadow casting, equipment and data.¹² The work was guided by the principles of *Environmental Enrichment*, aimed at the physical and psychological health of animals in captivity. Based on the assumption that zoo enclosures have fewer incentives and demands than the original environments of each species, the actions and devices designed were oriented to "increase the variety and range of opportunities or choices for animals in captivity" (Mellen & MacPhee, 2001). Being impossible to literally restore the activities developed in wild environments, it is intended that the compact enclosures of the NZSCh may offer a wide range of amenities (such as devices that develop certain skills, or stimulate exercising and playing, etc.) in order to enrich the daily life of the animals.

The design team (named *Los Chimpáticos*¹³) whose goal was to develop environmental enrichment for two chimpanzees at the NZSCh looked for their design opportunity by comparing ethological descriptions¹⁴ (animal behavior in their natural environment) with their own ethnographic survey of the zoo's ecosystem. Ethology describes both chimpanzees as members of their species, with similar capabilities, whose differences are explained by gender and age. One fact that served as starting point was the contrast between daily hunting practices and food gathering in wild environments, with feeding routines in captivity:

"When we compared the eating habits of chimpanzees in wild environments with those observed in the zoo enclosure, it became evident that there was a need to stimulate the

11 This experience of *improvised elicitation* is developed with the rhythm and intensity of a *brainstorming*, which is a useful but many times abused by worshippers of *design thinking*.

12 Unlike other project disciplines, *design* is both verb and noun. Therefore, an *opportunity to design* can be seen as a kind of *narrative conflict* (Laurel, 1993) that calls for action, the restructuring and modification.

13 The group named *Los Chimpáticos* included students Ricardo Aliste Salvo, Catalina Delanoe Garcés, Anath Hojman Betancourt, Felipe Orellana Fuentealba and Matias Salinas Poblete.

14 "The greatest difference between ethology and psychological behavioural study of animals lies in ethology's strong emphasis on spontaneous behaviour in the natural environment, or at least under the most natural conditions possible." (de Waal, 2007)

cognitive and physical work of chimpanzees Judy and Gombe (Figure 1), in order to enrich their feeding routines in captivity". (Chimpáticos, 2014a)

Their design opportunity emerges from the fact that, in wild environments, these primates occupy much of their time getting food. The device to be designed, would promote activities currently not available in their enclosure. In addition, experts from NZSCh and scientific documents consulted, show that strengthening their fine motor skills was an important element to developed. At the same time, the size, configuration and equipment in the enclosure of Judy and Gombe, confirmed the relevance of making them manoeuvre small-scale mechanisms. Thus, their preliminary purpose arises: "Finding and obtaining food stimuli in height (...) that promote the development of their fine motor skills and cognitive skills (Chimpáticos, 2014a)

5.1 Making the project tangible

Once a profile for Judy and Gombe was sketched, the next step was to translate the design opportunity into a working brief. Then the students explored 2D and 3D views (Figure 02, Figure 03 and Figure 04) to define the first prototype. Implemented on site, the project comes into direct contact with its users, starting up a series of three iterations. They went from external, disembodied observation of recipients, to forms of verification and knowledge production that come from the *in-corporation* of the prototype (a kind of Latourian *test of strength*).

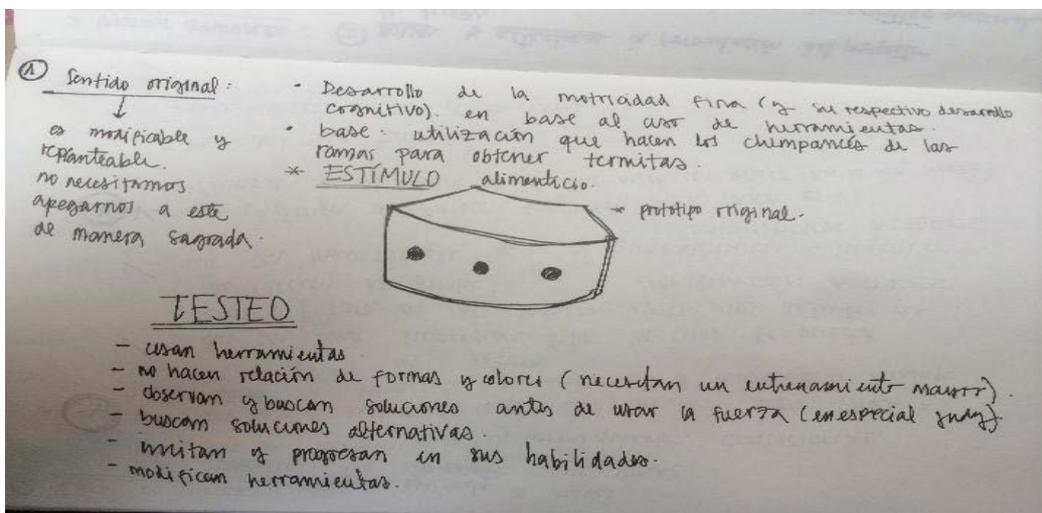
5.2 First prototype: Judy and Gombe pound the table and make themselves noticed

As shown in Figure 05, this first prototype was a wooden box attached to one of the trees in the area. Its height was determined with the aid of zookeepers, and installed by them¹⁵. This device was a labyrinth through which Judy and Gombe would push a piece of fruit with their fingers and release as a prize. The labyrinth shape, its dimensions and colors were designed considering qualities with which the ethology describes the specie. The expected behavior — inscribed in the actions programmed in the prototype — was a sequence of operations that, once repeated, would stimulate the development of fine motor skills.

However, the results of this experience were far from expected. As seen in the sequence (Figure 5), Judy, the first chimp to come to inspect the prototype, moves the fruit with her finger but not as planned. Judy's trickery bypasses the logic of the prototype and gets the fruit without using the intended movements. In a *certonian* gesture, Judy subverts the device, activating her fine motor skills under the logic of appropriation (de Certeau, 1984). Once Judy eats the fruit and walks away from the prototype, Gombe approaches, inspects it for a few seconds and turns away indifferent. Judy and Gombe not only did not interact as expected, but each showed off their own character: general ethological considerations

15 Only zookeepers and other professionals from NZSCh could come into direct contact with the animals. As a consequence, prototypes are the result of *co-diagnosis* and *co-design*, blurring authorship.

about the species, that supported the design of this prototype and promised to make it interesting for both, were not useful descriptors.



Figures 2, 3, 4: Sketches and representations prior to the prototype. (Chimpáticos, 2014a)

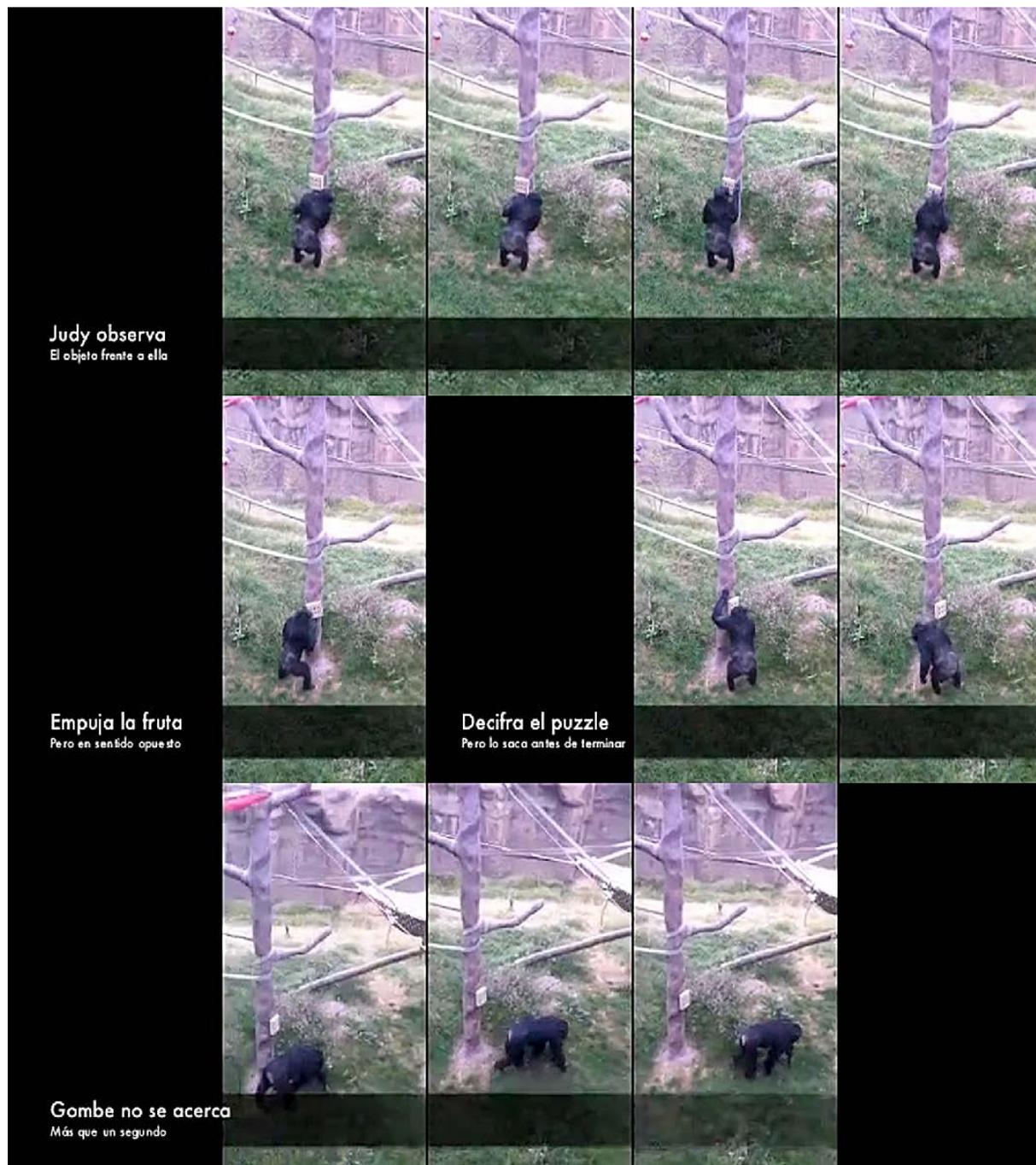


Figure 5: Sequence of testing of the first prototype. (Chimpáticos, 2014c)

5.3 Re-designing the device: Judy as the main recipient

The first prototype establishes the *sigularization* of chimpanzees: their reactions were not ethologically predictable (de Waal, 2007; Mellen & MacPhee, 2001). By putting into dialogue different social worlds (Henderson, 1995; Star & Griesemer, 1989) — chimpanzees, designers and zookeepers —, the prototype revealed unforeseen abilities and peculiarities. Judy and Gombe’s interpellation of the prototype was translated into original knowledge concerning their *modes of existence*, due to the provisional nature of the prototype.

The uniqueness of each chimpanzee forced the design team to redefine the recipient of a second prototype: Judy became the center of attention due to her interest in interacting. The designers kept several features of the first prototype, that is, a height that could be reached by the apes, the overall size of the object, materials, and basic colors to mark and match its parts. Nevertheless, they modified two elements: first, since Judy managed to subvert the prototype while getting the fruit, the team decided to replace it with honey. Now, refilling can be done less frequently and honey does not perish as fruit does which reinforces the practical value of the device and eases installation and maintenance performed by zookeepers. One of the conditions for these mechanisms to succeed is that zookeepers incorporate them into their daily routine.

In addition, the new prototype introduced two sticks not attached to the box, as tools to reach the honey. Thus, it evolved by appropriating some forms of the first, while eliciting the need to expand the chimp's maneuvering range.

5.4 Second prototype: from fine motor skills to a pedagogic device

Judy and Gombe subverted the script of the second prototype from their first interaction. Although Judy had proved worthy of being the main interpreter of the previous device — while Gombe remained indifferent — this time it was the latter who assumed the leading role. As shown in Figure 6, Gombe did not hesitate to grab the sticks, licked them and threw them on the ground. Then, acknowledging the presence of honey inside the box, he climbed the tree, held firmly the wooden box and violently shook it, almost breaking the device's anchorage, extending its performance range and temporarily using it as an anaerobic exercising device. The apes impose their moods and fancies over any effort to foresee their preferences. They reveal a complex personality, impossible to predict from a general ethology nor from a few days of observations and interactions. Likewise, their relationship does not withstand predictions. Anticipating whether the young-male or senior-female will take the initiative, depends not only on the qualities of the interface being designed, or if it is customized, but rather, on the mood of the animals and the context.

Later, Judy confronts a messed up artifact. She inspects it thoroughly and gently. After rummaging with her finger the cavities from which honey is obtained, she improvises a tool by picking up a stick and introducing it into the device to obtain the food. During this process, she tries sticks of different thicknesses to make the extraction of honey easier. This operation extends and re-specifies the design process introducing a trial and error exercise in the same way a designer does. The assistencialist intention underlying the project — which is made tangible in the prototype — is made visible and subverted by Judy's performance who introduces a *balancing element* pushing designers to be modest about their findings and hastening a reiterative design process and the boundaries of authorship permeable.

Gombe comes to the prototype again. Unlike his first interaction, this time he approaches cautiously, climbs the tree, and watches Judy's movements. Then he picks up a stick from

the ground and imitates his partner. After this learning instance, Gombe goes beyond mere imitation and molded his own tool with its teeth by bending it, increasing its efficiency. Like Judy, Gombe joins the prototyping and co-design exercise, however, in his own terms (singularizing): by shaping the tool — rather than trying different types — he deploys a different tactic than Judy's.

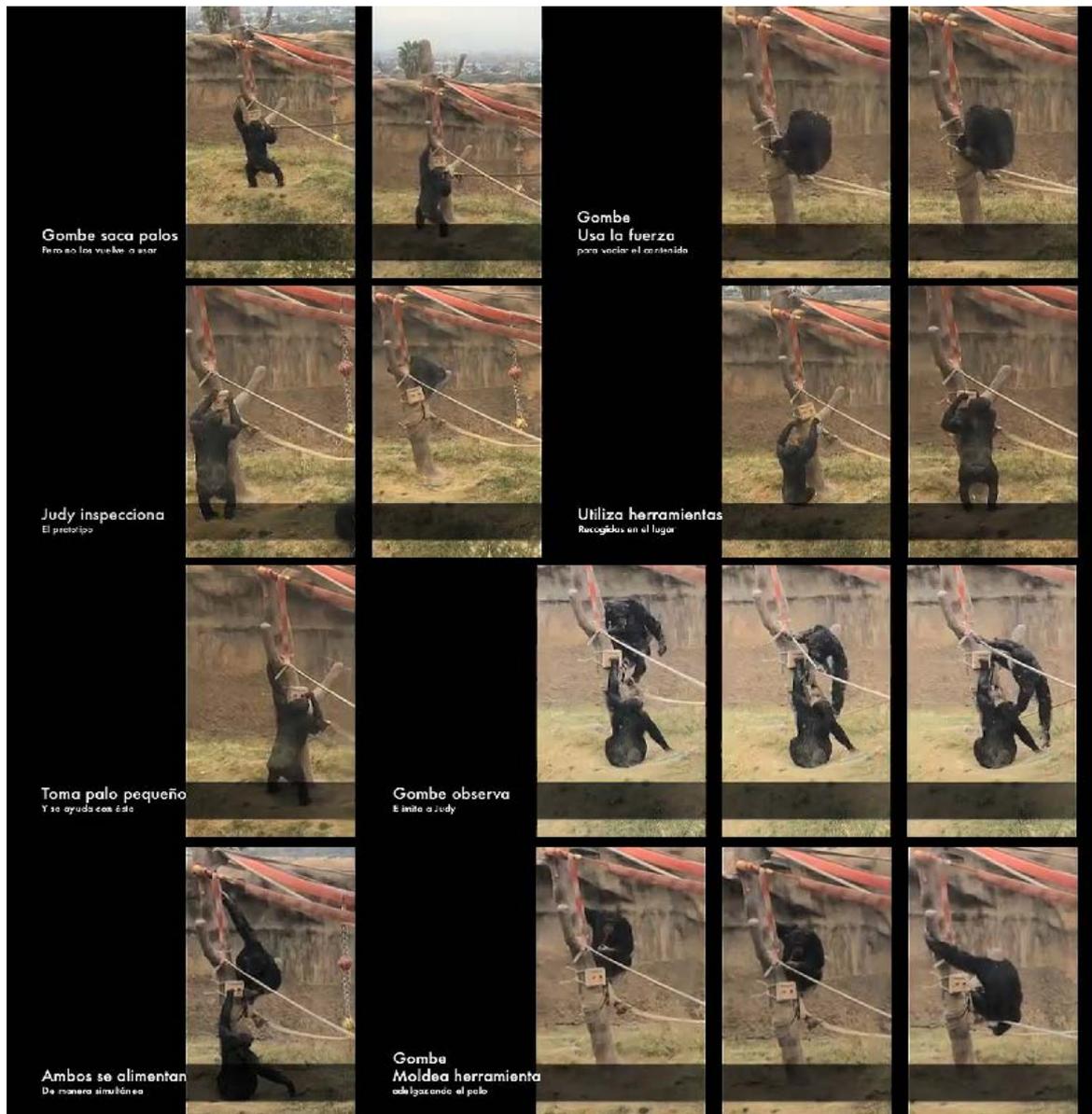


Figure 6: Sequence of testing of the first prototype. (Chimpáticos, 2014c)

5.5 Third prototype: stabilizing the experience of a product

The stress applied by Judy and Gombe to the first prototype, made the design team redistribute the operational intelligence of the second one. However, the effort to deliver a *customized product* was lost. The instruments attached to the second prototype, which

should facilitate the extraction of honey, were dismissed by Gombe and never picked up by Judy. In its place, Judy tests the use of three sticks of different thicknesses, creating her own prototypes. Meanwhile, Gombe, as Judy's apprentice in using sticks to extract honey, improvises a unique tactic and designs his own tool, reasserting the singularization phenomenon.

Aware of the redesign that Judy and Gombe imposed to the prototype, the design team planned a third and final version. Demonstrations of character and dominance displayed by the chimpanzees put an end to the idea that the third prototype should be a stable solution, but rather open enough for Judy and Gombe to try new ways to extract honey (Chimpáticos, 2014b). The *plug & play* type of customization proved to be an inappropriate idea, since every planning effort was *hacked* by the chimpanzees.

Consequently, the design team decides to develop an open grammar program device, embodied in a structure easy to refill and easy enough to be installed by zookeepers, and that could accommodate the unpredictable interactions that the chimpanzees would perform on it. In this latest version (Figures 7 and 8), in addition to considering what Judy and Gombe had indicated during the tests, the design team sought to produce an object that, in the eyes of the public, looked more like a market product, and not just a clever construct made from reused objects.



Figures 7, 8: The third prototype to be installed at the NZSch for its regular use. (Chimpáticos, 2014b)

6. Conclusion: Prototyping and cosmopolitical design

Henderson (1995) holds that the prototype can be conceived as *political technology*: not only because it allows material representations of certain social interests, but primarily by its ability to recruit, and coordinate multiple actors. Under this view, the prototype plays a political role by becoming a *conscriptio device*, structuring and activating networks. (Henderson, 1995)

Here we introduce a different argument. Judy and Gombe's case descriptions allow for a shift: from a prototype as a political tool, to a prototype as a cosmopolitical device. The prototype is not limited to the capacity of *enrollment and translation* described by Henderson, but its cosmopolitical capacities proceed from the provisional nature of such a testing technology, open to uncertainty and ontological inquiry.

If the work of diplomacy that Bruno Latour (2012) recently proposed involves clarification and dialogue operations between different modes of existence, the prototype, as technology, invites to experience and explore these activities. Research on *felicity conditions* of multiple modes of existence requires original testing modes and verification. Here we have tried to demonstrate that the prototype provides a singular *grammatology*, capable of re-specifying itself and open to diplomatic means of intervention and exploration. According to John Dewey (1938) indeterminacy of a situation is inherent to any process of inquiry and exploration, opening the possibility of re-examining issues that were thought to be settled (Latour, 2005). The prototype, in this sense, displays an ethics of inquiry, demanding processes of re-design and deliberation, of clarification and association, modesty and diplomacy.

Iterative prototyping practices not only put in crisis the programs inscribed in the artifact (who takes the leading role? How to encourage fine motor skills? How to boost interaction? Etc.), but it also led singularization and learning modes unanticipated between Judy and Gombe. Insisting on one point is important: the forms of singularization described here are the product of joint modification between prototype and chimpanzee, not from essentialist qualities or dispositions.

The prototype introduces an *ecology of attention and care* on the forms of existence of Judy and Gombe. This form of *cosmopolitical diplomacy* displayed comes into dialogue with the arguments of Domínguez Rubio and Fogué (2014), who argue that design, as a form of intervening the world, enables *cosmopolitics* forms of work, but not due to its power of synthesis, nor to its *habermasian* consensus, but due to its ability to explore and extend the repertoire of possible worlds (Domínguez Rubio & Fogué, 2014). Under a similar perspective, we argue that the prototype can be conceived as a cosmopolitical device by establishing forms of inquiry open to reproblematicization and redesign of cosmoses, or compromised ontologies.

To what extent the notion of *latourian cosmopolitics* must also be prototyped and put into action? If “designing is always redesigning” (Latour, 2008a), deploying new sites and spaces

of the political (Domínguez Rubio & Fogué, 2014), then it is essential to question on the role of prototyping design in the composition of cosmopolitics. If cosmopolitics forces to rethink the political action from an *ontological pluralism*, then one must take seriously the testing modes, and be sure of integrating the repertoires and nomenclatures for diverse forms of cosmopolitical work.

Design as research and as a way of intervening the world, finds now a major challenge: how to move from cosmopolitics as the analytical horizon to cosmopolitics as design experience? Prototyping allows to *perform* cosmopolitics, making visible the conflicts and negotiations between the cosmos that converge and diverge. If, as suggested by Stengers and Latour, the cosmopolitical plan proposes the management of a social life in which we recognize in all entities the ability to participate in the creation of a co-inhabited cosmos (Picas Contreras, 2010), it is essential to explore devices that allow us to experience the design of cosmopolitics atmospheres. Cosmopolitics is not a starting point, but a place that demands a *compositional* work, empirical research, and design operations.

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