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Spider web anthropologies: ecologies, infrastructures, entanglements

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Ecologies, infrastructures, entanglements. Anthropology and STS have recently found some unsuspected common groundings in the relational, emergent and self-organizational affordances of these three conceptual systems. Vibrant yet fragile, interactive and responsive whilst simultaneously resilient and solicitous, the earthy and muddled and tenacious engagements afforded by ‘ecologies’, ‘infrastructures’ and ‘entanglements’ have brought new sources of analytical vitality and valence to social theory.¹ These are languages of description that conjure worlds of material and biotic interdependencies, human and non-human agencies weaving themselves into and around filaments of energy, matter, history and decay. Worlds that hold on; worlds that creep up. Spider worlds and spider webs calling for spider web anthropologies.

In this chapter I want to introduce the figure of the spider web as a heuristic to help us think our current predicament of expulsion, ruin and precarity. The spider web, I want to suggest, offers an apposite metaphor for a world that holds itself in precarious balance, that tenses itself with violence and catastrophe but also grace and beauty, and that calls out and silhouettes promissory worlds of entanglements. However, what draws me to the metaphoric seduction of the spider web, I must add, is one specific trait: its semblance and vocation as a trap. Spider webs are traps. It is their materiality as traps, their condition as material and epistemic interfaces between worlds, that helps us ‘capture’ new openings for the work of imagination and description today.

I am interested in the work that traps can do for description, in the trap as a method for description. The spider web offers a beautiful example of how this method works: the spider web entangles the worlds of prey and predator and in so doing outlines and crystallizes the infrastructure of their ecologies. The spider-web-trap is an ecology, but it is also an entanglement, and it is also an infrastructure. I shall return to each one of these registers in some more detail shortly.

The method of description that the spider-web-trap sets in motion is a specific type of ‘recursive’ operation: think of the spider’s spinning of the web, eating part of it daily to recuperate some of the energy expended in spinning. The operation of recursion works therefore as a source environment for future descriptions *and* an environmental palette itself. We may think of it as a technique of ‘double environmentalisation’: weaving worlds into existence at the same time as it re-captures existing worlds. Describing worlds and worlding descriptions. Worlds that hold on, worlds that creep up. Such recursive self-spinning is also, inevitably, my method. So let me move on by

rewinding, and start by providing some ethnographic background to the notion of double environmentalisation.

Double environmentalisations

Among the Tibeto-Burman Nuosu people of the Greater Cool Mountains of Sichuan Province, China, the soul of a living person is said to inhabit the outer surface of the human body in the form of a ‘soul-spider’ (Swancutt 2012). Although the body of a Nuosu person ‘hosts’ the soul-spider, who otherwise ‘leads a vulnerably exposed existence, since it may ‘fall off’ of its owner’s body and ‘become lost’ when its owner is frightened, ill, or stumbles while walking’ (Swancutt 2012, S105), we may similarly speak of the soul-spider as ‘hosting’ the person, for the latter’s well-being largely depends on his or her remaining attached to the soul-spider and the cloud of web filaments that it spins on the body. These filaments often ambush and capture things that circulate in the surrounds of the body, whose corresponding expansions or contractions may be thought-of as body-enhancements or depletions responding to its ‘guesting’ on the soul-spider’s web. Katherine Swancutt, whose Nuasu ethnography I follow here, describes thus the Nuasu ‘web of hospitality’ wherein body and soul trap each other as part of a larger ‘spider-slave complex’, where hosts and guests employ ‘intimate trickery’ more generally to gain leverage and advantage vis-à-vis one another in a form of ‘double-captivity’ (Swancutt 2012, S108).

The notion of ‘double captivity’ is one that Swancutt draws building on Roy Wagner’s image of the ‘double agent’ of hospitality, a ‘grifter’ model of sociability where the complex play of suspicion and trust energises the social game (Wagner 2012, S168). Elsewhere Wagner has spoken more widely of the ‘double encompassment’ that characterises all forms of symbolic agency (Wagner 2001). A recent example is his description of ‘land shamanism’ among the Daribi people of Mount Karimi (Wagner 2012). Here a *hoa-bidi*, ‘soul-person’ or ‘die-person’, upon being denied proper ritual burial ‘expersonates’ herself by taking over the land and becoming the territory (Wagner 2012, S163). This brings about a formidable transformation in the internal circulation of human and nonhuman capacities: the soul-person’s knowledge of the land, ‘his wayfinding abilities... become the way itself’; ‘he acquires the ability to estrange the self-orientation body-images (a navigational necessity for all motile creatures) of game animals and birds from their rightful owners and deliver them to living hunters in their dreams at night’ (Wagner 2012, S163). The world thus terraforms to the *hoa-bidi*’s dispositions and will. In this capacity he can for example take the souls of hunters ‘hostage’ by effectively deploying his charmed landscape to lure them into a world of abundance.

The risk of depredation and depletion that the territory-shifting strategies of the ‘place-soul’ (Wagner 2012, S163) posits to the Daribi can only be redressed through the *habu* ritual, a ceremonial communion which requites the omitted burial feast denied to the die-person. The funerary ritual stages a relation where the Daribi and the land-shaman play guest and host to each other, and where the lurking tensions of double-encompassment are finally maximized and blown-out: in *habu* the exchange of encompassments is encompassed yet one more time, when ‘the people of the

community... are [themselves] feasted as *guests of the land*.' (Wagner 2012, S164, emphasis in the original) We may therefore think of this maximal form of encompassment as a specific expression of the spider-slave complex, one however where the environment (the land) traps all – where the double encompassment is now out-hosted by a *double environmentalisation*.

Although neither Swancutt nor Wagner say as much, I would like to suggest that the maximal description towards which their ethnographies of 'double captivity' tend – the process of double environmentalisation – may be thought-of as the ethnographic spinning of a spider web, where environments trap people and where people trap environments, and where the very notion of trapping is subjected to continuous examination and trial, such that in its spinning – in its recursions – description is allowed to become a method that traps 'doubles': now predator, now prey; now host, now guest; now community, now territory; now environments that environmentalise themselves.

Sticky entanglements, terraforming ecologies, material deceits and tensions: the spider-web-trap advances as method by capturing and environmentalising every new description. Such a method, however, is not exclusive to Nuoso or Daribi anthropology. As intimated in my opening paragraphs, I want to make a more general claim here about the trap as a method of description for social theory today. I want to put forward an argument – fragile and *temptative* as the metaphor itself – that the form of recursion that traps set in motion has in fact been central to the sustenance and fuelling of the modern episteme.² In their modesty, in their material humbleness, in their accessorial role to the allegedly more important operations of thinking or conceptualisation, traps have however persistently 'captured' and furnished multiple worlds for us.

Part of my excursus here, then, will be to gesture to some of the ways in which certain classical epistemes of the modern condition – epistemology, experimentation, ecology, information – have *trapped themselves out*. I do not mean this in a negative sense. One must not be judgmental about the effects that entrapments bring forth. Traps are predatory but they are also productive. They trick and trade on worlds-to-be. Thus, rather than boldly struggling to escape the traps of modern knowledge what follows is an attempt at spider-webbing our way with them. I want to clear a space from where we might see how anthropological description traps itself out – an outline of how far the trap may go to revitalize anthropological comparison.

I spin the rest of my argument around three ethnographic-cum-historical vignettes: on seventeenth century trompe l'oeil painting, experimental designs in science, and the media-ethological and environmental intelligences of informational capitalism. Although the narrative has a temporal sequence to it (from the seventeenth century to our times) the argument is as far from linearity and progression as it can get. As noted above, it is one of my central intuitions that modern knowledge is essentially a trap to itself, such that most forms of 'explanation' are guests unaware they are actually being hosted – predators who do not know their own condition as prey. There are some respects in which the arguments I make at the end of the paper are therefore hosts to the arguments I make earlier on. It is part of my game here to convey a sense for a mode of argumentation that 'doubles' – that traps and environmentalizes – itself throughout. In

this guise I venture a modality of anthropological description that aims to make the modern *production* of knowledge face up to the conditions of its own *predation* (Viveiros de Castro 2002, 15).

The trap of entanglements

Let me introduce you to *The reverse side of a painting* (Figure 1), a painting by seventeenth-century Dutch artist Cornelius Gijsbrecht. Gijsbrecht was relatively well known in his time as a painter of still lifes. In fact, as far as we know, he only painted still lifes.



Figure 1. The reverse side of a painting, Cornelius Gijsbrecht, c. 1670, Staten Museum for Kunst, Copenhagen.

Despite having a certain reputation whilst alive, his oeuvre gradually fell into oblivion. Recently, however, some art historians have returned to it, and in particular to this one painting. For Victor Stoichita, for instance, ‘The reverse side of a painting’ signals no less than the closure of a historical epoch (Stoichita 1997). The painting marks the culmination of that tradition of baroque art that inaugurated the conditions for meta-pictorial reflection. This was a time when the most cunning of artists (Velazquez, Vermeer) experimented with visual registers, robbing spectators of the presumed privilege of representational awareness and thrusting this back into the interiority of the paintings themselves. Let me explain.

Take a look at Gijsbrecht’s painting. What gets represented here is quite literally

the reverse side of a painting. Stoichita and other commentators have noted that in its original setting the painting would have likely been placed on the floor, leaning against a wall. Imagine someone walking into the room where the painting lies. They see a wooden frame, held together by six frail nails. The stretcher holds a canvas, and there is a label with a number on it (36) that has been pegged to the back of the canvas, in all likelihood indicating that the work is one in a series of many, or part of a collection. So, as Hanneke Grootenboer has put it,

If we follow our inclination to turn this canvas around in order to see what is represented on its front side, its shock effect would reside less in the deception, and more in the discovery that there is nothing there to see. Nothing, except for the same image, back as front. (Grootenboer 2005, 59)

In a previous analysis of this painting (Corsín Jiménez 2013), I suggested that Gijsbrecht's work may be seen as signalling not just the birth of painting as a non-representational activity – for the painting does not stand for anything; it actually, quite literally, stands for itself: it is a self-standing object.³ But as I said, it is not just the birth of non-representational painting that we encounter here. The painting may also be seen to endow this flipping compulsion – this need to re-verse the canvas, back to front, and back again – with an epistemic status of sorts.

The reverse side of a painting (Gijsbrecht's work) and the reverse side of a painting (of any painting) both index the same presentation of the world (the reverse side of a painting) but they do so from, respectively, an epistemological and an ontological point of view; or let us say, a human and an object-centred point of view. Whereas *The reverse side of a painting* is the view we hold of the picture as viewers, that is, a view that obtains through the act of eliciting the painting as object, the reverse side of a canvas, on the other hand, elicits not an epistemological point of view, but an ontological position: an object (the wooden stretcher) that no longer requires the epistemological elicitation of a viewer to come into existence.

However, I would like to stress that this dazzling display of double relations (between representation:presentation; human:object; epistemology:ontology) is only temporarily held stable through the *flipping itself*. The painting and the canvas appear mixed-up and 'entangled', part of one confusing and blurred epistemic register, only because we can flip the frame around. The flipping makes the entanglement visible as an epistemic engine. The relations 'double' as relations – they become visible to themselves – through the act of flipping. Oscillating between a human-centred and an object-centred point of view, between an epistemological and an ontological location, the trompe l'oeil's very 'reversible' structure emerges as the only possible comfort-zone for stabilizing the turbulence and confusion of all such double movements. It is the painting's reversibility that holds all such reversions meaningful. It is 'reversibility' itself that rises therefore to the status of epistemic operator.

It is worth stressing that the reversibility-effect is itself the outcome of a trap, in this case, the aesthetic trap of the trompe l'oeil. It is the trompe l'oeil that tricks reversibility into existence. The trap 'traps-out' an epistemic effect.

Now I am no historian of art so I am a little out of my depth here. I should note, however, that the tricks of the trompe l'oeil respond to a symbolic economy of production. The masters of seventeenth century baroque art (Velazquez, Vermeer, Saenredam, Rembrandt) sought to complexify, if not directly undermine, the traditional system of symbolic representations of the art world of their time. Up until the seventeenth century, artists aimed to have their works enter an established symbolic economy of pictorial and allegorical cross-references. The meaning of a painting was established through its emplacement in a larger historical economy of images.



Figure 2. The gallery of Cornelis van de Geest, Willem van Haecht, c. 1628

The paintings of collectors' cabinets that proliferated in the seventeenth century capture the paroxysm of this economy, such that the best a painting could do was to aspire for its own inclusion in the system of images that it represented. Willem van Haecht's rendering of van de Geest's pictorial gallery is a well-known example (Figure 2). This is the economy of representation that the masters of baroque art hoped to escape and undermine.

The tricks of the trompe l'oeil were therefore as much illusionistic as economic. Their iconoclasm was as much aesthetic as sociological. The traps were aimed at bringing into existence novel conceptions of authorship; new economic relations of patronage and artistic enterprise; new techniques and styles of craftsmanship; a modality of participatory spectatorship, even a material and aesthetic basis for (political) consciousness and (relational) cogitation; as well as of course a wholesale new visual culture (see Alpers 1995; Wolf 2001). This is why I say that the trapping was epistemic.

There is one last thing that I would like to comment about Gijsbrecht's wonderful painting. Think of the painting in its original trapping position: lying on the floor, perhaps leaning against a wall. In this position the painting has abandoned its pictorial qualities. It calls for its recognition, not as a painting, but as an object. It hopes to look just like any other piece of furniture: a wooden stretcher that solicits it being turned around and placed in a proper setting and position. We need to find a place for this painting. First, however, we need to pick up the frame, carry it, hang it somewhere. As an object, then, the painting no longer solicits our gaze. Rather, it mobilizes our whole body in an immersive environmentalisation. This is the work of interior design and decoration, which is both an aesthetic and material project. The painting, in other words, enfolds the pictorial moment in the atmospherics of objecthood. It becomes an object by trapping its own environment, us included. It describes a world by worlding its own description.

This is as far as my first trap takes us. Somewhere in the seventeenth century a group of artists discover in the *trompe l'oeil* an epistemic operator for 'doubling' – for entangling – the descriptive affordances of worlds. The *trompe l'oeil* tricks and trades in possible worlds. These worlds are neither visible nor invisible; neither wholly perspectival and geometrical nor classical and mimetic. Rather, they are worlds captured in the turbulence of double relations; worlds that crack in-between perspectives – quite literally, by cracking perspectivalism itself open. Seventeenth-century *trompe l'oeil* and anamorphic paintings function thus as traps that thrusts our bodies before our eyes. They enrapture the body and leave the gaze behind. They are also in this sense worlds that come with environments attached.

Traps for ecologies...

Let me keep in view this image of a form of trapping that comes with environments attached – of environments that self-entrap themselves. To do so I shall rely on the work of anthropologist Ann Kelly, who has for some time now been studying a type of experimental hut that is used for entomological research in south-east Tanzania (Kelly 2011). Experimental huts are in fact a classic tool of entomological science. First designed in the 1940s by British researchers in Kenya they have since been used to monitor the flight patterns of malaria-inducing mosquitoes.

The huts are built emulating vernacular architectural models and are erected in the periphery of villages. The architecture, notes Kelly, 'serves a dual purpose: to isolate 'natural' mosquito behaviour on the one hand and to represent 'typical' village conditions on the other.' (Kelly 2011, 70)

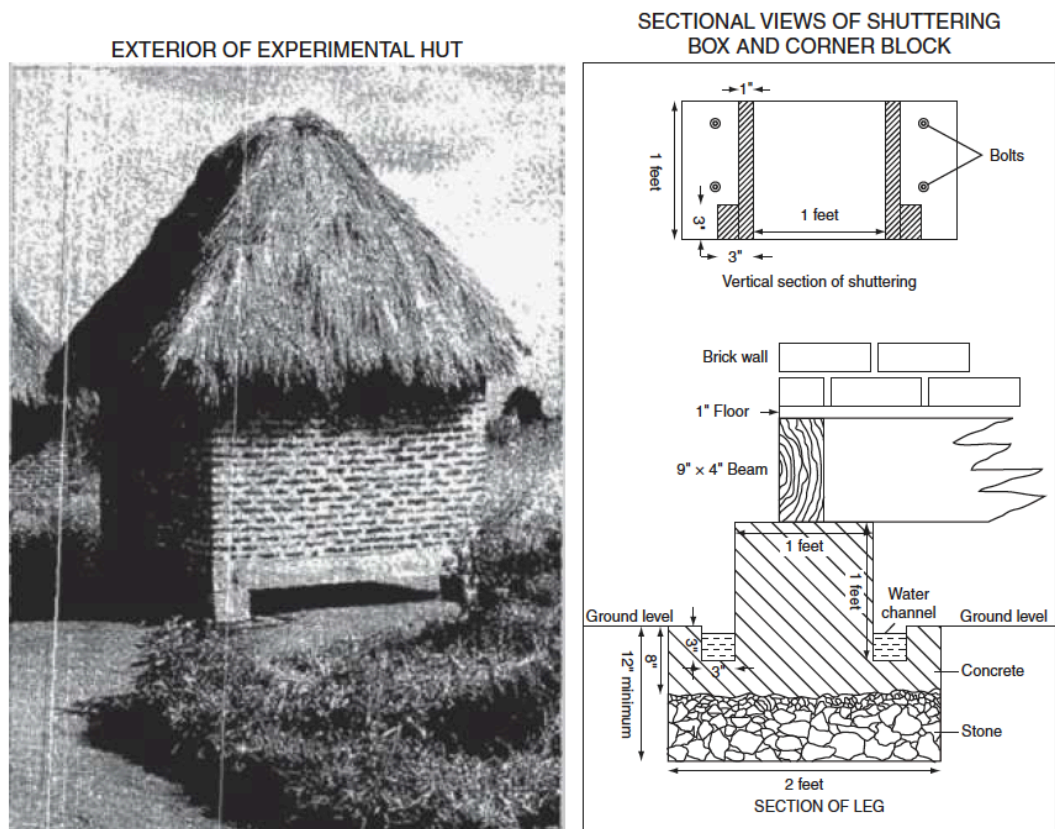


Figure 3. Experimental hut with shuttering (source: R. E. Rapley's *Experimental Hut with Shuttering*, 'Notes on the construction of experimental huts' (1961), reproduced in Kelly 2011).

The commitment to build the huts following local architectural designs (mud surfaces, thatched roofs, detachable windows, etc.) responds to an experimental exigency to model and 'keep the interspecies [human-mosquito] encounter intimate.' (Kelly 2011, 75) There are a number of reasons why this is so, not least because transmission vectors and epidemiological dynamics vary widely according to local circumstances. For example, by having one, two and up to ten volunteers sleeping overnight in a hut early experimenters revealed the effect of body mass on malaria transmission. Later experiments also showed that pregnant women were predisposed to malaria infection because of mosquito olfaction (Kelly 2011, 74). The spatial and sociological architecture of the huts thus conditions the type of data collected under their roof.

The huts are therefore conceived as 'experimental architectures' equipped with an array of 'techniques of capture' (Kelly 2011, 75). I do not think it does much violence to Kelly's ethnography to describe the huts as epistemic traps: experimental-cum-environmental traps, for mosquitoes, of course, but also for tracking epidemiological data.⁴ I use the term 'epistemic' here advertently, because it is actually central to Kelly's project to show that as experimental architectures the huts' functionality depends precisely on tacking stock of their 'built-in uncertainty' (Kelly 2011, 78) The uncertainty is crucial to their experimental design. As she puts it

the provisional character of these experiments works to situate their claims. The

huts' aesthetic – their detachable traps, open eaves, wire baffles, automotive coils, sheets and meshes – interrupts the causal linearity of proof. Instead, these rooms provide a momentary resting place to observe and record the site-specific details of man–mosquito interaction. Their experimental framework allows for evidentiary expansion from model to home, but the wiggle room between the two suggests that these extensions are subject to revision and adjustment. (Kelly 2011, 78)

We could say therefore that the huts' materiality functions as a sort of interface between environmental and social relations. The huts capture the environmental dynamics of mosquitoes in epidemiological terms, that is, their movement across time-space; but the huts are also designed to suspend momentarily – to function as 'momentary resting places', as Kelly puts it – human-mosquito relations. So in a sense the huts are indeed ecological traps. They are not unlike spider webs: infrastructural space-time interventions in a cultural ecology that open up a space of *différance* where the agentic capacities of mosquitoes, local villagers, entomologists, thatched roofs or public health research are temporarily suspended so that their relations can be reassembled anew.

... and ecologies that trap

The image of an experimental arrangement as a trap of sorts is actually a common epistemological trope (and ploy) in twentieth century science. In his historical epistemology of the development of twentieth century molecular biology, Hans Jörg Rheinberger has described for example the implicit rules of scientific experimentation as constituting 'a kind of experimental spider's web: the web must be meshed in such a way that unknown and unexpected prey is likely to be caught. The web must "see" what the spider actually is unable to foresee with its unaided senses.' (Rheinberger 1997, 78)

Of course, the image of the spider web as a trap for epistemic things has traversed twentieth century scientific thought ever since its was most eloquently deployed by Jacob von Uexküll in his investigations into animal environments (Uexküll 2010).⁵ The spider web is a central – and arguably one of the most important – images in Uexküll's book. It is regularly resorted to in the book as an analogy or trope for other forms of environmentalisation. For example, when Uexküll describes how animals transform their homes into territories, he compares the structured tunnel systems built by moles to a spider web (Uexküll 2010, 103). When he explains the developmental rules that give form to the bat's echo-locational radar he similarly draws on the spider's web to make the point that 'neither of them is only meant for one, physically present subject, but for all animals of the same structure.' (Uexküll 2010, 167)

But the spider web plays more than an exemplary role in Uexküll's text, for, as he puts it, 'one can recognize the reign of Nature's plans in the weaving of a spider's web' (Uexküll 2010, 92). Thus, the web stands for the self-elicitation of Nature's designs. It is a cypher that holds within the intricacies of Nature's meaning. Indeed, it is 'the interpretation of the spider's web' – a dedicated epigraph in the book – that supplies Uexküll the 'primal image' with which to build his bio-semiotic metaphysics.⁶ As he famously put it, the 'spider's web represents a meaning utilizer of the carrier of meaning

“prey” in the spider’s environment.’ (Uexküll 2010, 158) The spider and the fly, in other words, mirror each other in the *ecological interface* of the web. And the ‘meaning’ of nature – the meaning of the web, in this case – is but its surface tension: it ‘surfaces’ in the tension that ‘counterpoints’ the spider’s and the fly’s environmental relations:

the spider’s web is configured in a fly-like way, because the spider is also fly-like. To be fly-like means that the spider has taken up certain elements of the fly in its constitution... the fly-likeness of the spider means that it has taken up certain motifs of the fly melody in its bodily composition... The theory of meaning culminates in the uncovering of this connection. (Uexküll 2010, 190–191)

The spider web is for Uexküll, then, the symbol of an onto-ecology. It is the trap that entangles ecology in its self-determining vocation. Nature is a trap and ecology is its infrastructure. And the spider web is the interface that mediates their entanglement.

I would like to dwell for a moment on this view of the spider web as an artefactualization of ecological relations: where the mutual describability of spider-fly relations is trapped in the form of an ecological infrastructure. Said somewhat differently, where the spider web provides the infrastructure for the ‘double capture’ (in the terms used earlier on) of ecology *and* description. I am interested in what kind of work this *mutual describability* is seen to do.

One of the few anthropologists who has taken the trap seriously as an anthropological problem is Alfred Gell (1999b). Gell approached the question of trapping indirectly, for he was actually examining how and what makes an artwork ‘artistic’ in the first place. Famously, Gell suggested that artworks functioned as ‘traps’, in that they successfully retained complexes of social relations within the vicinity of their environmental influence (see also Gell 1998). In this sense, Gell suggested, traps are little different from, say, Marcel Duchamp’s readymades, for they both index forms of surrogate agency and model the world as a human-environmental entanglement. A trap, noted Gell,

is a model as well as an implement... The arrow trap is particularly clearly a model of its creator, because it has to substitute for him; a surrogate hunter, it does its owner’s hunting for him. It is, in fact, an automaton or robot, whose design epitomizes the design of its maker... It is equipped with a rudimentary sensory transducer (the cord, sensitive to the animal’s touch). This afferent nervous system brings information to the automaton’s central processor (the trigger mechanism, a switch, the basis of all information-processing devices) which activates the efferent system, releasing the energy stored in the bow, which propels the arrows, which produce action-at-a-distance (the victim’s death). This is not just a model of a person... but a ‘working’ model of a person.

But traps do not just model their creators; they model their targets too. Hunters manufacture traps to emulate a prey’s environs. ‘Traps are lethal parodies of the animal’s *Umwelt*’, says Gell (Gell 1999b, 201).

The parody, in Gell's unparalleled witty formulation, is not unlike what Uexküll described as the 'contrapuntal' spider-fly likeness. It is the sensorium of a mutual describability between spider and fly worlds. It is lethal, however, because it 'traps' the likeness and makes it deadly visible. The trap artefactualizes the parody. It extricates the mutual describability of spider/fly entanglements *as infrastructure* – as an interface.

You may have noted the use that Gell makes above of cybernetic images in his description of the trap's environmental circuitry. Although he speaks of the trap as an 'automaton or robot', he is in fact describing a sensory and nervous system. The trap, for Gell, is a media and information-processing device. It is an interface, a binary switch code, which alternately contains and releases energy/information. However, it is still, ultimately, a trap: that is, an artefact modelled on, and that functions as a vehicle or conduit for, exo-environmental relations. The trap may be an infrastructure for carrying information, but it is the infrastructure (of ecological relations) that matters.⁷

So this is as far as my second trap takes us. If the trompe l'oeil trap was used by seventeenth century baroque artists to make doubled worlds visible, perhaps it is fair to say that some strands of twentieth century experimental thought have found the aesthetics of trapping useful as a tool for making ecologies visible. Or said somewhat differently, that ecological thought has itself been *trapped-out*: that it has been bodied-forth as an infrastructure through which ecological entanglements become visible. Moreover, captured in the figure of the environment-as-trap there also seems to be the notion of information as a trapping-impulse, as something that jumps outside or ahead of itself.

Media ecologies : sentient intelligences

When I employed the phrase 'mutual describability' of spider-fly likenesses above I was in fact echoing a description that digital art and media theorist Matthew Fuller has made of Uexküll's spider web (Fuller 2011). Fuller comes to the spider web in an exercise to rethink the spatial and medial qualities of architectural structures:

In that "a subtle portrait of the fly" is drawn in the web of the spider, this is also a system that evinces proper medial qualities of integration and communication, whilst at the same time promising the dissolution of the domains previously internal to that which is drawn into communication. Sensual extension, capture and the precise delineation of space in a spontaneous, tirelessly reworked and cunningly arranged net is crucial to the medial trope of dispersal. (Fuller 2011, 176)

Architecture, proposes Fuller, works just like spider's webs do. Whilst much recent media and systems theory has blossomed on the idea of the 'mutual describability of media, information and space in terms of flow (Fuller 2011, 176), for Fuller, the crucial questions remains not how ecologies of information thrive on flows, but how they develop intrinsic capacities – how the flows are brought to a halt. Building on the ecological trope, he notes that 'space is, in certain ways and to differing degrees, species-specific. Each landscape reveals affordances and dangers that, like the web to

the fly, are significant only to certain sensorial natures, intelligences and capacities.’ (Fuller 2011, 177) Space, seems to suggest Fuller, is a trap which, if properly laid out, may result in the release of fecund intellectual energies.

When it comes to imagining and developing such spider-architectures Fuller proposes that we attend to designing spatialities capable of becoming at once interfaces and placeholders for very different ‘kinds of intelligence’ (Fuller 2011, 181). I quote at length:

Firstly, one of the most urgent means of developing such an approach is by engendering a sensitivity to the urban in which multiple kinds of intelligence, including those of non-human species and their spatial practices in all their fundamental alienness to humans, have a significant place... Secondly, to recognize that in the generative development of spatialities that intensify intelligence, specialization takes place... Cities can be characterized as a concentrated process of the gathering, enfolding and dispersal of such spaces. In becoming strange themselves through such specialization and congruence, they create mutant fitness landscapes for forms of intelligence to interpret, cohabit, or to disperse from. (Fuller 2011, 181)

What we have here, then, is a proposition where the spider-architecture is no longer simply imagined as a surface-tensor of ecological relations, the infrastructure enabling/enabled by mutual describabilities, but as a lively episteme in its own right. The spider-architecture functions as a web-of-intelligences – ‘mutant fitness landscapes for forms of intelligence’, as Fuller puts it.

Fuller’s interest in environmental intelligences forms part of a recent field of scholarship that aims to re-orient ecological thinking outside the realm of linguistic and symbolic representation and toward a conception of relationality based on the intensive assembling of affects, capacities and energetics (e.g. Barad 2007; Kohn 2013). Thus, drawing on the novel sensor and network-capacities of digital media and relations Fuller has elsewhere spoken of the rise of new ‘media ecologies’ (Fuller 2005), whilst Jussi Parikka has imagined an ‘insect’ theory of media, where insect-worlds provide an imago for ‘media as a milieu of intensive capabilities, an ethology.’ (Parikka 2010, xx) These ethological media-worlds are called into life as habitats of tensional and ephemeral ‘palpations’, which ‘like the vortices of... whirlpools... simply vanish when the special geometry of constraints that sustains it disappears.’ (Kohn 2013, 20) Perhaps unsurprisingly, spider webs have provided a common point of reference for this ‘entrapment’ (my term) of theory as vitalistic ethology.

Urban theory has likewise been inflected by these spider-ecologies. Nigel Thrift has referred for example to the irruption of ubiquitous computing technologies in the urban fabric as deploying novel ‘expressive infrastructures’ that ‘thicken space’ and cloak our surroundings with the atmospheric pressures and intensities of ‘some of the characteristics of weather.’ (Thrift 2012, 4, 17, 15) Mark Shepard speaks of ‘informatic weather systems’ (2011, 18) whose invisible (digital) winds and currents steep our surroundings deep with new relational affordances and affects, shaping emotional and

intensive landscapes of data-in-action. An example is the work of new media artist and theorist Natalie Jeremijenko who has experimented with the use of open-source digital sensors to measure water quality and aquatic life in the East River and Bronx River in New York. Known as *Amphibious Architecture*, the aquatic sensor-interface aims to employ the technological affordances of ubiquitous computing to expand the ontological register of 'interaction partners for environmental governance' (Benjamin, Yang, and Jeremijenko 2011). Nigel Thrift goes as far as positing that the multiplication of such ontological registers demands on the part of the social sciences the 're-examination of the notion of the environment', as well as the development of the 'atmospheric means of understanding what is in the world and how to control it' (Thrift 2012, 8, 4).

In the final part of this essay I want to explore the idea of ecological and ambient intelligences. If the trompe l'oeil and the spider web were the epistemic traps that made, respectively, double and onto-ecological worlds possible, I wonder whether there might be any purchase in looking for the traps of ambient and informational intelligences today.

To this effect, I present ethnographic work that along with my colleague Adolfo Estalella we have been carrying out since 2011 with Basurama and Zuloark, two guerrilla and open-source architectural collectives in Madrid. These collectives are widely recognised in Spanish and Latin American artistic and architectural circuits for being at the vanguard of what a recent MOMA exhibition (where work by Zuloark was showcased) has dubbed 'tactical urbanism': experiments with architectural form and media that respond to the challenges of uneven urban growth in the 'global South' (e.g. Simone 2004; Miraftab 2009). What makes the approach developed by Basurama and Zuloark distinctive in this context is their development of open-source, auto-constructive strategies for negotiating such urban challenges (Corsín Jiménez 2014).

A good example of the work that Basurama and Zuloark do is a series of workshops that they have jointly been organising for two years now called 'Hand Made Urbanism'. The aim of the workshops is to invite participants to implode the grandiloquence of urban designs by making their own urban equipment. They call this practice 'brico-urbanism'. Brico-urbanism is all about designing and making objects. But as they put it, 'brico-urbanism workshops are not industrial design workshops. They are rather laboratories on the urban condition. For urbanism today is made from things (*el urbanismo se hace desde las cosas*).'



Figure 4. Poster for a 'Hand Made Urbanismo' workshop

The objects made at a Hand-Made Urbanism are all assembled by recycling trash or abandoned materials. To this effect, in the early days of a workshop participants engage in a 'trash safari' around the local neighbourhood in the hunt for wood planks, plastics and other types of materials that might prove useful in future design and construction sessions. These safaris take out to the city at night and offer participants an opportunity to engage with the otherwise invisible materiality of the city's residual wastelands. In homage to the Situationists urban deambulations, the term *dérive* is applied to these drifting walkabouts around a neighbourhood, which in Situationist fashion are also therefore somewhat aimed at recuperating the psychogeography of neighbourly life that lies outside the circuits of capital (Wark 2008).

The Situationist reference gestures to a larger concern of Basurama and Zuloark, namely, that the pieces of furniture become boundary-objects for the communities they work with. For both collectives, the furniture must materialize the community of relations wherein it is to be emplaced. Thus, they go at great length to source their building materials locally, to have local craftsmen and technicians join the project, and to document as much as possible the socio-economic context that has led to the community expressing a need for a particular piece of furniture. But their projects are also heavily invested in an exploration of the languages and grammar of architectural and sociological form and media. The objects created at a workshop do not have a stable (technical, graphic, media, diagrammatic) representation. As open-source designs they are continuously subjected to ontological scrutiny and intervention: open to modulations and re-appropriations, to new renderings and re-deployments, to retrofitting and

reassembling, in different territories, communities, (software) languages, files, formats and materialities.

Thus, the pieces of furniture developed at these workshops do not just point to the ‘atmospheric’ intercessions of new environmental intelligences, as Nigel Thrift has put it. The ontological challenge here does not respond to an awakening to novel sensorial and network capacities. These are not so much ecologies in flux, responding to the intensive affordances of weather-like streams of digital currents and emotional data, as *ecologies in beta*, whose landscapes would seem to echo rather Roy Wagner’s description of Daribi land-shamanism: landscapes that can both host and hold hostage, but also terra-form and reorient the capacities of human and nonhuman persons. Environments that are neither subjected to agency, nor the holders of agency themselves, but rather sources for opening (open-sourcing) the very epistemics of agency.

Ecologies in beta

Some time in the winter of 2012 Adolfo and I sat down with Basurama and Zuloark to explore the ‘conceptual furniture’ animating the cross-over between their open-source and auto-constructive approaches to urbanism and the recent Madrid Occupy developments (locally known as May 15, 15M movement). We had all been involved in various capacities in the protests and shared a dissatisfaction with their widespread theorisation as ‘digital revolutions’ or new ‘commons-oriented’ social movements (Corsín Jiménez and Estalella 2013; Corsín Jiménez and Estalella 2014). We were intrigued instead by the analogies between architectural auto-construction and the material affordances of urban assembling. We found in the notion of *amueblamiento* (furnishing) a promising point of departure for exploring how the assemblies refurnished and auto-constructed the political landscape of the city. If the urban condition was terra-forming anew under the aegis of the Occupy spirit, we were provoked to re-imagine it instead as a *terre meuble* – a furnishing of the territory (Cache 1995). We called the project *15Muebles*, 15 pieces of furniture, a playful homage to the 15M movement.

The furnishing of the territory, as we have come to understand it, does not amount simply to a constructionist and material intervention in the urban condition. The *muebles* are not (just) items of urban equipment. Rather, they are signs of an *ecology in beta*. Their political entity, too, must be thought as being in beta, which rather than ‘unfinished’ or ‘partial’ should be read in this context as meaning in ‘productive suspension’. To better explain what the political ontology of ‘in beta’ amounts to, let me turn to the history of one of the most fascinating pieces of furniture we have encountered to-date.

In July 2012 Madrid’s City Hall set in motion a consultation exercise for a new strategic plan for its cultural industries’ sector. The consultation process received severe criticism for availing itself of a ‘commons’ and ‘social innovation’ rhetoric and yet failing to open-up to serious debate. In response, the Hall asked Medialab-Prado (a new media and digital lab part of municipal government) to organize a call for ‘citizen panels’ whose proceedings might inform the final consultation document. News of

15Muebles had reached the Medialab, who approached us inquiring whether we would be interested in organizing one such panel on '*gestión ciudadana de lo público*', citizen-led initiatives of public resources.

We were kindly surprised by the invitation and agreed to organize it. We sent out a call to a very wide spectrum of community-led initiatives in Madrid: squat social centres, urban community gardens (which were illegal in Madrid at the time), architectural collectives, neighbourhood associations, and cultural centres. At the meeting different collectives narrated their own experiences in taking over (legally or illegally) the management of public spaces and resources. We talked about how the initiatives funded themselves and sought sustainability over time; about the management of infrastructure (electricity, water, toilets); and about the difficulties of finding suitable interlocutors inside City Hall.

The encounter was on the whole rated a success. It was felt by many that the occasion to have various collectives share their experiences was a rare one and ought to be repeated. We met again in a fortnight's time, and then again two weeks later. By mid November the encounters had consolidated and were widely known as '*La Mesa*' – the citizen's roundtable.

Roughly at the same time Basurama and Zuloark were invited by City Hall to design the Hall's stand at the National Environmental Conference that was taking place in Madrid later in the month. The stand was built reusing wood that belonged to historical city benches, and it was a condition of Basurama and Zuloark that the materials used in its construction would be dismantled and made available to be re-used by marginal communities in Madrid's peri-urban districts following the conference's closure. The stand recreated an urban community garden, whose plants were transplanted from existing (illegal) community garden projects in the city. Each plant symbolized a community project, and had a label attached explaining the initiative. Moreover, the stand was described in the label welcoming its visitors as a 'space of collective creativity, built with an evocative character, and with the aim to promote a diversity of perspectives and reflections.'

When I first saw the stand it took me a while to get my head around it. It was a beautiful and indeed evocative piece of furniture. It literally blossomed amidst the tedious commercial and corporate landscape of electricity and gas companies', even NGO's stands. Further, it made me wonder what exactly had City Hall seen in the stand to assume all the connotations of its symbolic infrastructure – with all those references and nods to urban community gardens, squat social centres or guerrilla architectural collectives. As it turns out, although much of the stand's publicity had the inflections proper to the empty rhetoric of political ventriloquism, the preparations leading to its construction anticipated and rehearsed a number of future developments.



Figures 5 & 6. City Hall's stand at the National Environmental Conference.

The commission of the stand to Basurama and Zuloark had in fact been facilitated by a couple of City Hall employees who were members of various community projects in Madrid, and who had been attending the meetings of *La Mesa* since its inception. These people had taken upon themselves the task of trying to open up a political space within City Hall – tenuous and fragile as it certainly was – that would make the construction of such a stand feasible.

More importantly, coinciding with the on-going celebrations of *La Mesa*, these City Hall employees suggested to some of their colleagues that the stand could perhaps be a good place to rehearse an informal meeting with some of the radical collectives responsible for building the stand, as well as others whose spirit was 'evoked' by the stand's celebratory blurb when speaking of 'space[s] of collective creativity'.

The suggestion to hold a meeting between radical collectives and City Hall representatives was accepted. A message was sent out to members of *La Mesa* that some representatives from Hall were keen to meet us in order to initiate a conversation about our diverse interests and stakes over the management of public spaces. The meeting was scheduled to take place at City Hall's stand in the National Environmental Conference, although it was strategically removed from the conference's programme so as to, as the Hall's delegates put it, 'not to draw too much political attention'.



Figure 7. La Mesa meets City Hall at the National Environmental Conference.

The meeting was by all account a success. The members of Hall all insisted in making clear that their presence there was on a personal capacity – they were not on official City Hall business, and their words were not to be taken as representing City Hall views. Notwithstanding, they all agreed that their presence was a reaction to a failure on the part of Hall to understand ‘new models of urban governance’. There was a shared perception that we all had a great deal to learn from each other.

The meeting closed with a decision to set up a permanent ‘*mesa de aprendizaje*’ (learning roundtable) that would meet periodically with a view to identifying questions of urban governance of interest both to City Hall delegates and the collectives. As of December 2013 the roundtable has succeeded in establishing a regular calendar of meetings.

The success, however, has not brought about an institutionalisation or stabilization

of *La Mesa*'s political strategies. Much to the contrary, the furniture keeps re-furnishing itself. Thus, over time members of *La Mesa* have multiplied and contracted, with people appearing and disappearing, and sometimes re-appearing again when *La Mesa* forks into specialized taskforces, which include to-date groups on digital cartographies of collective action, a book club, or a taskforce on Madrid's forthcoming General Urban Plan. We have experimented with the format of our meetings: where we meet (at cultural centres, in bars, at the Spanish National Research Council), but also with how we conduct a meeting. We take turns taking minutes, which we call *relatorías* (storytelling), and which sometimes read like ethnographic accounts, whilst at other times they look like architectural sketches. Sometimes the remit of our activities seem defined and taken over by the concerns of architects (who are over-represented at *La Mesa*, which has become a concern in itself), whilst on some occasions it is the voice of cultural agents or of urban gardening communities that assumes the wisdom of political praxis. Sometimes, even, it is the anthropologists that everyone turns to for inspiration.

After our first meeting with delegates from City Hall at the National Environmental Conference, Manuel, a member of Zuloark, noted that this truly marked an unprecedented development in the configuration of urban public space in Madrid. 'It is unheard of', he said, 'of City Hall wanting to establish some kind of dialogue with radical collectives like us.' Others tried to caution his words, noting that City Hall had in fact taken good precaution of erasing our meeting from the conference's programme, or that the whole rhetoric of 'social innovation' and 'creative collaboration' was but the latest of fads in the arts of political persuasion. 'Sure', he retorted, 'but here we are: seating around a gigantic piece of furniture, playing a game of seduction with them.'

The images of furniture and seduction that Manuel draws on invoke a specific media ecology. As a member of one of the collectives in charge of designing the conference's stand he was no doubt well aware of the extent to which playing the game of seduction had required, first and foremost, constructing seduction's furniture. City Hall's stand at the conference was unlike any other. Spectacular, organic, vegetative, it refused to play into the corporate aesthetic of environmental correctness and performed instead a game of estrangement, of allurement and surprise. The stand was a true exemplar of brico-urbanism: built using recycled and transplanted materials, itself but a temporary holder for these materials future destination to community projects in some of Madrid's marginal areas.

What sort of object was the stand, then: a garden, a table, a political vitrine, a development project, a commentary of environments-in-scale? The stand made indeed the 'environment' visible like no other at the conference, yet it did so through a complex play of political cross-references and games of scale. The stand's 'host' – City Hall – had been in some ways taken 'hostage' by the radical collectives. Yet this was not simply a question of who was a more faithful 'representative' of environmental concerns. There was no politics of representation at stake, for there was no 'environment' proper to be found anywhere at the stand. If one wished to see in the transplantation of urban community gardens a co-optation by Hall of the gardens' success, such that the gardens were 'guests' at the stand, it is no less true that the radical collectives were ultimately out-hosting Hall by taking the stand outside the

conference to marginal communities in the city: they were moving the stand out to another environment. Likewise the rhetoric around ‘social innovation’ rested uneasily next to the floral imagery of squat social centres. As an open-source and auto-constructive piece of furniture, then, the stand was neither host nor guest to classical environmental politics.

When asked about the design of the stand, members of Basurama and Zuloark would describe it as a ‘prototype’. The term has gained currency among radical collectives in Madrid over the past five years. The stand, as they saw it, was the first of many future assemblages of its kind: it would be disassembled and reassembled, following the same or similar designs, using original and new materials, bringing together some of the same people and makers but also new communities. The stand was neither ‘one’ of a kind nor an instance of ‘many’ different kinds. It was a version, an on-going draft: a political programme ‘more than many and less than one’ (Corsín Jiménez, 2013a). In this sense, perhaps one ought to approach the stand as a particular instance of ‘double captivity’ – hosts and guests mutually trapped in an unstable game – yet one that manages also to out-trap itself: for the stand somehow managed to ‘trap’ the environment yet it also open-sourced it by making available and redeploying its material capacities, tending these out for on-going re-descriptions, or in the language of open-source projects, by keeping all descriptions ‘in beta’.

Conclusion

La Mesa’s work to this day has managed to invest its political interventions with a particular kind of epistemic recognition, even if this recognition can only very tentatively be described in terms of ‘suspension’ or ‘prototyping’. A type of actor unheard-of in municipal but also radical politics, *La Mesa’s* strangeness has succeeded in carving an epistemic space for itself amidst Madrid’s political landscape – a space that I have referred to as an *ecology in beta*.

Perhaps it is not unreasonable to think of this beta status as a trapping impulse, yet one whose trick lies in *jumping ahead of itself*. In this vein, the furniture seems less intent in trying to trap an ecology, the way spider webs do, as in trying to trap its own capacity for re-description. It aims less for mutual describability as for describability itself. I am reminded here of Roy Wagner’s uncanny description of human knowledge as ‘a predator that learned to stalk its own image... Like the false nonpresence that the cat pounces out of.’ (Wagner 2001, 63) The cat’s quietness, now predator, now prey, inhabits that state of suspension, that beta state, where it is description itself that is at stake.

The states of suspension I have introduced in this chapter lay out a tentative argument for thinking of the trap as a method of description. There are of course many different kinds of traps, and it has certainly not been my intention to subsume these under one overarching heuristic. Thus, whilst I have drawn my argument from the specific evocative powers of the spider-web-trap, I hope to have shown that if trapping may indeed prove a productive anthropological technology it is so *because* it has so many different ways of generating ‘suspension without releasing the hold of context’, as Debora Battaglia has put it (2012, 1094).⁸ Traps carry context and let it go – although

the different techniques of capture, containment and release will of course inflect how an episteme is seen to be doing any work to start with.

Traps capture, caution and captivate; they provoke wonder, suspension and elicitation. Traps can make the world spin slowly, at least for those who are awaiting rescue; or they can accelerate our impatience, if preys never show up. Some traps, even, are falsely triggered by a whisper or a hiss, and jump off ahead of themselves. Sometimes, predator and prey collapse under the catastrophic pressure of an exterior force. Traps have spatial, temporal and ontological effects.

In this vein, the three qualities of the spider-web-trap that I have described have allowed me to centre a number of questions. The aesthetic trap of the *trompe l'oeil* allowed us to see how epistemology and ontology are 'doubly encompassed' by a notion of 'entanglements' that is itself unstable. In the *trompe l'oeil*, relations double themselves and open-up the relation to novel forms of description. One way in which they do this, we have seen, is by self-encompassing relationality into an environment of sorts.

Traps are also well-known ecological infrastructures: think of them as the interior design of an *Umwelt*. They extricate from Nature its interfaces, the infrastructure of its mutual describabilities. And in this capacity they would seem to place the project of onto-ecology once again in the hands of description.

Last, traps embody the interiorizing and exteriorizing recursions that accompany the location of an environment. The prototypes of urban furniture work just in this fashion: they help assemble and furnish the conditions for social seduction. Pouncing out from the shadows of their nonpresence, the *muebles* prototype their own re-predation. They are trying to fascinate and seduce a community into existence. To trap it out.

A trap for entanglements, then, and a trap for ecologies. And a trap for description's own re-appearances. Three traps many.

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Notes

¹ On ecologies see for example Kirksey (2015) and Kohn (2014); on infrastructures see Graham and MacFarlane (2014) and Larkin (2013); on entanglements see Barad (2007) and Tsing (2015). I shall address each of these literatures in some more depth as the argument unfolds.

² For a description of how traps have pre-figured the work of analysis in modern science and social theory see (Corsín Jiménez 2013a).

³ And in this sense perhaps one of the most pertinent images for what Roy Wagner famously termed ‘symbols that stand for themselves’ (Wagner 1986).

⁴ The huts, writes Kelly, mix ‘genres of experimentation and environmental management.’ (Kelly 2011, 71, fn)

⁵ It is perhaps worth pointing out, as Giorgio Agamben reminds us, that Uexküll’s investigations were ‘contemporary with quantum physics and the artistic avant-gardes.’ (Agamben 2004, 39)

⁶ ‘The web’, he writes, ‘can... not be a representation of a physical fly, but rather, it represents the *primal image* of the fly, which is physically not at all present.’ (Uexküll 2010, 159, emphasis in the original)

⁷ Compare Sahlins’ description of traps as tools in *Stone Age Economics*: ‘a technology is not comprehended by its physical properties alone. In use, tools are brought into specific relationships with their users. On the largest view, this relationship and not the tool itself is the determinate historic quality of a technology. No purely physical difference between the traps of certain spiders and those of certain (human) hunters, or between the bee’s hive and the Bantu’s, is historically as meaningful as the difference in the instrument-user relation.’ (Sahlins 1972, 79) Whereas for Sahlins the cultural significance of the technology-trap evinces in the relation between the instrument and its user, for Gell technology can only be understood if one attends to the ‘enchantment’ (entrapment, entanglement) of their relations – their likenesses or mutual describabilities (see also Gell 1999a). In other words, technology functions as a trap.

⁸ Battaglia is describing the ‘exo-surprises’ that cosmonauts encounter when confronting zero gravity. They are captured or ‘arrested’ by the ingravity of space.