The Snake and the Flying Fox

Parthenogenesis, Endosymbiosis, Interspecies Breeding, and Ritual Processes in the Pacific

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> "Bioart's program is to work on the living and the logic of life, by doing things differently than nature itself does, by doing what nature cannot do or has not done"[1]
> *(Kac 2016: 5)*

Summarizing the general orientation of contemporary Western bioart, the above quote from artist Edouardo Kac not only brings art closer to science by virtue of its experimental nature, but at the same time distinguishes its program from the forms of manipulation of the living that are generally reserved for experimental science and molecular biology (in a perspective of knowledge production, control of resources and profit).

Bioart is also highly heterogeneous in terms of its techniques and aims. This is why we have chosen to focus here on two specific aspects: the processual dimension of bioart which is geared towards working with and highlighting vital processes rather than producing objects (Abergel 2011: 101), and its projective dimension. The latter places it

1 Translated from the French by Sébastien Galliot.

in a form of continuity between mythopraxis[2] and science fiction by experimenting with the living, organic matter and biological material to provoke unprecedented reactions and bring to life some of the ideas buried in the collective imagination, just like many rituals do.

Compared to the more conventional methods of contemporary art, bioart is also exemplary in the diversity of techniques used and the unintentional results it manifests, since the visual characteristics of the work depend primarily on the possibilities offered by advances in natural science and vital processes over which artists have only limited control. In other words, by relying on the agency of the living, and by mediating a *nature naturante*, bioart formulates a dual critique of Western science and anthropocentrism, and thereby contributes to questioning man's place within nature, as the examples below demonstrate.

Produced in 2003, artist Aurelia Jaubert's *Albumines* series highlights the metamorphic capacity of organic matter, and the random shapes into which albumen or egg whites bursting in boiling water congeals (Fig. 1). Coloured and then photographed, these albumins become "natural sculptures" reminiscent of cave concretions, certain fungi or rhizomes, seed germinations, biological cell cultures and organs…".[3] This series may not require any expertise in molecular biology to be put into practice but, insofar as it freezes the changing nature of organic matter by hand (first in water, then through photography), it can be considered at an entry point on the one end of the bio-artistic spectrum.

At the other end of the spectrum are the experiments of the academic and artist couple, Marion Laval-Jeantet and Benoit Mangin. In their series *Cultures de peau d'artistes*, they produced, in the mid-1990s, a work of interspecies hybridization by having samples of their own epidermis grown on pig dermis in the laboratory. These skins were then tattooed with various motifs taken from the "best selling animal imagery in vogue in tattoo parlours in the United States" (Laval-Jeantet/Mangin 2003: 102). Although this bestiary, preserved in jars of formaldehyde,

2 In Sahlins' terms (1981: 67), i.e. in the sense that the past, mythology and collective memory contain patterns of actions that can be actualized in the present.

3 https://aureliajaubert.com/albumines/ (last accessed 29.03.2024).

went unnoticed at the time, it was a pioneering gesture of inter-species metamorphosis experiments in art based on biotechnological laboratory techniques.

Figure 1

These two examples illustrate the paradoxical position that bioart occupies in relation to both conventional art and biotechnology. They also show how bioart relates to other forms of human production, by depicting phenomena of hybridization, exchange, transformation and metamorphosis between humans and non-humans, both visible and invisible, which are at the heart of social relations in many of the societies studied by anthropologists. In these societies, while ritual processes involve the production of objects or images whose effectiveness relies on the intervention of non-human, supernatural or counter-intuitive entities, highly technical interventions of humans play a key role in the ritual achievement (Galliot 2022). And the work of bio-artists, even when based on cutting-edge techniques, comes close to ritual work in its ability to make the unexpected happen and chimeras visible. In both cases,

whether constituted in a microbiology laboratory or based on vernacular knowledge in a Pacific society, the sciences of life and matter play a central role in visual devices designed to transform the self and accompany the person throughout its social journey.

Numerous anthropological studies highlight the literal meaning of the term "construction" as applied to the person, given that indigenous conceptions of subjectivity are based on a constant transformation of the body and its skills (Revolon/Di Piazza 2022) and through the use of artefacts and the incorporation of various substances such as bodily fluids, food or certain plants (Godelier 1982; Warnier 2007; Erikson 2009; Santos Granero 2012; Revolon 2018; Galliot 2019).

This is how we intend to take part in a discussion on contemporary bioart and its non-Western, prefigurative occurrences, since they actually fall within universal patterns of thought according to which the introduction of a substance or foreign body into a living organism, or mere contact with it, results in a transformation, whether internal, visible, external or invisible.

In order to highlight some of the cultural forms that the exploitation of properties recognized or inferred from non-humans can take in the (re)production of people and human social relations, we will briefly draw on two quite different cases from Pacific societies in Samoa and the Solomon Islands. They seem relevant to us insofar as in these two situations:

1) the mode of figuration intervenes in a primarily non-representational framework;
2) the societies in question exploit the properties of the living and organic matter by mobilizing local knowledge relating to metabolism, begetting and the constitution of persons. In doing so, they combine epistemic domains that Western sciences tend to consider as autonomous, namely the laws of matter and biology on the one hand, and on the other hand, the domain of ideas and representations.

Body permeability, metabolization and ordeal in the Samoan Islands (Western Polynesia)

The first case stems from research carried out by Sebastien Galliot within island and diasporic Samoan societies between 2001 and 2016. Except where indicated in the text, the data summarized below are drawn from the book *Le tatouage Samoan. Un rite polynésien dans l'histoire* (Galliot 2019).

In this case, it is a ritual of collective initiation during which a specialist (*tufuga ta tātau*) and his assistants create a gendered and standardized image on the initiates' bodies (*malu* for women Fig.2, *pe'a* for men Fig. 3), using a hand-tapping technique on a tool fitted with needles. Traditionally, they were made out of tusks from undomesticated pigs but have been replaced by disposable steel needles since the mid-2000s. This tattooing technique is only found among Austronesian societies in the Pacific and Southeast Asia (Robitaille 2018: 25).

Figure 2

Figure 3

More complex and costly, is the male *peʻa* (the Samoan bat called "flying fox", *Pteropus samoensis*) tattoo that leads to the organization of the ritual[4].

Despite its scriptural dimension, the primary aim of this ritual of inserting images under the skin is not the revelation of symbols or the exegesis of an esoteric iconographic corpus, but rather an ordeal. The initiates – whom we can also describe as patients – are not informed of the

4 Female tattoo markings called *malu* are often planned at the occasion of a male initiation in so far as the operation on young women is completed in a few hours and requires less ritual prescriptions.

motifs and their meaning. The context does not lend itself to this, and the information may be passed on to a family member at a later stage, but is not subject to any particular symbolic or emotional investment. Performed in a certain silence, without words, in a form of routine, this ritual appears at first sight to be a simple technical act of craftsmanship. In reality, it is nothing of the sort. The patient, with the psychological and financial support of his family group, undergoes a painful (for technical reasons mentioned above) and risky (from a health and spiritual point of view) operation, at the end of which he will have proved his commitment to the community and his personal worth. The ritual is successful if the tattoo is complete, and not before the *tufuga* has placed the final mark on the navel: a black rectangle decorated with small frigate bird motifs. The outcome is always uncertain, and depends on several factors: respect for the rules and prohibitions laid down by the *tufuga*, the patient's morality and the quality of relations between the various participants. Ultimately, although the *pe'a* represents two flying foxes inside each other (the smaller one in the middle of the back in the form of a triangular motif, and the larger one enveloping the patient's abdomen), what matters is the social value of such an ornament. This ornament makes the wearer a political subject embodying the Samoan ethos characterized by dignity, respect, devotion, egalitarianism, as well as physical and psychological strength[5].

Following anthropologist Alfred Gell (1993), whose intuition was that, in the pre-Christian era, this type of initiatory tattoo gives a privileged symbolic value to the healing phase in comparison with the other technical stages (of pricking or bloodletting, as well as the completed tattoo design), we propose to rename this step the "metabolization" stage. This is because it's not simply a question of strengthening the body and healing, but also of examining the reactions provoked by this potentially harmful invasion of the skin. In other words, what is represented or figured by graphic elements is secondary to the reception, in the patient's body, of

5 For a discussion of the "Samoan ethos" and its role in contemporary governance, see Huffer and So'o (2005).

the *lama*, the black ink inserted by percussion on tools (Fig. 4).[6] As we shall see, it is the materials themselves, the work of the specialists and the presence of invisible agents that, on contact with the skin, can provoke unexpected reactions and lead to a series of assessments and judgments about the patient, the morality of his behaviour and the quality of his social relationships.

Figure 4

From the perspective of the actors and through an examination of their terminology, let's now take a closer look at how this central phase in the Samoan collective initiation ritual is managed. This means not asking about how the patient endures the operation, but rather how the tattoo behaves at the organic level of the skin, and what cultural devices accompany this process.

Similar to many other rituals, the *tāʻaga peʻa* (the hitting of the *peʻa*) combines the intervention of human and non-human agents: the *tufuga tā tatau* (himself inducted in a ceremony at the end of his apprenticeship),

6 For a more detailed discussion on tattooed iconography, see Galliot 2017.

his assistant-stretchers (*toso*, from the Samoan verb "to pull"), the consecrated tools (*autā*), the pigment (*lama*), the participants (*autapua'i*), as well as invisible spirits (*aitu*). Only the initiates remain passive. In this context they are individually called *o le ta'oto* ("the lying down"), whose patience (*onosa'i*) is encouraged and acknowledged throughout the process.

As they chiefly involve technical know-how, the handling of tattooing tools and the stretching of the patient's skin do not pose any particular challenges of interpretation. However, in order to grasp the importance of the metabolization phase mentioned above, it is important to take a closer look at less visible stages of the process, as they are peripheral to the operation itself.

At this stage, tools, pigment and skin treatment deserve our full attention. The *autā* are made by the specialist prior to the operation, or simply sharpened by him. The number of needles in a tool depends on the design to be tattooed and there are three main categories of tools (from narrowest to widest: *aumono*, *ausogi'aso*, *autapulu*). Of mythical origin, tattooing implements are animated and endowed with revelatory powers. According to oral tradition they were brought to the archipelago by Taemā and Tilafaigā, two Siamese sisters with superhuman powers. It was during a long journey throughout the Samoan archipelago – during which they additionally performed prodigies in war and food consumption – that they handed over tattooing tools to the ancestors of today's tattoo specialists in exchange for their hospitality. Until the mid-19th century, this primordial act was connected to a place of worship called Lalotalie: in this case, a tree from the *Terminalia* family considered to be the abode of Taemā. This particular tree was looked after by a chief named Su'a in the village of Salelāvalu. It was burnt down in the 1860s at the request of a missionary from the London Missionary Society (Mallon/Galliot 2018: 52–53).

The Samoan mythological corpus is extraordinarily rich, and to this day remains a key political tool for establishing and reaffirming the sacredness and status of the clans, by homology with the sacredness of the ancestors from the time of the origins. In the ancient Samoan politico-religious system, the various clans were (and still are) ranked according

to their genealogical links with spirits, different classes of living species or deified human ancestors, to whom a local cult was dedicated (at family or village level).[7]

Thus, on an ideological and mythological level, these *autā* – the tattooing utensils – materialize a link between tattoo specialists and tutelary deities. Just as is the case in the political sphere, the existence of a genealogical link between Taemā and Tilafaigā and the *tufuga* clans sanctions their status, their legitimacy and their magico-ritual "power". During the operation, the *autā* are simultaneously technical and mediating objects, animated by invisible forces which, according to some tattoo specialists, are the tools' principal agents. The tattoo experts themselves merely guide them.

The black ink called *lama* is another active substance that plays a central role in ritual. Like *autā*, it is not an inert component, although it has undergone significant transformation over the course of the 20th century. This pigment for the preparation of the ink was obtained from the soot of combusted nuts of the candlenut tree (*Aleurites Molluccana)*. In the second half of the 20th century, it was initially replaced by kerosene soot (*lama keleseni*), which was more readily available than *lama* nuts. Then, as trade and communication networks expanded, it was replaced by Indian ink and industrial pigments (*lama palagi*), which can, since the availability of online suppliers, be ordered and delivered through the internet.

Traditionally produced by the initiate's family, its making required a series of procedures designed to guard against attacks from spirits attracted by its glow at night. Today, the burning of *lama* nuts is still considered with fear. Production of the ink was strictly supervised by *nofotane* (wives living in their husband's household) who took turns at *afisā* (specially-built and restricted or tabooed fireplace) to ensure that the flame never went out, otherwise the pigment's colouring properties would be

7 For a presentation and discussion on the mythological corpus regarding Samoan tattooing, see Galliot 2019: 43–78.

lost. The curse affecting abnormal discoloration of a tattoo and superinfections is called *lama'avea*[8] (spirit attack during pigment manufacture).

Lama produces a very deep black coloration on the skin. It is also considered a "hot" substance (*mū*, in the sense of "causing a burning sensation"). The warming effects of its insertion under the skin are treated with *nonu* leaves (*Morinda citrifolia*) applied directly on the skin. This plant is reputed to absorb the heat emanating from the wound. The *lama* also causes significant swelling of the dermis. So, after each daily tattooing session, the patient's wounds are soaped and massaged every two or three hours, to mechanically evacuate excess ink and lymph and accelerate healing.

Locally, the collective representations linked to these processes are not the subject of detailed elaboration, and the identity of the spirits involved in the theft of the *lama*'s colouring properties is not definitively known. This relative indeterminacy about the invisible forces involved is not attributable to a lack of interest on the part of the population, but to a rather strict separation of knowledge instituted in Samoa by the existence of ceremonial prerogatives of the *tufuga* (specialists in tattooing, canoe building and house building), and above all to a rejection of beliefs that hark back to the pre-Christian past.

Indeed, the process of Christianization[9] did not succeed in abolishing the tattooing ritual, but in just a few decades replaced the indigenous religious system, which was comparable to what anthropologist Raymond Firth described in Tikopia (a Polynesian outlier in the southeast of the Solomon Islands). In this context, Polynesian totemism is characterized by the "use of animal and plants species by deities as forms

8 In a 2007 press article entitled "Samoan Tattoo customers risk death – and an ancient curse", the president of the Samoan cultural association Malofie warns of the dangers of *lama'avea* and the rules surrounding the tattoo rite (Sunday Star Times, 24/06/2007).

9 Initiated in the 1830s by the Anglicans of the London Missionary Society and the Wesleyan Methodists, followed by the Marist Brothers in 1845 (See Gilson 1970, Meleisea 1987).

of visible incarnation", (Firth 1930: 291). As a result of the massive conversion of the Samoan population during the 19th century, our Samoan interlocutors carefully avoid evoking spirits belonging to a past that they themselves consider dark, if not pagan, even if, as we see in the case of tattooing, the latter involves ritual procedures that do not sit well with Christian orthodoxy.

It should be stressed here that one of the principles common to pre-Christian religious systems in Oceania is the immanent and contagious nature of the sacred. In this context, a logic of body permeability prevails, by virtue of which vital force and reproductive powers can enter and leave persons and contaminate bodies and objects. Under these conditions, the skin is to be considered simultaneously as a porous organ that needs to be strengthened, but also as a reaction environment which, in the course of pigment metabolization, reveals the psychological, physical and relational state of the person receiving the tattoo.

In other words, before constituting a protective wrapping holding *mana*[10] dispersal – as it was brilliantly interpreted by Alfred Gell (1993) – the step of fixing the image under the skin seems central here. To fully understand this vernacular logic of tattoo reception, we must perhaps insist on the materiality of the pigment which, in a Western context of mass consumer goods produced in an aseptic setting, is generally perceived as a simple colour with little impact on the body. In Samoa, all ornamental motifs (which in the West we tend to interpret according to a more discursive logic) have a materiality of their own. As we have already said, it causes a thickening of the outer skin layers. In certain circumstances, the tattoo itself may swell so that the motifs appear embossed. This is particularly the case during dance performances, where

10 Codrington's classic definition states that *mana* "is what works to effect everything which is beyond the ordinary power of men, outside the common processes of nature" (Codrington 1957 [1891]: 118–19). Disserting on Tongan *mana*, Mills (2016: 77–105) understands it as metaphysical efficacy. He goes on providing several examples of actual actions on bodies that affect *mana* dispersal and concealment.

some dancers slap their abdomens and inner thighs to highlight their tattoos, which have been oiled beforehand.

The tattooed image is doubly active. Before being appreciated for its graphic qualities leading to aesthetic judgments, it is first and foremost a compound of substances and foreign bodies animated by a set of entities (spirits, family relationships and ritual specialists). For example, a tool made by illegitimate persons (i.e. without the approval of a ritual specialist) or with inappropriate materials can produce harmful effects on the patient's body, and will be expected to cause spiritual sanctions. Unusually fading tattoos, or swelling that persists despite appropriate customary treatment with massage and *nonu* leaves, indicate either:

1) that ritual prescriptions and proscriptions have not been followed, or
2) that the patient's relationship with his or her family or village environment is problematic. This type of indication generally leads to the suspension of the operation until the supposed problem has been resolved.

Finally, during the last step called *samaga* (ointment ceremony) the initiates are formally presented before their family group, their ancestors and the Christian God. They are anointed with *sama* (Fig. 5, a mixture of coconut oil and turmeric), then adorned with a necklace of fragrant flowers (preferably *Cananga odorata*). This Samoan chrism is used both for its visual properties (the production of a golden sheen) and for turmeric's well-known antiseptic and anti-inflammatory effects.

The invisible forces contained in the tools by virtue of their link with Taemā and Tilafaigā in primordial times, the properties of the pigment (which derive from the quality of the work of the women who produced it), the know-how of the ritual specialist, the material and emotional support of the patient's group all together form a set of visible and invisible agents in direct contact with the median part of the body (the seat of *mana* in Western Polynesia). At the time of the ritual, this part of the body is interpreted not simply as a surface for inscription, but as a reactionary environment whose changes in state are scrutinized. We would like to

emphasize the importance of what we have chosen to call the pigment's "metabolization" phase. It is during this stage that the participants, the specialist and his assistants concentrate their efforts.

Figure 5

Some silently pray for the operation to go smoothly. Others apply skills of perception to identify tattoo discoloration, an unexpected wound or any other unforeseen feature visible on the tattooed image, which in this case represents a clue to which the tattoo master is entitled to interpret. The risks involved, including those of an immaterial nature, are limited and neutralized by material actions, so that naturalistic knowledge about the properties of certain plants[11], religious conceptions (Christian and pre-Christian) and relational configurations are interwoven and act in concert in the transformation of initiates.

11 Mainly candlenuts (*Aleurites moluccana*), nonu leaves (*Morinda citrifolia*), turmeric (*Curcuma longa*), ylang ylang flowers (*Cananga odorata*).

Parthenogenesis, endosymbiosis and interspecies mating in Aorigi (Eastern Solomon Islands)

The second case takes place at Aorigi, a small island society made up of around a thousand Melanesian horticulturalists, fishermen and sculptors, divided into a dozen lineages who speak Owa, an Austronesian language. Although they converted to Christianity in 1950, the Aorigi have maintained the ritual procedures to regularly address their human and non-human ancestors on whom their livelihood depends. Generally speaking, the entire secular and ritual life of humans is itself conditioned by the relationships they maintain with the non-humans with whom they cohabit in a common territory called *fenua* (Revolon 2003, 2007a, 2018, 2022).

This centrality of relations between humans and non-humans is manifest in the aesthetic system (Revolon 2007b), which convenes a large bestiary of aquatic, terrestrial and avian beings, as well as plant species. Among them, the female snake Kafasiqari, which acts on the reproduction of the living species, is omnipresent in figurative or abstract form. She can be seen on the wooden posts of houses erected for second funeral ceremonies (Figs. 6 and 7). Her sinusoidal layout is also visible on the surface of wooden ritual vessels, in the arrangement of beads on shell money; it is scarified on the faces of young children and, until the 1960s, was tattooed on women's bodies. Examining the mythology associated with this ubiquitous snake, we propose to examine the entanglements of human-non-human relations in the scope of the Aorigi's conceptions of procreation by taking at face value, in the light of naturalistic data, the human-non-human continuities they describe. In so doing, we will attempt to show that Kafasiqari mythology and its visual and plastic manifestations act as a form of low-tech bioart, since they work "on the living and the logic of life, by doing things differently from nature" – to get back to Kac's words.

Figure 6: & 7: At the initiative of the elders of the lineages, great mourning closing ceremonies (farunga) are regularly organised for those who have died in previous years. These require the construction of collective ruma ni farunga houses, whose roof support posts are sculpted with beings that are often hybrids, particularly Kafasiqari. She appears in the form of a snake or a being combining human and reptilian attributes.

The Kafasiqari myth, first recorded by Codrington (1891) on Makira, is shared by many Melanesian societies, including eastern New Guinea (Massim, Wogeo Island), the Solomons (Guadalcanal, Malaita, Makira) and Vanuatu (Banks Islands, Epi, Maewo) (Kongäs Maranda 1977). In the versions found in the eastern Solomons, where Aorigi is located, Kafasiqari is described as a gigantic serpent or an entity combining human, avian and reptilian morphological attributes (Fox 1924 *op. cit.*: 361). She is alternately presented as the origin of the first humans (Fox 1924 *op. cit.*: 362), the origin of a particular lineage, or is extended as a trope to represent the entire island (Scott 2007). In Aorigi, Kafasiqari is more specifically identified as *mwaa ni ano*, literally the snake of the deep or snake from below (*mwaa* serpent, *ni* of, *ano* depths); a name that refers both to the Pacific boa (*Candoia carinata*) and to all land snakes (as opposed to tree or sea snakes) (Mellow 2014). The Pacific boa (*Candoia carinata*) is a medium-sized snake (up to 120 cm long) from the islands of the southwest Pacific. It is mainly an inhabitant of the low forest of Sulawesi and further east from the Moluccas and New Guinea to the Solomon Islands (Wynn/Zug 1985: 15).

Aorigi mythological tales tell of a time when a first generation of non-human morphological entities – snakes, turtles, trees, birds, insects, fish – emerged spontaneously from the depths of land and sea. All these creatures gave birth to the first humans from whom modern matrilineal lineages have evolved, and to whom they taught the language, rules and knowledge that continue to govern human existence.

Mythology describes Kafasiqari as a gigantic female boa living deep in a cave in the Haununu region, on the large island of Makira nearby Aorigi. It is said that she gave birth without a sexual partner to a child with a human morphology, whom she named Kaugari. Kaugari married a human and in turn gave birth to a daughter named Kawasi. Every morning, on her way to the gardens, Kaugari handed her child over to her mother, who looked after her. One day, while the boa was taking care of the child, she became hungry and began to cry. Her grandmother coiled around her, put her head close to hers and whispered a lullaby. Returning from his fishing trip, the father heard the child's cries and followed them to the cave, where he had never seen Kafasiqari before and had no idea his part-

ner's mother was not human. On discovering the snake wrapped around his daughter's body, he grabbed his adze, sliced the reptile's body into several pieces, picked up his daughter Kawasi and carried her back to the village. In the evening, Kaugari went to her mother's cave and found her dying. The snake's head continued to weep and sob. Upon Kaugari's question "Who did this?" the mother replied: "*Fungao ku*, my son-in-law". The daughter carefully gathered up the pieces, cast a spell and magically reunited her mother's body. The operation completed, the boa spat and its saliva formed the red-skinned, white-fleshed *qoruqoru* yam tuber. She vomited blood, which formed the other yams: *faga* (red yam), *futofuto*, *aufifei*, *tafoa*, *agogo* (white yams), *takai mafana* (red and white yam), *aikenesi* (red and white yam with red juice), *mwa* (some red, some white), *risu* (red skin, white and red flesh), *gope* (red and black yam). Kafasiqari showed her daughter how to slice the clones and plant the pieces. Each time she cut the tuber, it healed and changed colour. The young woman planted all the yams, resulting in the wide variety of cultivars that exist today.

Keen to get away from the humans who had mistreated them, Kafasiqari and Kaugari left the island, entrusting Kawasi with the horticultural knowledge and artefacts needed to grow tubers. The female boa emerged from the cave with her daughter on her back. She meandered through the forest to the sea, swam to the island of Guadalcanal, where she settled and whose fertile lands she has ensured ever since.

How do the Aorigi conceive of the spontaneous emergence of a female boa from a territory and the birth of a human by a female snake without sexual partnership? Two modes of interspecific procreation are at work here which, as we shall see, are based on elements borrowed from boa behaviour.

The myths tell that Kafasiqari, initially contained in the depths of a cave, emerged from the territory in what seems to be a morphologically different materialisation of the latter. As with their Are'are (Malaita) neighbours, the apical ancestors, initially fused with the territory, "rose" from it: crocodiles from the rivers, sharks from the sea, eagles from the mountains or, as here, snakes from the ground: "[…] ancestral authority is fused with locality, not only on the surface of the land but also vertically, in the depths of the earth, in the rivers, in the sea and in

the sky. In fact, locality cannot even be conceived of without the apical ancestors and their subsequent deeds at each of the places of origin. If earth (*mako*), rivers, sea and sky previously existed materially, land proper (*hanua*) [*fenua* among the Aorigi] came into being with the apical ancestors […]" (Coppet 1985: 80).

We postulate that the begetting of a snake by the land evokes endosymbiosis, described by biologists as "a form of symbiosis between two living organisms, where one is contained within the other" (Ramade 2008: 202). Here the endosymbiosis involves the *fenua* - the inhabited territory considered as an alive entity – and the boa. One of the boa's singularities is its phenotypic plasticity, i.e. the ability of an organism to express different phenotypes depending on its environment, which explains researchers' continuous debates about the number of subspecies. So much so that van der Pols was able to write that "Each island has its own type with its own characteristics. However, it would be an exaggeration to consider each type as a subspecies" (van der Pols 1986: 161–162). *Candoia carinata* is described as "exceedingly polymorphic in colour and pattern in life, 'with everything from lemon yellow to charcoal occurring, including bright brick red, and with striped, spotted or zigzag patterns, dull to brightly contrasted…'" (Smith/Chiszar/Tepedelen/van Breukelen 2001: 290). Or the boas of the Solomon Islands " […] vary considerably in color and pattern, with colors including reds, pinks, oranges, yellows, browns, grays, and black. Patterns may be blotched or splotchy, lacking altogether (uniformly colored), or with an almost zigzag dorsal stripe. Additionally, these snakes can become lighter or darker in the course of a day. I have seen individuals change from a dark brownish-red with heavy patterning to a light pinkish-tan with faint patterning over the course of a few hours" (Carille 2012: 118).

Skin colour in vertebrates is determined by the pigments or crystals contained in chromatophores. Reptiles (and fish) have three types of chromatophores: melanophores for black and brown, xantophores for red and yellow, and iridophores for light reflection, enabling them not only to display a wide range of colours, but also to change them. These colour variations, a rather rare phenomenon in snakes, have been observed in particular in the *Candoia genus* (Hedges/Hass/Maugel 1989).

Light and temperature conditions, degree of activity (linked to feeding) and emotional states are three of the parameters most commonly cited in the literature as inducing skin lightening and/or darkening, as well as cryptic coloration. For instance, "When disturbed, the juveniles would not defend themselves or try to escape as most other young snakes, but would become completely ridged. They would remain this way even when picked up. Their colour, co-ordinated with this behaviour, giving very much the impression that they are imitating a twig. This type of mimicry has also been observed in juvenile *Candoia carinata paulsoni*…" (van der Pols 1986: 164–165).

On Waigeo island (Papua New Guinea), *Candoia carinata* "…is by far the smallest and most variable in pattern of species in the genus. These snakes frequently are encountered on low shrubbery around human dwellings and plantations. New Guinea Tree Boas can be found climbing, coiled on the ground, and even burrowing. Individuals are usually blotched, with flowery patterning, but they can be striped, banded, or uniformly coloured. Ground colours can be grey, tan, yellow, cream, or reddish-brown, with most a mottled grey and white similar to *Hyla marmorata* (the Marbled Tree Frog). Mottled individuals are quite cryptic, blending extremely well with tree bark… Similar to *C[andoia carinata] australis*, *C[andoia carinata] paulsoni* has the ability to become darker and lighter throughout the day" (Carille 2012: 119–121).

In other words, not only are the boas' skins variegated, but they also have the ability to blend into the environment for camouflage purposes, as well as to simulate natural movement, in this case that of a motionless twig. Variable homochromia (adapting colouring to that of the environment at any given moment) and homotypy (the animal takes the form of an object), that is camouflage through mimicry of colour and form, make Kafasiqari's land affiliation – and that of the human matrilineal lineage to which she gave birth – to the territory and its localities patent: place of emergence from the earth, residence, cutting site, pilgrimage of her daughter, etc. Here, then, the territory, conceived by the Aorigi as the first living entity, gives birth to the snake, which is consubstantial with it, and to which it transmits some of its qualities, in this case its colour, shape and behaviour. The snake gives birth to the first human

of the modern *mwa* (snake) lineage. As the generations go by, the conditions of reproduction become more conventional (conception, giving birth, breastfeeding).

The term used in the myth for begetting is *fagaworaia*. In human terms, *fagaworaia* means "to give birth", but also "to bear", in the sense of being pregnant, "to create", "to realize" and "to bring about". This verb contains the idea of a begetting in which sexuality is not necessarily required. It is used to characterize reproduction by cloning in the yam and by parthenogenesis in the boa. In the animal kingdom, parthenogenesis occurs in many taxa (nematodes, arthropods, etc.). In these cases, it concerns "unisexual" species that ensure their progeny through "obligatory parthenogenesis". Among vertebrates, cases of "facultative parthenogenesis" (within species also using sexual reproduction) were observed and described as early as the early 19th century in domestic chickens, then in turkey farms. Similar examples were subsequently recorded in zoos involving captive-born or captured females of condor, reticulated python, zebra shark and Komodo dragon. Scientists then thought that this "facultative parthenogenesis" only affected isolated animals deprived of a potential partner. Genetic analyses have shown that this mode of reproduction also exists in the wild in four taxonomic groups: sharks, birds, lizards and snakes (Booth *et al.* 2014). In the case of snakes, facultative parthenogenesis[12] is currently documented in various species[13] of rattlesnakes, vipers, pythons and boas, including *Boa constrictor imperator* and *Epicrates maurus*. This single-parent mode of reproduction, in addition to its viviparity, has not been specifically

12 There appear to be two mechanisms of facultative parthenogenesis in snakes leading to "opposite results in terms of sex ratio and conservation of heterozygosity: in the first case there are only homozygous males that can be conceived as half-clones, while heterozygosity is conserved in the second case: the offspring are clones of the progenitor" (Dorso 2012: 23–24).

13 More specifically, facultative parthenogenesis is attested in *Crotalus horridus*, *Crotalus durissus unicolor*, *Thamnophis marcianus*, *Thamnophis elegans vagrans*, *Acrochorus arafurae*, *Phython bivittatus*, *Malayopython reticulatus*, *Python regius*, *Boa constrictor imperator*, *Epicrates maurus*, *Agkistrodon contortrix* and *A. piscivorus* (Dorso *ibid.*: 2012: 23).

studied for boas of the *Candoia* genus, and the question remains open – although not for the Aorigi – insofar as these snakes remain little studied. While this begetting belongs to the sexual mode of reproduction, since it requires the intervention of a gamete, it is akin to asexual reproduction due to the absence of the contribution of genetic material from another individual. This example signals a sexuality without otherness, a sexuality without the essence of the other, in the words of Pradelles de Latour (2001: 91). Kafasiqari, the sole progenitor, thus places her descendants under her exclusive and solitary maternal authority, instituting and legitimizing a matrilineal kinship system.

The parthenogenesis that enables Kafasiqari to sire her daughter is therefore a form of begetting that can be observed in non-humans. Moreover, phenotypic plasticity has also been confirmed by biologists in yams, as in most cultivated species. These elements lead us to hypothesize a conceptual continuity between animal parthenogenesis, plant cloning and accounts of the birth of morphologically distinct beings linked by substantial identity (Panoff 1968: 278; 1998: 39–40). The non-sexual, multispecific procreative basis of Aorigi kinship as presented in the myths and instantiated in the aesthetic system emphasises its inscription in a residential space (endosymbiosis) in the first generation, and in a female matrix (parthenogenesis) in the second generation. By adopting a sufficiently broad notion of procreation, both cultural and biological, the Aorigi insist on human-non-human continuity and supplement their human ontology with the non-human. And to defend the non-metaphorical nature of this kinship, they rely on biological processes: endosymbiosis and parthenogenesis. This approach seems to overlap with that of bioart – not in terms of the methodological aspects of biotechnologies (cultivation of living tissue, genetic manipulation) – but in terms of the reflexive aspects that aspire to question inter-species dialogue, explore the imaginary of hybridisation and open up to the otherness of others.

Concluding remarks

The two cases presented here describe modes of figuration which, before stabilising in animal representations – the snake among the Aorigi of the Eastern Solomons and the flying fox in Samoa – are based on acute observation of living beings. In Samoa, it is at the organic level of a person's skin reactions upon the tattooing of images of bats which provide crucial clues for the continuation of the ritual. Among the Aorigi, it is the processes of biological reproduction involving humans and non-humans that feed their imagination (Godelier 2015) and serve as a framework for the elaboration of mythical thought. By approaching tattooing not within a representational and symbolic framework, but within an indexical, pragmatic and relational framework, we have attempted to show the extent to which this ritual of imagery accords a central place to the exploitation of vital processes, and to the patient's metabolism. That said, an in-depth ethological examination of this bat, specific to Samoa, remains to be carried out in order to better understand what motivates its schematisation on human bodies through tattooing. In the Solomon Islands, we hope to have demonstrated that the Aorigi's emic concepts of procreation extend to non-humans, creating beings with multi-species kinship. Within this recomposed family, a trans-specific filiation is born, constructed and nourished by indigenous naturalist knowledge.

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