# FOOTPRINTS IN THE MUD OF AGADEM
## Eastern Niger's way towards the Anthropocene

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**Abstract:** Petrified footprints of now extinct rhinos and those of humans in the mud of the former lake Agadem may symbolise the beginning of an epoch dominated by humans. How could such a "local" Anthropocene be defined? In eastern Niger, two aspects seem particularly important for answering this question. The first is the disappearance of the addax in the context of the megafauna extinction. The second is the question how the "natural" environment may be conceived by the local Teda where current Western discussions highlight the "hybridity" of space.

**Keywords:** *Anthropocene, Teda, Space, Conservation, addax*

Agadem is a small oasis in eastern Niger with hardly 200 inhabitants. Most of them are camel breeding nomadic Teda from the Guna clan. Some possess palm trees there. The oasis is situated inside a fossil lake and sometimes digging or even the wind uncovers carbonised fish skeletons, shells or other "things from another time" (*yina ŋgoan*), as locals call them. But when a traveler crosses the bed of the lake with locals, they make him discover more: Petrified tracks from cattle, from a rhinoceros[1] and even from a human being who long ago walked in the lake's mud.[2]

1 Locals presume the tracks to be those of a lion. Nevertheless, according to scholars, they are probably the tracks of a rhinoceros. Thanks for this information are due to Louis Liebenberg (Cybertracker) and Friedemann Schrenk (Palaeanthropology; Senckenberg Institute, Frankfurt am Main).

2 The following results were collected by the author during a research on space, orientation and tracking among the Teda in Eastern Niger (N'Gourti, Agadem, Bilma, Dirkou) during the spring of 2014.

*Fig. 1 A rhino's footprint in the mud of the former lake Agadem (Musch, 2014, Agadem).*

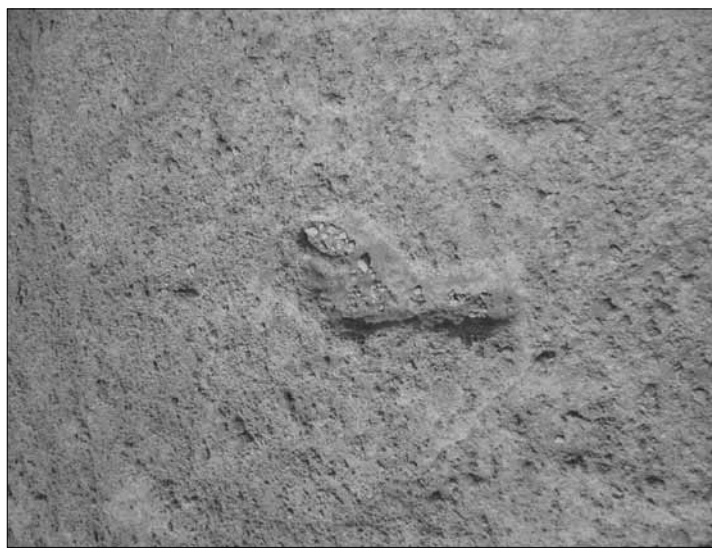

*Fig. 2 A human's footprint in the mud of the former lake Agadem (Musch, 2014, Agadem).*

Locals know these tracks since childhood. Nevertheless, each time they pass these places anew, they examine and comment on them. In so doing, they show a local understanding of the "age of humans": Rhinos, which left their tracks here, have long been extinguished in the area, and replaced by humans who also left their footprints in the mud.

*Fig. 3 Teda of the Guna-clan commenting on the footprints left in the mud of the former lake Agadem (Musch, 2014, Agadem)*

The story of human domination continues in the east of the fossil lake, where a small mountainous massif elevates: the mountains of Agadem. On one of these mountains, the "Guna hill" (*gora Guna*), an ancient settlement existed once. Nowadays, there are only remains of stone houses where once the "people from another time" (*anna ŋgoan*), the supposed ancestors of the Teda Guna, lived. More than in these stony leftovers locals are interested in a mass of weathered horns from the white or screwhorn antelope, or addax (*Addax nasomaculatus*), and gazelles lying around here. In particular, the horns of the addax attract the Guna's attention, as they remind them of ancient times when wildlife was still abundant and the now nearly extinguished addax was present in large herds.

*Fig. 4 The Teda Otman and Mamadou of the Guna clan presenting horns of the Addax nasomaculatus in front of the remains of an ancient stone-house on Guna hill where they were found (Musch, 2014, Agadem)*

Today, the story of the domination of "nature" by human beings continues in the region in an even tightened way. Since 2009, the China National Petroleum Corporation (CNPC) began to prospect for oil here and since 2011 it is exploiting several blocks.[3] Wells, called *šerka hetroleõ* (petroleum basis) by the locals, and exploitation infrastructure have been established, with prospection going on now in more northern areas. Several negative effects on the environment, such as soil degradation, habitat fragmentation, pollution by noise, light, emissions and waste, the overuse of hydraulic resources, increased poaching, etc. have been expected already before the prospection

3 Estimates were at 390 million barrels of oil and 10 billion cubic meters of gas. Three fields (Goumeri, Sokor, Agadi) are exploited (République du Niger 2009). The exploitation infrastructure includes, among others, 21 wells with a capacity each of 1000 bbl. per day, an airport of 88 ha, pipelines of nearly 200 km or three camps (ibid.). A study anticipates "medium size" negative impact on the fauna, consisting among others of the overexploitation of animal resources, habitat loss, intoxication and changing animal behaviors (ibid: 81). In fact, oil exploration and protection can represent, particularly in the desert, an important threat to the fragmented and remnant biodiversity (Duncan et al. 2014: 1).

began (Republic of Niger 2009), all of which were later on confirmed by locals and NGOs (Noé Conservation 2013).

In 2012, a conservation area was created in the west of the exploitation sites: the *Réserve naturelle nationale de Termit et de Tin Toumma* (RNNTT). With its 97,000 square kilometres, it is the biggest terrestrial conservation area in Africa (Noé Conservation 2013). The conservation area harbours the last viable population of addax in the wild. There are also other endangered species, for example, the Dama gazelle (*Nanger dama*), the Barbary sheep (*Ammotragus lervia*), the Nubian bustard (*Neotis nuba*), the Arabian bustard (*Ardeotis arabs*), as well as the most important sympatric community of carnivores in the Sahara with, amongst others, the African cheetah (*Acinonyx jubatus hecki*) and the Caracal (*Caracal caracal*) (Noé Conservation 2013, République du Niger 2009: 55).[4]

Thus, the footprint of human beings in eastern Niger becomes more and more important: The tracks of a human, cattle and a rhinoceros in the mud of Agadem may symbolise an upcoming antagonism between livestock keeping humans and "wild" predators. The numerous addax-horns amongst the remnants of the ancient settlement recall the former abundance of a species now nearly extinguished by human predation and droughts. Not least, the spatial antagonism between the oil exploitation areas with their negative impact on the environment on the one hand and the conservation area on the other may show two current trends how humans try to dominate nature: either they exploit and damage it, or they confine it to a delimited space.

In the following sections, after a short review of how the Anthropocene is conceived among scholars, I propose to ask how a "local Anthropocene" may be defined by focusing on the Teda's conceptions of "nature," of human dominance, and of space or the environment

4 The superficies of the area determined by Parliament has been reduced later on in order to not disturb the oil exploitation. Now, the conservation area does not include the oil containing areas of Dibella, N'Gourti and Agadem. Six prospection areas are also excluded, among them Bilma: "Note that, due to a strong pressure of several actors, in particular of the petroleum sector, the Ministry of the Environment and Hydraulics has proceeded to a reduction of the limits proposed by the program" (Antilopes Sahélo-Sahariennes 2011: 18–19). Nevertheless, the creation of the RNNTT allows Niger to reach the Millennium goals of the UN and the Convention of 1972 about the National Heritage of the UNESCO prescribing that 11% of a territory has to be modified in protected areas (Antilopes Sahélo-Sahariennes 2011: 198).

in general. I will centre attention in particular on two aspects which seem important for this topic. The first is the disappearance of addax in the context of the megafauna extinction and the antelope symbolism among the Teda. The second is the question how "nature" and human impact on it may be conceived by the Teda, where "Westerners" are actually highlighting the "hybridity" of space, i.e., an unavoidable entanglement of "nature" and "culture."

## Towards a "Local" Anthropocene

The "Anthropocene" has become a widely used term when discussing worldwide relevant environmental issues such as climate change. The concept of an earth-age in which the impact of human beings becomes determinant was introduced at the beginning of the new millennium by Paul Crutzen (2002).[5] Referring to analyses of air trapped in polar ice, which showed growing global concentrations of carbon dioxide and methane, it is supposed that the Anthropocene began in the late eighteenth century. Currently, many facts contribute to showing the growing human impact on the earth system. Among others, Crutzen mentions the methane-production by an enhancing cattle population, dam building or river diversion, the exploitation of fresh-water resources or land, the use of nitrogen fertilisers and the growing energy consumption. This leads to photochemical "smog," climate warming and acid precipitation (Crutzen 2002: 23). Other scholars indicate similar human impacts due to the increasing use of fossil fuels (Tickell 2011: 929), the growing consumption of land (Ellis et al. 2013: 1), the alteration of the terrestrial biosphere (Ellis 2011: 1029), the fact that soils are rendered anthropogenic by ploughing, the use of fertilisers or contamination (Hamilton and Grinevald 2015: 79), and so on.

5 Even earlier, precursors spoke of the "Anthropocene." Crutzen, for example, cites Stoppani and Vernadsky, who already used similar terms in 1873 and 1926, respectively (Crutzen 2002: 23). Nevertheless, as Hamilton and Grinevald (2015: 59) underline, such precursors discussing an "age of human beings" centred their arguments on the human impact on the environment but not on the Earth system, whereas in recent discussions scholars argue in terms of the latter. Thus, according to Hamilton and Grinevald, "there were no precursors to the notion of the Anthropocene" and "there could not have been because the concept (put forward in the year 2000) is an outgrowth of the recent interdisciplinary understanding of the Earth."

Nevertheless, even if scholars agree that we are living in the Anthropocene, there is no consensus on when this age began. There is even no consensus among scientists if we should consider the Anthropocene as a geological time span (GTS), as a period, an epoch or an age in the geologic timescale. "The solution is not easy, because the beginning of this GTS is undefined and the end unknown" (Certini and Scalenghe 2015: 77). Proposed dates for the beginning of the Anthropocene are in fact various. For some scholars, the Anthropocene started already before the end of the last glaciation (i.e., 10,000 years ago or more), for others in the 1960s (Lewis and Maslin 2012: 171).[6] The task of defining the new age becomes difficult, because a geological time unit requires changed geological stratigraphic material records on a global-scale. In short, to determine a global-age, markers like the Global Stratotype Section and Point (GSSP) must be detectable on a worldwide scale (ibid: 171–173).

More pragmatic views on the Anthropocene accept geographically diachronic starting dates. Such views can in particular be found among ecologists and conservation biologists. As Corlett states (2014: 37), "ecologists have had little problem with a diachronous start (i.e., starting at different times in different places), depending on the date at which human impacts became regionally significant." This viewpoint may legitimise a "local" definition of the Anthropocene, as I will try to outline in the following.[7]

Let us thus return to the Teda commenting on the footprints in the mud of Agadem or the numerous horns of addax in the ancient settlement they showed me on the Guna-mountain. The rhino's footprint and the horns of addax merit their attention, because they remind them of something that no longer exists in the area or is nearly extinguished: the rhino has completely disappeared, and addax has become extremely scarce and endangered. The Teda's attention for

6 Proposed dates are for example 1610 or 1964 (Lewis and Maslin 2012). Whereas the former date is marked by a minimum of the Orbis spike dip in $CO_2$, the latter one presents the bomb spike peak in "Carbon-14." Tickell (2011: 929) suggests a less precise but still well circumscribed date. According to him, the great change was caused when the use of energy sources shifted from human and animal muscle power (as also water and wind) to the use of fossil fuels.

7 "In ecology, the Anthropocene concept has focussed attention on human dominated habitats and novel ecosystems, while in conservation biology it has sparked a divisive debate on the continued relevance of the traditional biocentric aims" (Corlett 2014: 36).

the remains is striking, as, by realising the disappearance of the local megafauna, they may become aware of the increasing dominance of man over the environment. Realising the human dominance embodies the awareness of the fact that we are living in an "age of humans." This may constitute a "local" definition of the Anthropocene. Thus, the human footprint in the mud of Agadem and the tracks of (probably domesticated) cattle are highly symbolic.

In the following, I will focus attention to such a local Anthropocene. Two points are in particular important and will allow relating the local events to a worldwide discussion around the topic. First, I will have a closer look at arguments for a diachronous starting date of the Anthropocene. A relevant feature here is the loss of biodiversity, in particular the extinction of the megafauna. In fact, for locals, disappearing large animals – as the rhino or the addax – are probably the most salient sign of diminishing biodiversity. Second, such loss of biodiversity and the disappearance of the fauna engender claims for nature conservation. The discussion can be expressed in the following question: should we create more or less "closed" conservation areas or should we rather consider the establishment of more hybrid spaces where "nature" meets the "human"? Such concepts are somehow embodied in current spatial orders in eastern Niger – on the one hand the Termit conservation area and on the other the neighbouring oil exploitation and, not least, a "traditional" spatial understanding of the Teda. In particular the Teda's spatial concept will be discussed in the last section of this paper.

## Addax and the Megafauna Extinction

Above, I argued that environmental changes may be realised on a local level at first by modifications of such prominent parts of nature as the megafauna. But the Anthropocene may not only be defined by decreasing biodiversity on such a local level. On a worldwide one, too, the loss of biodiversity may show us the beginning of the new age, as Cardinale argued: "Based on our current understanding of the universe, the only thing a space traveller is likely to be stuck by, and the one thing that appears to be fundamentally unique to Earth, is its remarkable variety of life. (…) While the great variety of life is perhaps the most striking feature of Earth, loss of biodiversity is one of the

most striking forms of environmental change in the Anthropocene" (Cardinale 2013: 1).

Several biologists suggest in fact that currently the earth's sixth mass extinction may be under way.[8] Barnosky et al. for example state that "current extinction rates are higher than would be expected from the fossil record" (2011: 51, McKee 2012), and many scholars underline the increased human-caused mortality among animals. Thus, hunting has, all over the world, caused a reduction or extinction particularly for large ungulates, mammalian carnivores and birds (Peters and Lovejoy 1990: 353).[9] In North America, humans are the main causes for mortality (51,8%) of large and medium-sized mammals and "animal populations are increasingly challenged by new anthropogenic mortality causes" (Collins and Kays 2011: 474). Not least, road-kills are an important mortality source, and infrastructure can have a great ecological impact leading to habitat fragmentation and possibly also to extinction (Forman and Alexander 1998).

In such a perspective centred on the disappearance of life-forms, the human caused extinction, in particular of the megafauna, could be characteristic for the Anthropocene. Of course, stricter definitions would not accept such views, as fauna extinction does not present a globally synchronous marker in time: "The Megafauna Extinction was actually a series of events on differing continents at differing times and therefore lacks the required precision for an Anthropocene GSSP marker" (Lewis and Maslin 2012: 174). Nevertheless, the link between the growing human impact on the earth and the decreasing number of species is striking. For example, Zalasiewicz et al. point at a coincidence of the arrival of modern humans and the disappearance of the megafauna on many continents (2011: 836), and for Crutzen (2001: 23) species extinction has strongly increased by the man-made disappearance of tropical rainforests which releases carbon dioxide.

Particularly Africa, which is often considered as a "living Pleistocene" (McKee 2012: 92) because of the wide persistence of large mammals

8 "Palaeontologists characterize mass extinctions as times when the Earth loses more than three-quarters of its species in a geologically short interval, as happened only five times in the past 540 million years or so" (Barnosky et al. 2011: 51).

9 Darimont et al. observe that human impact on trait change causes "some of the most abrupt trait changes ever observed in wild populations" (Darimont et al. 2009: 952).

such as elephants or rhinoceroses up to the present, may offer a good field to study such changes. In the case of the RNNTT in Niger, the most prominent animal that currently embodies the megafauna extinction is the addax, on which I shall focus in this section.

The addax was formerly widespread over the Saharo-Sahelian region. Today, it is confined to two or three sparsely inhabited areas between the Termit massif in Eastern Niger and the Djourab in Western Chad. Probably only 300 animals survive in the wild, with a main population of about 200 individuals in Niger (Newby 2013: 567–68, Rabeil et al. 2013). Teda call the animal *turbwe* (Pl.: *torba*). In the cold season, when the pelt of the antelope becomes fawn, it is called *turbwe zodaa* (*zedo* = cold). In the hot season, when the pelt becomes almost white, the animal is called *turbwe cõgwa*, "addax with the white pelt" (Le Cœur 1950: 185).

Teda are engaged with the addax and many other RNNTT's animals in a relation of respect and vicinity. Mahaman Djoumaye, the chief of the Mada clan, once stated: "We consider the bustard as our fowl, the fennec as our cat, the gazelle as our goat, the mouflon as our sheep, the addax as our cow. Thus, their destruction is linked to ours, the destruction of humans" (Elh Attoumane 2012).

The addax is a highly nomadic animal wandering over large spaces in search of forage. In the hot season, it moves towards the mountainous areas of the Termit massif or the steppe and comes closer to humans, whereas it during the cold season penetrates deeper into the desert, for example into the Tin Toumma or the southern part of the Erg of Bilma (Antilopes Sahélo-Sahariennes 2011: 28; Heu 1960; Newby 2013: 569). The ability of the animal to survive in extremely dry places where no other ungulate can life, not even the camel, is admired not only by foreign observers (Gillet 1965: 257–58) but also by the Teda.[10] The latter believe, for example, that the addax recognises places where it has rained. Thus, a Teda herder has only to follow the traces of an addax herd which will lead him and his livestock to places with water and some vegetation.[11]

10 Addax are supposed to feed on the fleshy stem, flowers and tuber of the parasite *Cistanche phelypaea* (Scrophulariaceae) which may, due to stored big amounts of water, allow them to survive in the desert (Wacher et al. 2007: 13).

11 This comment was given by Issouf Attoumane (Zinder). Gilles reports for the *Oryx dammah*, another bovid well adapted to dry environments, the following, which may

The addax is morphologically, physiologically and by its behaviour well adapted to a dry and hot environment (Newby 2013: 569). Teda underline this adaptation when they speak with admiration of the antelope. There are, in fact, some similarities between how locals describe the addax and how they conceive the "ideal" character of a travelling Teda: The latter should support the harsh conditions of the desert, drink and eat very small quantities when moving, know very well a hostile environment and be ready to leave at any moment. Not least, foreign observers also attribute these traits to the Teda (Chapelle 1982: 173–75, 335, 339). Furthermore, the fact that besides the gazelle, the addax was the sole animal the Teda hunted (Le Cœur 1950: 73), also shows a particular appreciation of the animal.[12]

Another trait of the addax is its permanent trial to avoid human presence, and such evasion seems to be the "sole efficient defence" of a species described as "very vulnerable in front of human action" (Heu 1960: 160), not very agile and easy to hunt (ibid.) Already in the 1960s, Heu stated that the addax prefers places "outside of traditional caravan routes" (Heu 1960: 158), a statement confirmed by Rabeil et al. today. The latter show that the addax' territory is in fact shaped by ancient caravan routes, and addax retired to pastures and transhumance areas distant from them (Rabeil et al. 2013). Contemporary monitoring also shows that addax groups are gradually removing from petrol exploitation sites and routes and that, due probably to the petrol exploitation activities, the addax population has been divided into two groups with different pastures (ibid.).[13] Already in 1965 Gilles stated that the addax "cannot support the slightest foreign presence" (Gilles 1965: 269). If it "has been disturbed several times in its preferred places, [it] can retire over large distances and loose itself in the Saharan solitudes where it will die by inanition" (ibid).

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also explain the addax' ability to find places with rainwater: "The Oryx seems to be extremely sensible for variations of the humidity of the air. It may know detecting the passage of a humid front and know guiding itself towards places where rain will fall" (Gilles 1965 : 259).

12 During a hunt, a Teda followed an animal until it was out of breath and he could kill it easily with his lance (Gilles 1965: 269).

13 In 2012, it was found out by monitoring that the addax divided into two groups, one pasturing in the Tin Toumma and the other in the Erg of Bilma. It is supposed that this scission was due to the petroleum exploiting activities in between the two regions (Antilopes Sahélo-Sahariennes 2012).

Formerly, the addax were numerous in the region and past reports of Azza hunting groups,[14] who killed 100–200 animals during one campaign (lasting 2 months) underline this abundance (Chapelle 1982: 196–206). However, until today the addax has undergone a considerable reduction in numbers as well as in geographical range, with a decline of more than 80% in the last two decades. As a result, the addax and the dama gazelle (*Nanger dama*) are the two Saharan bovid species with currently the highest risk of extinction (IUCN 2015, Newby 2013: 567, Rabeil et al. 2013).

The most important threats for addax are the pressure by the petrol exploitation (the noise of engines, light perceived at a long distance, petrol infrastructure) and poaching by military detachments or others,[15], as well as the increase of wells and enhancing pastoral activities (Antilopes Sahélo-Sahariennes 2011: 29, Newby 2013: 715, Noé Conservation 2013: 22, République du Niger 2009). The current habitat loss due to oil exploitation in particular and industrialisation in general was already foreseen by Heu, a member of the famous Mission Bérliet-Ténéré, who wrote in 1960: "The population growth and mechanisation open new routes and gradually reduce the natural sanctuaries. [...] Now that regular services of lorries cross the Tenere between Agadez and Bilma, the last places of refuge become less and less secure" (Heu 1960: 160).

Teda are in fact aware of the rapid decrease of addax and other animals of the area. They explain the threat of extinction by the Chinese petrol exploitation (poaching, disturbance by lights, noise and habitat fragmentation by tracks) as well as by former droughts. Mahaman Barkay Souleymane, a herder from Bilaberim, once told me: "Since the Chinese are here, they exterminated all animals by hunting: gazelles, addax. Towards the area of Agadem, we have had the addax [as numerous as] small ruminants. Now, there is nothing. All is finished. All is finished by hunting, since this petroleum company has established here."

14 When the latter hunted, they formed a group of about 20–40 people (whereas Teda often hunted alone) and chased an addax herd into nets where they killed them (Chapelle 1982: 195–206).

15 The species' decline is due "primarily to a murderous combination of the motor vehicle, the modern rifle and man's cupidity" (Newby 2013: 570, referring to his former work).

## Conservation, Entanglement and the Teda's Spatial Concept

The fact that human beings are causing the extinction of the fauna leads to claims that we have to conserve the latter by protection measures. Species "represent many thousands and often millions of years of activity and achievement. […] Every species, like every person, is unique, with its own history and destiny" (Staples and Cafaro 2012: 287). According to conservationists, humans have the duty to ensure the survival of species and not to accept the increasing dominance of human beings over "nature" when apologizing the Anthropocene: "The problem with embracing the Anthropocene is that it accepts an unacceptable status quo" (Cafaro 2013: 264). As Kolankiewicz (2012: 88) puts it, "our species is unique, because here and now only we have the ability to destroy, or to save, biodiversity." Such statements fuel the ongoing debate on the place of "nature" in the postmodern world. In fact, for more than one hundred years people, fascinated by "wilderness," have created conservation parks and confined a supposedly "pristine" nature to the latter (Cronon 1996). The current scientific discussion strives to overcome such a romantic notion of "wilderness." Nevertheless, there still is no consensus whether (and how) we should confine nature to conservation areas and human beings to the "rest of the world," or whether we should opt for more "hybrid" spaces which are supposed to better allow the entanglement of "nature" and "culture."

Cafaro claims that humans have to share the earth with other species and that such sharing "necessarily involves setting *limits* to human demands on nature" which limit "the degree to which real conservationists can accept the dominant trends of the Anthropocene" (Cafaro 2013: 262, also Caro et al. 2011). He advocates the expansion of parks and "reducing human numbers" in order to handle the threat to the environment that the Anthropocene presents. On the other hand, scholars like Kareiva et al. (2012), ask conservationists to "forge a more optimistic, human-friendly vision" of nature and accept that the latter "exists amid a wide variety of modern, human landscapes" (Kareiva and Marvier 2012:956). "Pristine nature" does not exist anymore and "conservation must occur within human altered landscapes" (ibid: 966).

Recognising the fact that "nature" over the whole world is imperatively embedded in human-altered landscapes and that it interacts with them leads to contemporary concepts of mutual entanglement. In this context, Lorimer may represent an extreme view, since for him "wildlife is discordant with multiple stable states" (2015: 7), and even microbes in us have to be considered as such. Hence, "wildlife" cannot be defined by the absence of people, as also Whatmore underlines: "The notion of wildlife being fleshed out here is a relational achievement spun between people and animals, plants and soils, documents and devices in heterogeneous social networks which are performed in and throughout multiple places and fluid ecologies" (2002: 14). Therefore, "nature" now happens in entangled landscapes which Marris calls a "half-wild rambunctious garden" and which no longer have anything to do with "our romantic notion of untrammelled wilderness" (Marris: 2011: 2). Such an entanglement of "nature" and human space has become a characteristic feature of the Anthropocene.

Let us now have a closer look on how the Teda represent "nature," in particular the conservation area but also other "wild" and "domestic" spaces. They have, in fact, two terms for the RNNTT. The first one is *kore*, which denominates the fence and, by extension, the kraal for sheep and goat (Le Cœur 1950: 132). One can find here the idea of a limit, even more, of a separating fence. But this limit is not primarily excluding somebody. The fact that Teda, living inside the area, are using this word shows that for them human presence and wildlife are not exclusive. Even more, the idea of a kraal may underline here the coexistence of wildlife and humans.

Such an idea of a peaceful coexistence is more explicitly expressed by the second term Teda use in order to denominate the reserve: *tohõ* or *tohõ bûyina weredi*. *Tohõ* denominates a kind of consensus, which Issouf Attoumane, a Teda of the Mada clan, explains by the following: "This word, this *tohõ*, is like a cooperative entente. It is as if one said that everybody agrees." *Bûyina* denominates wild animals and *weredi* means "to defend" or "protect" (Le Coeur 1950: 79, SIL 2011: 148). Thus, the conservation area is something that protects wild animals but where also exists a common entente between men and animals.[16]

16 According to my informants, *Weredi* also denominates a protection, a confined space to water ill animals, or a protective barrier in the case of war.

The last point becomes clearer if we consider that a kind of opposite of *tohõ* is *dahõ ŋgirennu.* This term literally means "head worriedness" ("no consensus," "doubt," "uncertainty"; SIL 2011: 25) and describes for example the opposition between the wild carnivore and the herder. "There is worriedness in the head of the herder as well in the carnivore which is afraid of him," as Issouf Attoumane explains. In order to better understand the context of this explanation, one should bear in mind that the conservation area not only protects antelopes and other "harmless" animals, but also different carnivore species. The number of the latter is even increasing, a fact that is not without causing problems to the pastoral Teda (Noé Conservation 2013). The latter, nevertheless, understand, as Issouf Attoumane explains, that a carnivore that feeds on domestic animals does so because the ecological equilibrium is disturbed, and that it becomes more and more difficult for a carnivore to feed on wild animals the number of which has considerably decreased and which are more and more retiring from the plains to hidden mountainous areas: "The jackal prefers the goat which is very close to the far antelope." *Tohõ* between men, domestic animals and carnivores means, in a very practical sense now promoted by local NGOs, that the killing of carnivores by strychnine has to be abandoned. Other methods of protecting livestock are thus more and more adopted. They are in particular preserving herds by kraals, by herding dogs and by nursing (and thus aggressive) donkey mares.

Teda can nomadise freely in the conservation area, the only exception being some valleys in the inner Termit. They are closed for human settlement, and it is forbidden to dig wells or to build a tent there. Nevertheless, domestic animals are allowed to pasture in these valleys.

*Tohõ* with its sense of a "conservation area" does not imply any statement about the degree of "wilderness" in it. In order to determine spaces that are more or less confined to humans, Teda use the second concept. The latter does not emphasise the classical "Western" dichotomy between "nature and culture," but describes a space that gradually becomes more or less human according to its distance to places where human beings live.[17]

17 Note that we can find parallel concepts in other nomadic civilisations. Casajus (1987: 80–112), for example, describes pastoral spaces among the Tuareg Kel-Ferwan by the associations of different social spaces with different kinds of livestock. Schareika (2003: 91–123) discusses spatial orders and temporal dimensions in the context of Wodaabe mobility.

First, *nûmuy* designates a place inhabited by people where their houses can be found. Up to 10–15 km around such a camp, there is *dôge*, which designates the transhumance area in which domestic animals are grazing (and where they can return the same day to *nûmuy*) but also, by extension, these animals themselves. *Dôge* "belongs" to a household and a herder can forbid others to settle in his *dôge.* Around a *dôge*, there are other *dôge* of other families.[18] All are included in *wana*, the "bush." "Go into the bush" (*wana tede*) means to nomadise. *Wana* is, theoretically, "habitable" by human beings, whereas *awe*[19] finally means the desert, a hostile and empty place. A traveler can cross *awe*, and addax even lives in it, particularly during the cold season.

The Teda's concepts of space, which consider human beings as an inherent part of what we may call "nature," also allow their integration into conservation measures. Local NGOs of the RNNTT (which has been established in its current form only after a participatory approach consulting local populations during workshops), build their work on such "community conservation" (Kareiva and Marvier 2012: 966, Namara 2006: 39, Price et al. 2002) and closely work together with locals. The latter are recruited as rangers (*écoguardes*), and local groups and chiefs are actively contributing to securing the area, giving information about addax sightings or even catching poachers. NGOs, on the other hand, support for example projects of school building and the drilling of wells (Antilopes Sahélo-Sahariennes 2012, Noé Conservation 2013).

Teda's concepts concerning the conservation area and pastoral space show that there is no clear limit between "nature" and "human." The concepts of *kore* (kraal) and *tohõ* (consensus) underline that both, humans and (wild) animals, are together. The terms from *dôge* to *awe* show that space can be more or less attributed to human beings, but nowhere exists exclusively "nature" or exclusively "human". "Nature" is present everywhere, and this is why the Teda's perception of it may differ from a classical "Western," one which has misplaced nature: "We have hidden nature from ourselves. Our mistake is thinking that nature is something 'out there,' far away" (Marris 2011: 1). Cronon,

18 My informants did not make Le Coeur's (1950: 150) distinction between *nome*, designating villages and fixed houses, and *fage*, designating camps and mobile villages. They used *nûmuy* in a nomadic context.

19 A space called *tenere* by the Tuareg.

in this context, even speaks about a paradox: In a dualistic vision of nature where the latter is believed to be "true" and "wild," human presence here "represents its fall. The place where we are is the place where nature is not" (Cronon 1996: 17).

## Concluding Remarks and the Addax' Point of View

Above, I outlined a local Anthropocene that can have globally diachronic starting dates. Such an age dominated by humans may have two main features: The loss of biodiversity, in particular the megafauna extinction, and, as a consequence, the attempts of humans to conserve nature and confine it to parks. The Teda's concept of space does not need such an imposed delimitation between the areas of animals and those of humans. Instead of separating the "human" from the "natural," it only gradually becomes more and more "foreign" to *dôge*, the home.[20]

When discussing the entanglement of "natural" and "human" spaces, the term "hybridity" is increasingly used. Can we call the Teda's space a "hybrid" one? I would say no. The term hybridity appeals to a mixture of what "normally" is not mixed. The Teda's space, to the contrary, does not presuppose a strict delimitation between "culture" and "nature." Thus, where should hybridity take place when there is nothing to hybridise?

Not least, when promoting such hybrid spaces, one has to stay realistic and take into account something like the "addax' point of view." In fact, it is not sure at all that the antelope appreciates hybrid spaces – as described above, the addax is trying to avoid human presence wherever possible. These antelopes are, in fact, not Lorimer's microbes living inside or close to the human body, but on the contrary, extremely shy animals that are endangered by human action. Hybridising the addax' living places not only with human transhumance areas and trading routes, but also with Chinese oil exploitations and the "territories" of hunters and poachers will ultimately lead to a complete disappearance of the antelope.

20 The motion from home to the "foreign", as described for the Teda, but in the other way round, is taken by the addax. The latter is in fact seeking for spaces where men are absent, and can be found in what humans call *awe*, the "desert". Only in the hot season, when the latter becomes too hostile, addax come nearer to men's *dôge*.

Thus, the trial of "setting limits to human demands on nature" (Cafaro 2013: 262) could concede to the addax a space where it can also exist in the future. Addax are seemingly developing better in places far away from humans, and hybrid spaces perhaps grow easier in the rambunctious gardens of Western urban anthropology than in the ethnographic African field.

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