

# *What is Syntropic Farming?*

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## *Principles, techniques, and Philosophy*

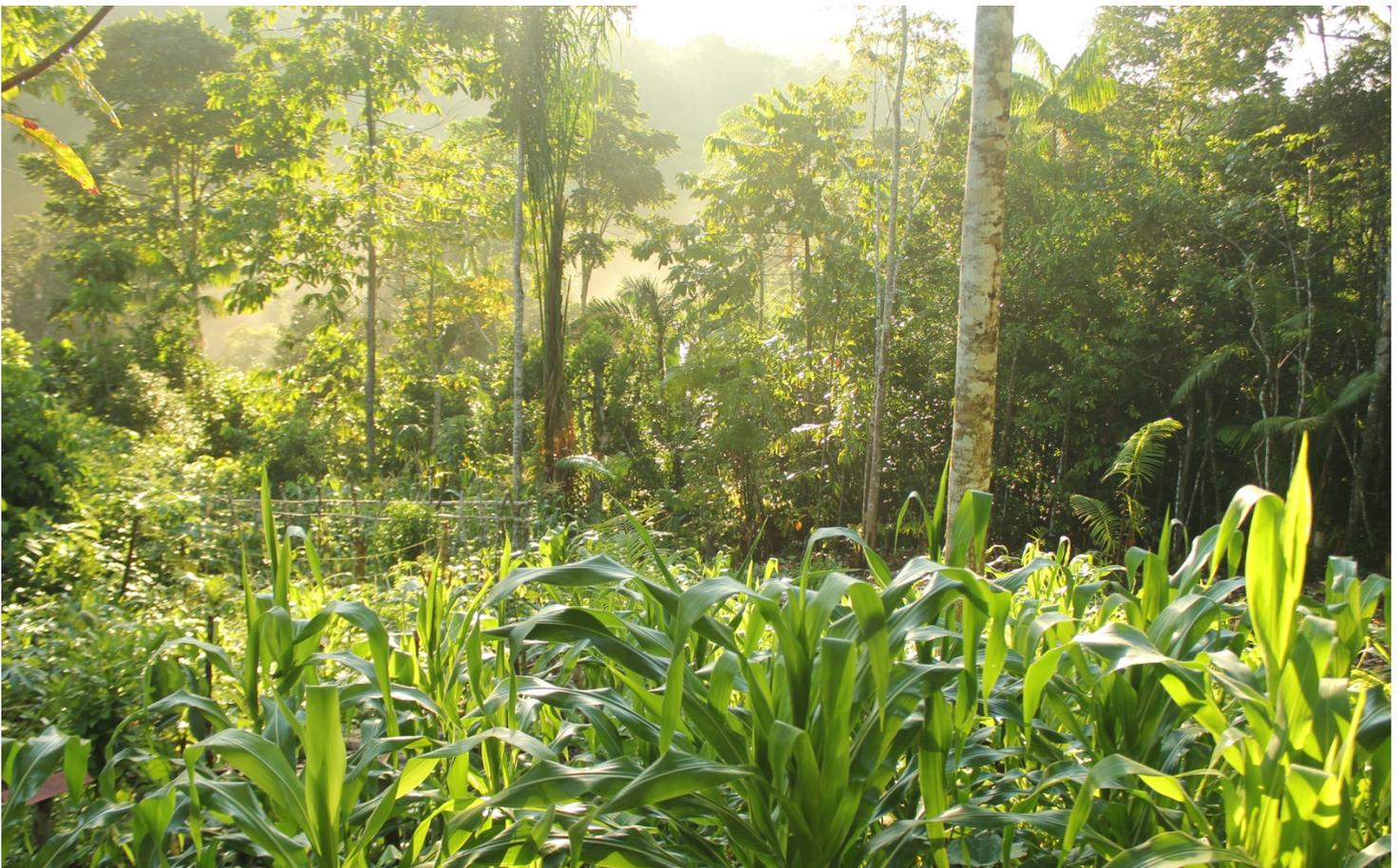
This document is intended to allow the reader a short insight into the principles and techniques, which define a Syntropic Agriculture. To begin, the founder of this agricultural approach, Ernst Götsch, states that he himself has not 'invented' any of the in this document stated principles. As will become evident to the reader all stems from a deep understanding of nature, and therewith from nature. Götsch *solely* had the insight, which allowed him to apply the following in practice, test it, in order to refine his understanding of it, to note it down in written format, or share it verbally, and lastly form it into a revolutionary concept to practice agriculture.

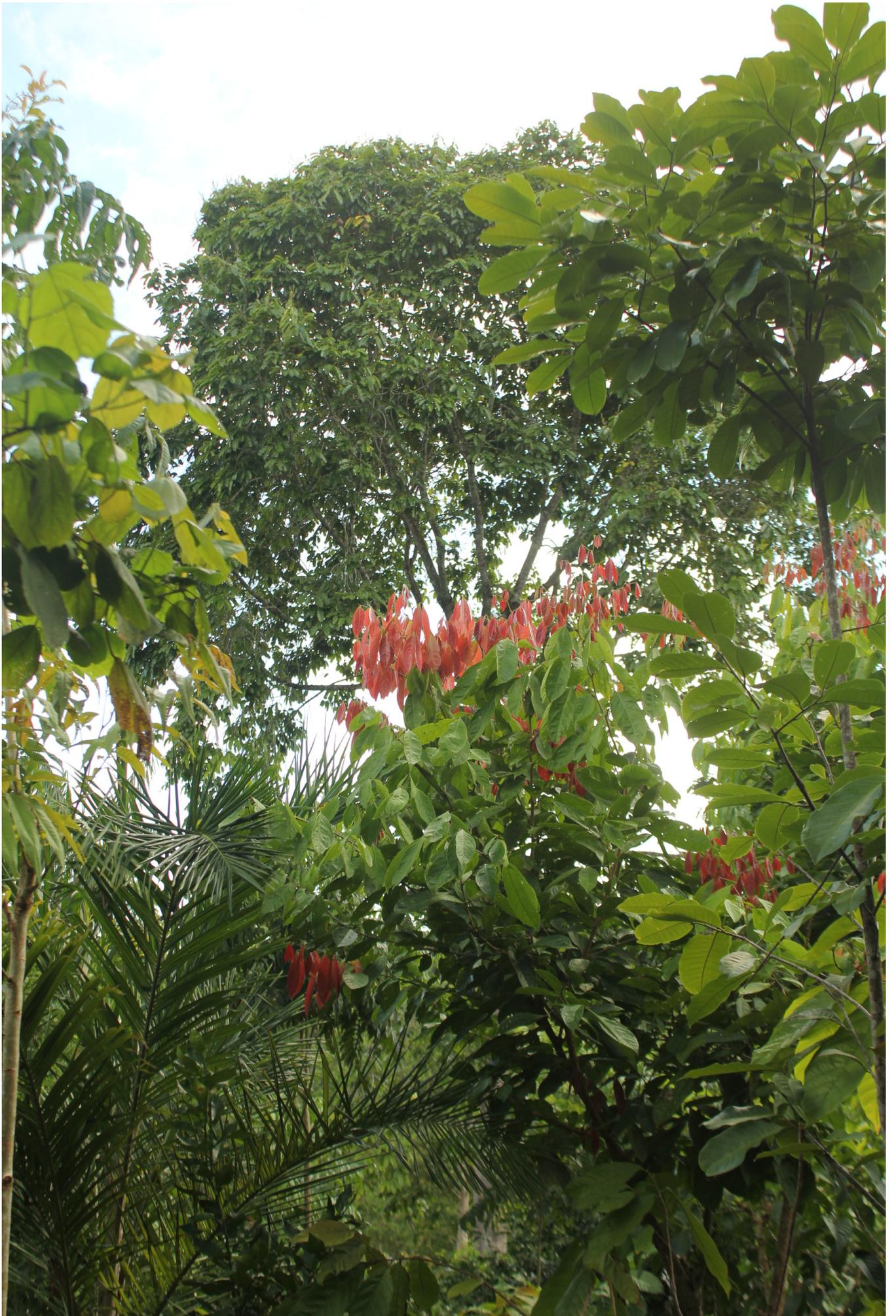
His farm in Bahia, Brazil, is one of the most significant reference sights for this type of agriculture. Here he achieves the triple of the average cacao production (stemming from conventional agriculture, which includes herbicides, insecticides, fungicides, and chemical fertilizer), without the addition of any compost, manure, fertilizer, or 'plant protection product'. Nowadays, 35 years after he began cultivating this farm, his plantations count as one of the most healthy and biodiverse sections of the Atlantic Rainforest (which is an ecosystem that stretches along the entire east coast of Brazil, and far in land, having once covered ~1,300,000 km<sup>2</sup>). At the time when Götsch bought this farm, of roughly 500 hectares, it was known as the weakest and most degraded piece of land within the large region. The previous tenant owned a sawmill and felled nearly all of the primary forests in order to extract any valuable timbers. Following cycles of cassava cultivation and livestock creation, in association with periodic burnings, brought the sensitive tropical soil completely out of balance. The farm was renamed from 'Fazenda Olhos d'Água' (Farm Eyes of Water / Farm where the Water is Born) to 'Fazenda Fugidos da Terra Seca' (Farm of the Refugees of the Dry Land).

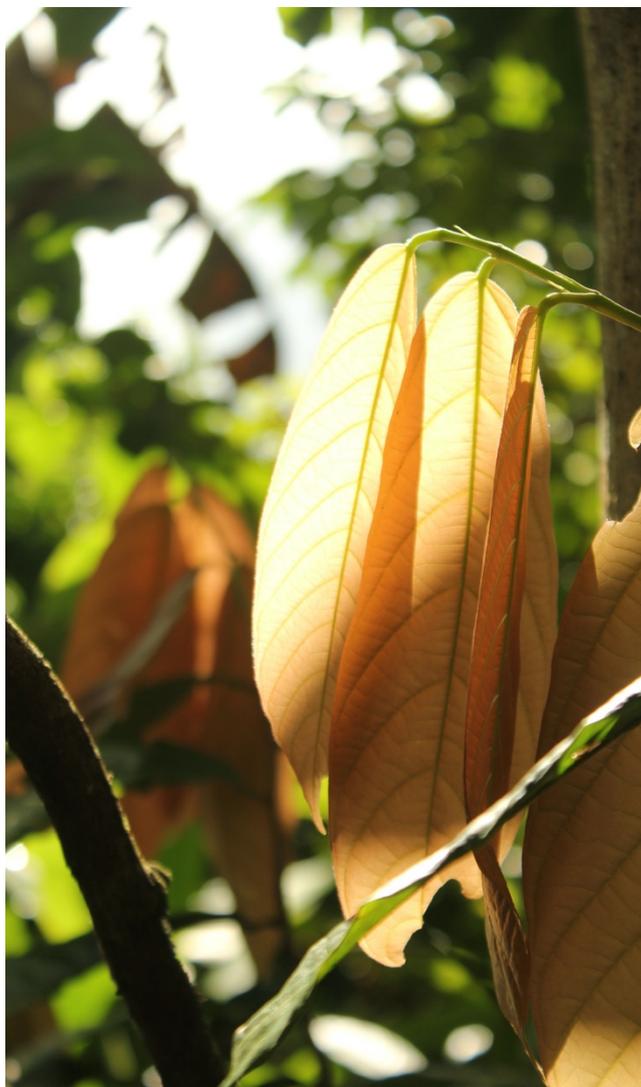
An agricultural production was under the back then present conditions completely unimaginable, which was confirmed by the CEPLAC (a local research institute for cacao cultivation). According to a scale which was used by this institute to rate the potential of a soil to produce cacao, his soils were rated on the lowest rank, which meant that the cacao production would, even with heavy fertilization, remain unprofitable. Götsch's vision and goal was to restore the *natural capacity of production* by employing natural processes. This means without fertilizers, no irrigation, but only by cooperating with plants adapted to the conditions of the sight. His work paid off, and the results speak for themselves. Fourteen of the seventeen water springs that had laid dry at the beginning of his activities, nowadays flow the whole year around again. The farm has its own water cycle, meaning it produces a part of the rain that falls on the land.

Following, a few photographs of the forests planted by Götsch in 1984 (~500ha). Every on tree visible on the horizon was planted by him.









After this short introduction, and photographic visualization, we will now move towards the main body of this text, which is structured into bullet points which build up the account of the principles of Syntropic farming. Obviously, many of these statements are based on the texts and teachings of Ernst Götsch, which I have, for the purpose of this document, joined together from various sources and afterwards partially reformulated and put into an order that suits the context of this document.

- Syntropic Agriculture is a form of agriculture, which solely bases on principles, instead of readily repeatable recipes. These principles are based on the principles by which nature and forest eco-systems function.
  - Syntropy is the tendency of a closed system to structure and organize itself, and to complexify itself from itself. This is the opposing variable to entropy. The processes occur in nature within rhythmic correspondence on various planes, and therefore determine, for example, the life- and respiration cycles of various organisms (f.e. breathing in and out, or birth and death).
  - Life is one of the tools that the Planet-Earth, which is to be seen as a Macro-Organism, inside of which everything is connected and interdependent, has created for itself to realize its syntropic strategy of being.
  - All species that exist, as well as all species that are yet to appear, or which have already disappeared, appear/did appear in order to fulfill (a) specific function(s) endowed to them.
    - In the construction of our Agro-ecosystems - that is to say agri- and silvicultural plantations that act as a completely functioning ecosystem - all to be respected species are planted, organized, and pruned according to their elemental functions, their lifecycle, and the context which they occupy, within space and time, to other species.
    - The plantations are often highly biodiverse, even though their success, in reality, only depends on the introduction of species adapted to the current conditions of the site, which have the capacity to grow their vigorously, react well to pruning, and therefore become the key elements to trigger transformative processes of which we can make use to drastically change the qualities of the soil and give exigent plants conditions to establish a fruitful existence where otherwise they could not.
  - Two concepts which are strongly made use of here are the natural succession of species and the stratification of forests;

- In togetherness, plant groups create macro-organisms, which could be looked as cells, inside of which every plant/plant species has a specific function and is needed in the correct quantitative and spacial proportion to the others. Within these plant groups exist short- and long-lived species, and everything that lies in between. During the first phases, short lived plants 'dominate' the space of the sight (all the same the long-lived plants are crucial for their healthy development). Through their metabolism, they begin to cause changes within the micro-climate of the site, in the qualities of the soil (structure, water holding capacity, temperature, availability of nutrients, etc.), and resultingly the conditions for life to develop on that spot. As the dominant role of one lifecycle passes on to the next, in which each dominant group of vegetation gives the necessary living- and establishment conditions for the next, the natural succession of species unfolds. Observing these developments, the natural succession of species could more sharply be described as the *medium through which life moves through time and space*. This process is supported and catalyzed through targeted management services, in which pruning plays an important role. This is one of the processes of which use is made to create highly productive plantations.
- Forest stratification is to be understood as the structural properties a forest possesses, which is a result of the spacial context in which various species grow to one another. Different species have different necessities in terms of light (some preferring direct sunlight, others preferring filtered light) and fill various ecological niches. Through this structure, in which various plants grow under, above, and next to each other, the ecosystem achieves a much higher percentage of soil covered by photosynthetically active foliage. The capacity of gas and water exchange/cycling is greatly increased. A part of the study of Syntropic farming is based on the categorization of the various species and their stratus which they occupy. Additionally important, as Victor Schauburger described, is that sunlight is now filtered by various layers of foliage, each one specialized to a certain range of wavelengths, meaning that the soil, and the life which lends the soil its fertility, as well as the in it circulating water, are protected.

- Another unique feature in Syntropic farming is the technically correct pruning of plants. The plantation, seen as a macro-organism, is first studied and afterwards all present species are pruned so that all co-established plants are in the correct spacial context to each other, while still maintaining their original crown shape, which is just proportionally reduced, meaning the plant is also placed into correct context to itself. Effects of this practice are:
  - The harmonization of the relationships which all co-established individuals have to one-another;
  - A shift within the hormonal balance within the plant, which now begin to circulate growth inducing hormones in heightened quantities. This has the result that the individual plants begin to re-sprout with an accelerated cell division and photosynthetic rate. In order to support their heightened velocity of growth they also begin to search for, favor, and aliment those soil micro-organisms which mobilize nutrients into plant available form and bind water from the air. This effect, which is observable within individual plants, will now take place within the plantation as a whole, as all established species are interconnected through a network of soil micro-organisms and the plantation was treated as one whole. Growth hormones are exchanged between plants and the soil micro-biology receives a big boost within the site as a whole. The plantation is herewith rejuvenated, and begin to sprout with proliferous vigor, making themselves ready to flower and set fruits;
  - The fortification of the dynamics which exist between the vegetation of various lifecycles occurring in the natural succession of species. This brings with it a catalyzation of the natural succession of species and therewith the regeneration of the eco-system;
  - Side product of this work is a generous gift of organic material (leaves, branches, and trunks) which are neatly organized to cover and protect the soil. Through the work of soil micro-organism, the organic material is subjected to transformative processes, which set nutrients and fermentation substances free.
    - Obtaining organic material is never, in Syntropic Farming, core goal of a pruning intervention.

*It is the goal to create agro-ecosystems which mimic the natural and original ecosystem of the site in their structure, function, and dynamic.*

- Through the application of these principles our agriculture is transformed into an activity which is 'useful' and beneficial towards the established life on earth. In plantations that are managed according to these principles the living conditions for all who participate in, or are affected by, our intervention improve constantly. The quality and quantity of consolidated life grows with every interaction that we have with the agro-ecosystem. Finally, a natural capacity for production is reestablished. Almost most importantly, the conditions for a complete water cycle, creating and maintaining being, as well as IN-FORMATION carrier, to take place are given again (Viktor Schauburger).
  - Natural temperature differences, by which the complete water cycle takes place, are reestablished. This is conditioned by the form in which these plantations are stratified, with the photosynthesis occurring most intensively towards the floor of the plantation and enhanced by the high photosynthetic rate that the regularly pruned and rejuvenated plantations produce, and further supported by the intact and decomposing organic material covering the soil.
- Furthermore, these plantations, as previously touched upon, are capable to mobilize, bind, transform, and recycle their own nutrients; that means are capable to uphold an entire nutrient cycle. The same counts for the high capacity to cycle water.
  - Result is that these plantations are almost completely independent of externally sourced inputs, and, if even, have only a very little, constantly decreasing, necessity of water by means of irrigation.
- Plants which make part of these plantation are all highly vigorous, productive, and radiate health. They are not subject to 'pests and diseases'.

Those that are able to follow the herewith described path, and put the indicated into practice, in their daily life, will come to conclude, that the **Paradise on Earth is not lost**. It is only the individual, who through his misconceptions of the living, that has closed the doors to his inner paradise, his own inner bliss, who can now no longer see the paradise that surrounds him and even '**has to**' go on to destroy it. The agricultural approach described in this document does not only promise a future to us humans, because it functions in **actual** harmony with nature to achieve high and scalable production, but because it returns a useful and beneficial role, in regards to the eco-system, and macro-organism planet earth as a whole, to the human who practices it. Humans as an agent to optimize life processes. From the day on that our agriculture, as well as the ethical framework that defines our inter- and intraspecific relations, we will be able to forget 'areas of natural protection'. From that day on, we will only construct 'areas of permanent inclusion' and feel ourselves returned into the welcoming and nursing hands of our mother, the Earth.

*Once these steps are done the doors of the paradise on earth will open themselves towards us again, because in reality we were never expelled from it, and it was never taken or locked away from us, but it was us ourselves that left and destroyed it.*