»In Vitro Typewriter« consists of an old mechanical typewriter which is connected to two large agar plates. On those plates, microorganism colonies grow in relation to human handprints that have been pressed onto the culture medium of the plates before. The morphological and growth-dependent properties of the developing microorganisms control a text-recombination algorithm that mutates and dissociates text fragments out of historic scientific texts. Those texts mostly discuss evolutionary biology and the principle of natural selection in special, respectively. The whole process results in a multitude of visual fragmentary text compositions being written on paper by the typewriter.
Originally, the installation »In Vitro Typewriter« is based on a hypothesis by the Czech-born interdisciplinary thinker and media philosopher Vilém Flusser: »If memory is defined simply as information storage, then we find memories all over nature. They float like islands within the general stream toward entropy, islands that preserve information for a time before they dissolve. [...] The Second Principle of Thermodynamics states that information contained within nature tends to be forgotten.« (Flusser: On Memory (Electronic or Otherwise), 1990) Thus, all information stored in the universe at a specific time must return into the general stream of entropy.

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During three days of incubation at room temperature, different overgrowth-patterns emerge inside the inoculated agar culture media. In addition, these developing bacterial and fungal cultures are being recorded with a camera and therefore processed in realtime. The specific signals which are based on the microorganisms’ different growth-rates and morphological properties lead to the algorithmic recombination of the native text sources. Every processed character is translated into an integer which again is related to a spring-return solenoid (0 to 31). This is provided by using a cascaded shift register circuit. Its final result is made up of a specific key's triggering on the typewriter in each case. Therefore, endless recombination and transformation of the single text fragments develop together into a composition based on the proliferating traces that were left behind.

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»Our species transmits acquired and inherited information from generation to generation. This doubly contradicts nature. The Second Principle of Thermodynamics states that information contained within nature tends to be forgotten. Living organisms contradict that principle by preserving and transmitting genetic information. They constitute a memory in defiance of the entropy of nature. Mendel’s biological law states that acquired information cannot be transmitted from organism to organism. Our species contradicts that law by having an elaborate cultural memory, progressively storing acquired information to which successive generations have access. This double negation of nature, although only temporary, constitutes the human condition.«

The environment that surrounds us is teeming with an incredible variety of micro-organisms. As our ability to view and investigate this minuscule world develops, we are becoming increasingly aware of the importance of these organisms and the contribution they make to the circumstances in which we exist. Their microbial domain presents us with notions of form, organisation, material and composition bearing considerable relevance to the environment we inhabit. The manner in which these micro-organisms colonise their environment, how they communicate, organise and negotiate their territory, along with the mechanisms and purpose they employ, provide metaphorical parallels with human colonisation. Valuable lessons regarding symbiotic relations and sustainable systems can be drawn, while touching on morally sensitive issues of growth manipulation and behaviour control.
