Chapter 12. A “computer for molecules”

The “wild transfer” finally unmasked and defeated?

Early July 1995, J. Benveniste thought that he had understood the reasons of the troublesome inversions of results. In a letter to the “participants in the experiments of transmission”, he explained what he thought to be the cause of the “wild transfer”:

> “Here is the end of three years of hell and in addition an important advance in the field of electromagnetic transmission and the certainty to succeed now to achieve our experiments within the next weeks.
>
> As you know, what has been stopping us for three years is that the effect, which we are able to detect after transmission, is often attributed, after opening of the codes, to naive water or Tr *[transmitted]* water (water having received information “water”). Yet, in several open-label experiments, water induced no effect to the isolated heart, what is normal because it is the same water which already infuses heart. Recently, by using an anticholinergic, atropine, we were able to show that these “wild transfers” were indeed acetylcholine-Tr. To explain this extraordinary phenomenon, we proposed many causes among which the transport in car, the effect of light, the non-specific magnetic fields, etc. We did not imagine that this “wild” transfer could appear *just at the moment of injection*. It occurs indeed between the two syringes placed side by side which are intended to be injected into an isolated heart and which stay on the electric injector sometimes more than half an hour when two successive injections are made. This “wild” transfer occurs when one of the syringes contains water and the other one water having received active information (ovalbumin, acetylcholine). From this point, everything gets clearer: these transfers rarely arise in open-label experiments or in internal blinding where we use either a single heart, or tubes in the same order on both hearts. It is during “extraordinary” precautions, in particular for the outside experiments that we cross the injections (1, 2, 3, 4, 5 for a heart and 5, 4, 3, 2, 1 for the other one).” [1]

He then explained which experiments allowed confirming this idea:

> "Two decisive experiments recently took place demonstrating this phenomenon: 1) When a syringe, for example n°9, gave a considerable effect on the heart after extended contact with another syringe (n°11) that contained the active transfer, then the corresponding tube n°9, left on the lab bench and injected directly, had no effect (experiment of 5/7). There is therefore a property that has been acquired at the time of contact with the other syringe. 2) We voluntarily placed naive water during 30 minutes in a syringe next to a syringe containing a transferred activity: naive water then demonstrated a very strong acetylcholine-type activity (experiment of 6/7). Naturally this phenomenon cannot arise in the "normal" experimental conditions where one immediately tests a transfer after having made it."

Then J. Benveniste explained that this activity "passively" transferred (by opposition to "active" transfer by the amplifier) is indeed an acetylcholine-type activity because atropine inhibited its effect on the heart. Then he added: "we ignore the origin of the passive transfer, the metallic mass or the electromagnetic fields of the machine".

Even if this explanation seemed to be confirmed by an experiment – like the previous ones – it nevertheless appeared to be *post hoc*. Furthermore, hardly expressed, the interpretation of the anomalies by "exchanges" between syringes risked to become rapidly obsolete because J. Benveniste had just made a new technological improvement by jumping from the "telephone for molecules" to the "computer for molecules".

The early days of "digital biology"

Indeed, because the current in the output coil reproduced after amplification the current of the input coil, moreover in a frequency range close to those of the human ear, it was logical in wanting to record the electromagnetic variations of the input coil as one would make for a conversation or a song. This recording could be then returned to the output coil which would "imprint" water in a tube (Figure 12.1). The interest would be to store diverse recordings that could be "played" as needed.

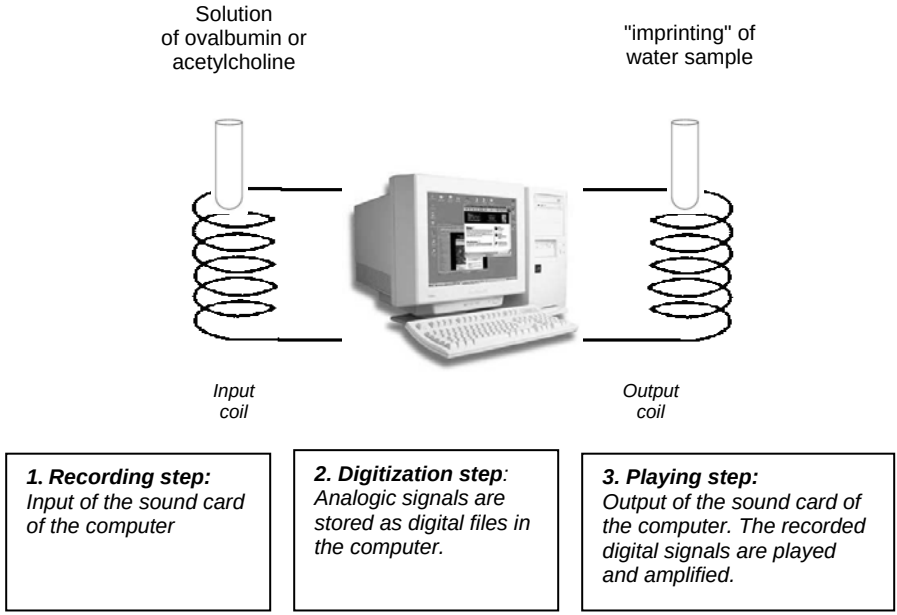

Figure 12.1. Compare this new version of the transmission device with the first version (Figure 1.1 of Chapter 1 of second part). In this new "digital" version, the input coil was wired to the sound card of a computer and the "signals" were recorded as digital files. These recordings were then "played" after amplification and "imprinted" to naive water placed near the output coil thanks to the electromagnetic field generated by the coil. The essential contribution of this new prototype was the possibility of "storing" information in a magnetic device.

J. Benveniste told how he succeeded in developing this device:

> "[…] I found out that Austrian researchers working in the field of homeopathy managed, in association with a firm of electronics, to record the electromagnetic properties of thyroxine (an hormone secreted by the thyroid gland which has an essential role in growth) on a CD. Afterward, by "playing" this recording on tadpoles, these researchers managed to modify the course of their metamorphosis. Their system had the merit to demonstrate the possible digitization of the electromagnetic signals emitted by molecules in the range of radio frequencies. Moreover, there is nothing inconceivable for someone with an open mind: the sound waves perceived by human ear, which are situated in the same

> frequency ranges, are usually digitized and recorded on commercial CD." [2]

I. Béhar spoke about the reaction of J. Benveniste when he learnt that he had been outstripped by the Austrian team:

> "Benveniste was not the first one in "to record" an "activity" on hard disk; I was in his laboratory when he received by fax the summary of the communication that Austrian researchers planned to present to Faseb 95 entitled: "Hormone effects by CD record/replay" [3]. Benveniste was furious of having thus been "overtaken", regretting not having had the means to successfully complete this research." [4]

The interest of this method compared with the former one is obvious. One could hope in particular that the problems of "inversion of activities" which were supposed to occur during the transport of the "imprinted" tubes would not take place any more. Indeed, when the biological activity is "recorded" on a floppy disk or hard disk, it cannot be modified. One can at will "transmit" to naive water an activity which was "canned". J. Benveniste already imagined the possible developments: recording biological activities of molecules and medicines on a magnetic memory and broadcasting them easily across the world. Moreover Internet was available to the general public for hardly one year and the possibilities offered by the "network of networks" began to appear. As soon as information was digitized, its almost immediate routing was child's play and the immense possibilities offered by the combination of the "digitization of the biological signal" and this new means of communication made him dream.

"For the first time in History"

During the summer of 1995, J. Benveniste bought a computer with a sound card and he could then consider making the first experiment of "digitization-transmission". This experiment was performed on July 10th and a significant biological effect was observed on the coronary flow (Figure 12.2). This effect was inhibited by atropine, thus showing the specificity of the biological activity which was "recorded" and then "reproduced" to water.

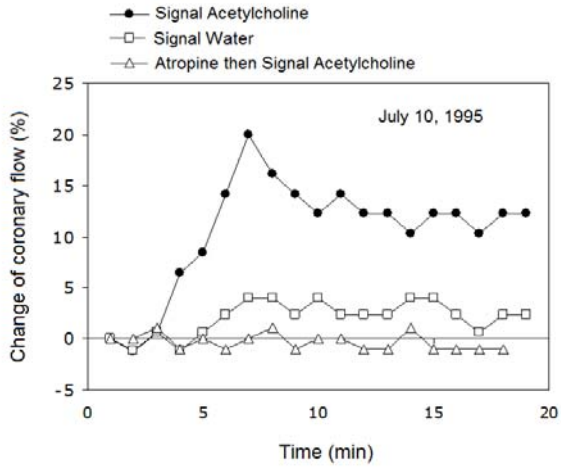

Figure 12.2. This figure shows the first attempt of "digitization-transmission" of a biological activity by J. Benveniste, an "historical" first according to him. The device described in the previous figure allowed to record two computer files which respectively corresponded to acetylcholine and to water (inactive control). We notice that the "signal acetylcholine" had actually an effect on the coronary flow but that the control "signal water" remained without effect. The specificity of the "signal acetylcholine" was highlighted by atropine (at "classic" concentration), an antagonist of acetylcholine that inhibited the effect of the signal. It is important to understand that the only difference between the curves corresponding to "signal acetylcholine" and "signal water" rested *a priori* on the "noise" recorded with an electric coil near a solution of acetylcholine or water only.

Similar experiments were performed during the next days with comparable results. No without some bombast, once again evoking History with a big H, J. Benveniste announced in this terms this new technological breakthrough (forgetting incidentallly the contribution of the Austrian researchers) in the bulletin of the association *Science Innovante* that supported his researches:

> "For the first time in History, on July 10th, 1995, we recorded a biological activity on a computer. […] When one transmits this recording to water and when this water is applied to a sensitive organ, the latter reacts as if it had received the molecule itself. This will not surprise our readers who know that molecules communicate by electromagnetic frequencies. The new element is that we know now that these frequencies are between 0 and 22 kHz. On the other hand, the fact that they are digitized opens immense scientific and industrial perspectives in chemistry, biology and medicine." [5]

From this moment, J. Benveniste gave up the devices of transmission from tube to tube by means of an electronic amplifier. He wholeheartedly launched into what he named then "digital biology". Thanks to this device, a new energy was given to his researches and public demonstrations were again possible. The hope was naturally that the "inversions of codes" and other "wild transfers" would be forgotten and considered as trials and errors inherent to any development. The "biological activity" being now frozen in the bits of a computer memory, one could only hope that this "memory" would be much more reliable than an "imprint" in water samples.

Notes of end of chapter

[1] Letter of J. Benveniste "to the participants in transmission experiments of July 10th, 1995".

[2] J. Benveniste. Ma vérité sur la mémoire de l'eau, p. 173.

[3] The reference of this scientific communication was: "F. Senekowitsch, P.C. Endler, W. Pongratz, C.W. Smith. Hormone effects by CD record/replay. *FASEB J* 1995 ; 9 : A392."

[4] I. Béhar. Distinguer l'homme du résultat scientifique. *Le Monde*, February 8th, 1997.

[5] La lettre de Science Innovante. N°6, April 1996.