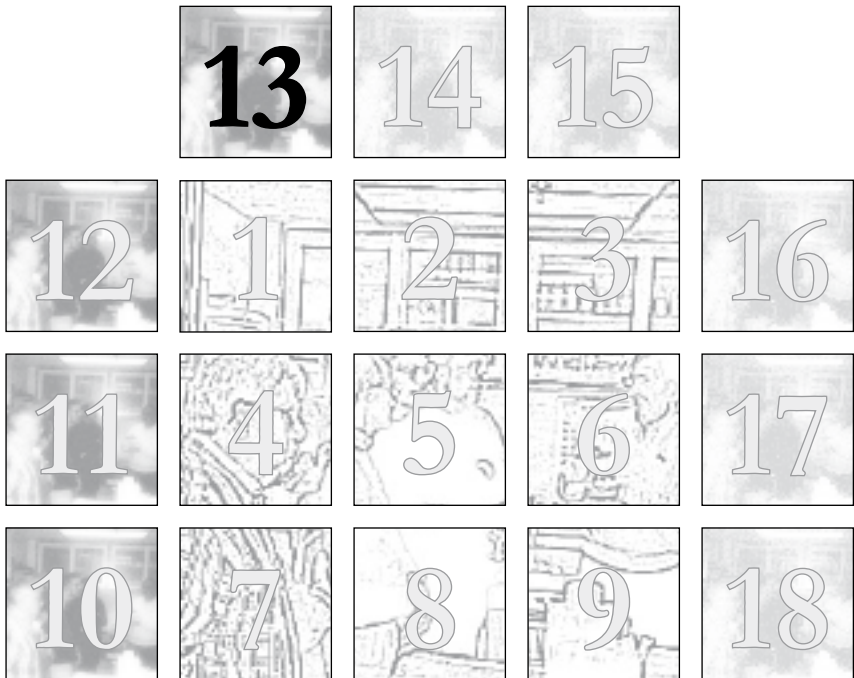


13	The End of the Biological Computer Laboratory Albert Müller
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13.1 Introduction

In an earlier contribution to the history of the BCL, originally written in German (Müller 2000), and now included in this volume again in an English version, I have tried to analyze the end of the BCL. This article was printed when Heinz von Foerster was still alive, and I think he agreed with my account. Nevertheless, the end of the BCL has remained sort of a mystery for me since it was – and there is much consensus about this now – a research unit which undertook path-breaking work. Heinz von Foerster who loved to tell stories and anecdotes about the BCL and the people who worked there, remained vague somehow when answering questions about the end of the BCL. He did not seem to hide anything, but his memories of the situation apparently were blurred. He was not able to analyze the situation exactly and he tended to blame himself as someone who was unable to prevent the dissolution of the laboratory. He regarded it as a kind of personal failure that he was not able to raise research funds anymore. Therefore he took the occasion of his 65th birthday to retire. The BCL was closed at the same time, also because a successor was not available.

This account is not wrong but it needs to be expanded and revised. Years ago Stuart Umpleby drew our attention to the significance of the political framework of the early seventies for the research landscape in the United States. In an interview Umpleby underlined the role of the Mansfield amendment, which was supposed to control military expenses for research. Politically directed against the unlimited involvement of the US in the Vietnam war, the Mansfield Amendment had the paradoxical effect that projects focussing on basic research and not on war-oriented research lost their financial support. In the meantime Umpleby (2003) further discussed the whole matter in a separate article.

Besides changes in the political and legal frameworks, institutional change played an important role. Ernst von Glasersfeld mentioned the shock, which followed the replacements in the staff of the Air Force Office of Scientific Research (AFOSR) which funded highly innovative research at several universities and research institutions in the USA and even in Europe. Over night and for many of the involved scientists completely unexpectedly the most important officers of the directorate of Information Sciences were disempowered: Harold Wooster and Rowena Swanson. Rowena Swanson had special relationships to several scientists in the radius of the BCL. When she lost her position she was working on creating a new centre for cognitive sciences at the University of Georgia, in which the BCL group should participate. Glasersfeld who worked at

the University of Georgia then described the surprisingly change in staff in the following way:

sowohl Rowena als auch ihr Kollege Harold Wooster waren Zivilisten in diesem *Airforce* Büro. Das war eigentlich der Hauptgrund, weswegen sie herausgedrückt wurden. Das Büro wurde aufgelassen. Das war schlimm, denn unser Kontrakt hörte im Dezember 1969 auf. Sie riefen mich an und sagen mir: „Du musst nach Washington kommen, wir wollen deinen Kontrakt erneuern, du bekommst mehr Geld, du kannst mindestens noch eine weitere Person anstellen und es geht alles wunderbar.“ [...] Als ich [aus meinem Urlaub] zurückkam – das vergesse ich nie! – am 6. Januar, bekomme ich ein *Telegramm* aus Washington. Die hatten noch *nie* ein Telegramm geschickt, es gab Briefe oder Telefonate, aber nie ein Telegramm. Das Telegramm war sehr lakonisch: ab Dezember des vergangenen Jahres haben sie kein Geld. Keine Verlängerung und nichts. Wie gesagt, da war ich und drei andere Leute, die angestellt waren, und das war sehr peinlich, denn wir wussten nicht, was machen. (Glaserfeld 2005, p.52f)

Translation: Rowena and her colleague Harold Wooster as well were civilians within this Airforce office. This was the main reason why they forced out. The office was closed. This was bad, because our contract ended in December 1969. They called and said to me: “You have to come to Washington, we would like to renew your contract, you will get more money, you will be able to employ at least one more person, and everything is wonderful”. [...] When I got back [from my vacation] – I will never forget – on the 6th of January I received a telegram from Washington. They had never sent a telegram, there were letters and phone calls but never a telegram. The telegram was very laconic: from December last year they had no money. No renewal and nothing. As I have told you, there was I and there were three other people employed, and it was very embarrassing, because we did not know what to do.

There is good reason to argue that displacement of Wooster and Swanson had dramatic consequences for the BCL as well. It had an immediate impact on the projects of Gottha, for instance, whose activities were funded by the AFOSR. (See the list of projects in Müller, this volume)

The end of the BCL must be seen as a process starting in 1970. To illustrate and to describe this process we can use the exchange of letters between the families of Heinz and Mai von Foerster and Gotthard and Mieke Günther. This also demonstrates what steps were taken in the BCL to cope with the precarious situation, to develop new projects, although their relevance and the significance were not recognized at the time.

13.2 The Emergence of a Process of Crisis in the Mirror of Letters

The basic organisation of the BCL has already been described (Müller 2000). The BCL as a research unit was part of the Department of Electrical Engineering of the University of Illinois in Urbana. The relative autonomy and independence of the laboratory unit was based on the massive external research funds. The university and the department, respectively, covered only a fraction of the costs. So, for instance, the costs for a secretary had to be financed with research money. It might be said that because of its trans-disciplinary research orientation the BCL had been a foreign body within the Department of Electrical Engineering from the beginning. The outstanding position of the BCL manifested itself more and more with the changes – and radicalization – of research interests of its members.

Gotthard Günther (1900–1984) was incorporated in the BCL in September 1961 on the basis of a recommendation of Warren McCulloch. Soon personal and permanent friendships evolved between the Foerster and Günther families, not only because of the common German-speaking background, but also because of the deep interest Heinz von Foerster had for Günther's work on trans-classical logic. Günther who was an émigré from the Nazi-state and received acknowledgement for his work only late worked with great intensity on his themes until his death. Since 1970 when research funds for his work ran out at the BCL he had to turn the focus of his activities more and more to Germany. Especially at the University of Hamburg he gave lectures and seminars regularly. Nevertheless he would have liked to return to the BCL, and even uttered this wish several times. The geographical distance of the two couples did not break down regular contact. At Christmas or on birthdays letters were exchanged, and the exchange of scientific papers was another reason to communicate by letters. The wives of the two scientists were involved in this correspondence, too. Parts of the exchange of ideas have survived in the archives of the University of Illinois, Urbana, parts of it at the Staatsbibliothek zu Berlin, which keeps the Gotthard Günther papers. Part of the correspondence seems to be lost. (On the general archival situation see Müller 2003, 2006).

Some sections of this correspondence are reproduced here chronologically in order to give some insight into the end of the BCL. It seems clear that the crisis of the BCL was an immediate result of the changes in the Directorate of Information Sciences of the Air Force Office of Scientific Research.

FIGURE 1

Mieke and Gotthard Günther, Champaign, ca. 1965
(Heinz von Foerster Archive, Vienna)



12.6.1970, Hamburg – Gotthard Günther to Heinz von Foerster:

Ich wäre Dir *sehr* dankbar, wenn Du mir gelegentlich ganz kurz mitteilen könntest, wie die Zukunft in Urbana eigentlich aussieht und was die Chancen für das Überleben der BCL group eigentlich sind.

(UIUC Archives, HvF papers box 5)

Translation: I would be *very* grateful, if you could very briefly inform me occasionally on what the future in Urbana looks like and what the chances for the survival of the BCL group really are.

As early as 1970 Günther was sure that the question was a question of survival. A month later Heinz von Foerster formulates an answer.

15.7.1970, (Urbana) – Heinz von Foerster to Gotthard Günther (handwritten draft):

Hier tobt der Kampf um die Existenz für das nächste Jahr lustig weiter. Da alles in der Schwebel ist, kann ich Dir nur schreiben, dass alles in der Schwebel ist. Das Information Directorate (Rowena und Harold Wooster) ist aufgelöst wie Du ja weißt, und die Frage ist wer unsere Projekte übernimmt. Ich bin fast jede zweite Woche in Washington um die richtige Türe zu finden aus der ich bepackt mit \$\$\$\$ wieder herauswandern kann. Das ist heute nicht so leicht – nicht weil meine Sehschärfe nachgelassen hat – sondern weil ununterbrochen alte Türen zugemauert werden und die neuen Türen auch nur kurze Zeit offenstehen bevor sie selbst wieder zugemauert werden. Jeder in Washington fürchtet morgen

hinauszufiegen oder von seinem Amt in ein anderes versetzt zu werden. Ein Irrenhaus voll von Paranoikern (with justification!)

B.C.L. ist in Vollbetrieb: täglich weit über Mitternacht, kein Samstag oder Sonntag, Proposals, Reports, Proposals, Reports, Proposals, Reports – daneben versuch ich so viele Studenten als möglich doktorieren zu lassen *und* ihnen eine Stellung zu verschaffen um – höchst eigennützig – sie nächstes Jahr los zu sein.

(UIUC Archives, HvF papers box 5).

Translation: The struggle for existence for the next year continues unabated. Since everything is in undecided I can only write you that everything is undecided. The information directorate (Rowena and Harold Wooster) was dissolved as you know, and the question is who will take over our projects. Nearly every second week I am in Washington to find a door, I could enter and walk out of again loaded with \$\$\$\$\$. This is not very easy today – not because my visual acuity is diminishing but because of old doors being permanently walled up and new doors are open just for a short time until they are walled up, too. Everybody in Washington fears being fired or to be transferred from his office. A madhouse full of paranoiacs (with justification).

BCL is in full operation: daily far past midnight, no Saturday, no Sunday, proposals, reports, proposals, reports, proposals, reports ... Besides that, I try to award doctorates to as many students as possible *and* to get them a job, in order – to get rid of them next year.

On 21.8.1970 E.C. Jordan, head of the Department of Electrical Engineering informs Gotthard Günther, “ that AFOSR will not be able to support your recent research proposal”. This marked the official end of Günther’s research grant at the BCL.

14.6.1972, Hamburg – Gotthard Günther an Heinz von Foerster:

Ich habe vorläufig keine Vorstellung von dem physischen Ausmaß der Katastrophe. Erstens: besteht das BCL in irgend einer Form (Leerform) in Zukunft überhaupt noch weiter? 2) Beabsichtigst Du auch weiter BCL Publikationen herauszugeben? Ich hatte, wie ich ja wohl schon on Champaign bemerkte, die Absicht mich auch in Zukunft an Publikationen zu beteiligen. [...]

Die wichtigste Frage aber ist doch: Was sind Deine Forschungspläne für die Zukunft? Ich hoffe, Du bescheidest Dich nicht für den Rest Deines Lebens als Pauker den Studenten den Unterschied zwischen Gleich- und Wechselstrom beizubringen. Du hast wundervolle Sachen geschrieben, und ich erhoffe mehr in dieser Richtung von Dir.

(UIUC Archives, HvF papers box 5).

Translation: For the present I have no idea of the actual scale of the catastrophe. First: will the BCL still exist in some form (empty form) in the future? Second: Do you intend to publish BCL publications in the future? I had, as I have told you in Champaign, the intention to contribute to publications in the future. [...]

But the most important question is: what are your research plans for the future? I hope you will not limit yourself to the rest of your life to teaching as a crammer

the difference between AC and DC. You have written wonderful things, and I hope there will be more coming from you in this direction.

In summer 1972 Heinz von Foerster developed a research project “Beyond Numerical Computers: Technology for Information Processing in Higher Order Representations”, which should have been based on man-machine communication. A proposal was formulated under the name of Paul Weston.

1.8.1972, Urbana – Heinz von Foerster to Gotthard Günther (handwritten draft):

Also will ich Dich, Gotthard, wenigstens ein bisschen seckieren: Bitte schreib uns was Schönes, Klares, und Ausführliches über Deine Kontextualitäten. Das Zeug wird immer wichtiger, besonders wenn wir uns jetzt mit Dialog (man-machine) beschäftigen. Das steht alles in unserem neuen Proposal drin, von dem ich Dir eine Kopie schicke, sobald ich das Geld hab eine zu machen. BCL läuft jetzt minimal (1 Mädchen: Kathy), und alle übrigen Ausgaben (+Kathy) kommen aus meiner Tasche.

(UIUC Archives, HvF papers box 5).

Translation: Therefore, Gotthard, I would like to tease you a little. Please write for us something beautiful, clear and detailed about your contextualities. The thing is becoming more and more important since we are engaged in a dialogue (man-machine) now. This is all in our new proposal, of which I shall send you a copy as soon as I can afford to make one. BCL is running on the bare minimum now (1 girl: Kathy), and all other expenses (+Kathy) come from my own wallet.

At the end of summer 1972 the situation still looked bad, or even worse. Mai von Foerster defines a political framework now – the possibility that Richard Nixon would be re-elected president of the United States again.

13.9.1972, Champaign – Mai von Foerster to Mieke and Gotthard Günther:

Die [Maturana] wollen daran arbeiten, dass Heinz 1973 nach Chile kommt, und wenn alles so weiter geht und die Wahl so ausgeht wie wir fürchten so wird das sicher keine schlechte Idee sein. [...]

Durch seine [Heinz'] Sekretärlösigkeit ist alles sehr schwierig geworden (Staatsbibliothek zu Berlin, Handschriftenabteilung, Nachlass 196 Gotthard Günther, Mp.577).

Translation: They [Maturana] want to work on bringing Heinz to Chile in 1973. If everything proceeds this way, and if the elections have the outcome we fear, this will not be a bad idea. [...]

Everything has become very difficult since he lacks a secretary.

In November 1972 Nixon had won the elections. Mai von Foerster again made comments on him but now also wrote about major alterations in society itself which she blamed for the bad situation within the university.

6.12.1972, Champaign – Mai von Foerster to Mieke and Gotthard Günther:

Sonst schweben wir nach wie vor im Niemandsland. Sie haben darin ja viel grössere Erfahrungen als wir und ertragen das daher mit wohl geölter

Philosophie. Für Heinz ist es eine Neuheit dass er durch keine Tür in einen neuen Arbeitsraum gehen kann dass er sehr niedergeschmettert ist. Er hält zwar die gleichen Arbeitsstunden wie eh und je – aber mir scheint es kommt weniger dabei heraus, es scheint mir mehr eine Konsolidierung zu sein. Und dann waren da die vielen papers zu schreiben für die verschiedenen Konferenzen, an denen er teilgenommen hatte. Mit einem Wort er rennt fürchterlich und atemlos um an der selben Stelle zu bleiben und ist oft sehr müde.

Die Universität hier ändert sich von Tag zu Tag mehr auf eine „Corporation“ zu, in der Massenlösungen für Massenfabrikation gesucht und gefunden werden. Alles was neu und abenteuerlich ist ist „out“. Und das war es gerade, was das Leben hier so angenehm gemacht hat. Es ist natürlich sehr leicht an alldem was hier im engeren und weiteren Kreis in dieser Richtung geschieht dem Nixon die Schuld zu geben weil er wirklich so unsympathisch ist aber wahrscheinlich ist er auch nur ein Symptom. Die Gründe dass das Leben überall so wird wie wir es nicht gern haben, liegen nicht in einzelnen Persönlichkeiten sondern tiefer.

(Staatsbibliothek zu Berlin, Handschriftenabteilung, Nachlass 196 Gotthard Günther, Mp. 577).

Translation: In other respects we are still hovering a no-man's land. You have much more experience than we have and bear it with well-working philosophy. For Heinz it is a novelty that there is no door for him to enter a new study, so he is devastated. He keeps the same working hours as ever – but it seems to me that there is less outcome, it seems to be more a consolidation. And then there were the many papers to be written for different conferences he attended. In a word, he runs around terribly and breathlessly just to remain at the same place and very often he is extremely tired.

From day to day the university is turning more and more into a “corporation” in which mass solutions are sought and found for mass-fabrication. Everything new and adventurous is “out”. And that was exactly what made life here so pleasant. Of course it is very easy to blame Nixon for everything happening closer to home and further afield because he is really so unlikeable, but probably he is just a symptom, too. The reasons why life everywhere is becoming such that we do not like it do not lie in a single person, they are deeper.

In May 1973 Mai von Foerster reported to the Günthers that the chances and possibilities of getting substantial research funds again were diminishing. For the first time she mentioned that Heinz could leave the university due to the given circumstances. For the Foersters, Humberto Maturana's invitation to visit Chile offered a possibility to escape their situation at Urbana, Illinois. In Santiago del Chile Foerster gave a course together with Maturana on postgraduate level with the title Cognitive Processes. The course would last for six weeks, the first session started on June 19th.

FIGURE 2

Public Announcement of Heinz von Foerster's and Humberto Maturana's Course at Santiago del Chile, June–July 1973 (Heinz von Foerster Archive, Vienna)

EL MERCURIO

Santiago de Chile, Miércoles 17 de Julio de 1973



UNIVERSIDAD DE CHILE
FACULTAD DE CIENCIAS FÍSICAS Y
MATEMÁTICAS
DEPARTAMENTO DE ELECTRICIDAD

El Departamento de Electricidad tiene el agrado de anunciar la próxima iniciación del siguiente curso a nivel de Postgrado en Ingeniería Eléctrica:

COGNITIVE PROCESSES

There is always a living being, a man in our case, that knows, and cognition cannot be understood independently of understanding how it (he) operates. Yet, cognition may be contemplated in various conceptual frameworks which define different aspects of his cognitive processes as, for instance, in experimental psychology, neurophysiology, psychiatry, psycholinguistics, cultural anthropology, etc.

In this course it is proposed to adopt the conceptual framework of cybernetics in which the problem of cognition is seen as a problem in computation in the most general sense, that is, of operations in a real space: transformations, modifications, rearrangements, orderings, etc., but not necessarily in terms of representations of quantity only.

There will be some discussion on computational paradigms as, e. g., finite state machines, Turing machines, recursive computations, etc., but the main concern will be for the semantic clarification of the application of these concepts in the study of cognition as a process in living organisms. Consequently, emphasis will be given to the origin, evolution and organization of the nervous system as a vehicle for the manifestation of the global process of cognition as a biological process in man.

The material will be presented by

Professor HEINZ VON FOERSTER, Department of Biophysics and of Electrical Engineering Director of the Biological Computer Laboratory, University of Illinois, Urbana, and by Professor HUMBERTO R. MATURANA, Departamento de Biología, Facultad de Ciencias Universidad de Chile.

Duration of the course: 6 weeks, 2 sessions per week
 First session: Tuesday, June the 19th at 16 hrs. at:
 Tupper 2007, of. 206.

3.5.1973, Champaign – Mai von Foerster to Mieke and Gotthard Günther:

Anfang Juni haben wir die Absicht auf zwei Monate nach Chile zu gehen. Nach den Ergebnissen eines Besuchs in Washington, gestern und heute, sieht es so aus, als ob die zwei Monate auch länger werden könnten. Denn gestern hat eine Besprechung mit einem Direktor der letzten Regierungsstelle, die noch nicht abgelehnt hatte Heinz' Arbeit zu unterstützen, herausgebracht, dass auch die nicht die leiseste Absicht haben. Heinz rief gestern Abend an und sagte, dass er keine Lust habe auf seine alten Tage E.E. 101 und E.E. 257 a zu lehren. Entweder ein leave of absence (sollte etwas anderes auftauchen) oder Retirement von der U.of.I. wird die Zukunft sein. Wie das im einzelnen vor sich gehen wird haben wir noch keine Ahnung. Aber wir haben dann genug Zeit über alles gründlich und gewissenhaft nachzudenken. [...]

Nur ein Rat: Brecht noch nicht die Zelte dort ab. Schaut Euch hier noch die Situation an, bevor Ihr einen entscheidenden Schritt tut. Die Greuel die sich hier abspielen sind auch kein Pappenstiel, wir sind jederzeit zur Dokumentation bereit. Die Richtung ist hier jedenfalls nicht nach links, das ist sicher.

(Staatsbibliothek zu Berlin, Handschriftenabteilung, Nachlass 196 Gotthard Günther, Mp.577).

Translation: At the beginning of June we intend to go to Chile for two months. After the results of a visit to Washington it looks like it could be more than two months. Yesterday a meeting with the director of the last government office which had not refused to support Heinz' work until now disclosed that they didn't have the slightest intention, either. Heinz called yesterday night saying that he has no desire to teach E.E. 101 and E.E. 257 at his age. Either leave of absence (should there emerge something different) or retirement from U. of I. will be the future. How this will play out in detail we still have no idea. But we will have enough time to think about everything thoroughly and diligently. [...]

Just one piece of advice: Don't tear down the tent there yet. Look at the situation here before you make the decisive step. Atrocities here are no chickenfeed, we are ready for documentation. The direction here in any case is not to the left, for sure.

In September 1973 Chilean democracy came to an end along with a coup d'état by military forces. In July the course of Foerster and Maturana had ended. In the following Foerster tried to support his Chilean colleagues and friends.

22.10.1973, Urbana – Heinz von Foerster to Gotthard Günther:

Ich bin „busy“ wie immer; Mai und ich sind gerade noch den chilenischen Wirren entschlüpft, und jetzt ziehe ich alle verfügbaren Schnüre um Humberto Maturana in die Vereinigten Staaten zu bringen. Leider reißen diese Schnüre wenn man zu schnell zieht, und so muss ich mir etwas vorsichtigeres Zupfen angewöhnen. (Staatsbibliothek zu Berlin, Handschriftenabteilung, Nachlass 196 Gotthard Günther, Mp.577).

Translation: I am "busy" as ever, Mai and I just managed to escape the Chilean troubles and now I am pulling all available strings to bring Humberto Maturana

to the United States. These strings tear if one pulls too fast, so I have to adjust to more carefully twitching.

In her Christmas letter to the Günthers Mai von Foerster tries to evaluate the Chilean experience.

9.12.1973, Champaign – Mai von Foerster to Mieke and Gotthard Günther:

Zur selben Zeit ereignete sich der chilenische Putsch, der alle unsere Freunde dort in Lebensgefahr oder wirtschaftlichen Ruin brachte und der Heinz in fieberhafte Aktivität warf, um ihnen zu helfen. 3 Wochen lang rannte er von Pontius zu Pilatus um eine Stelle für Maturana zu finden. Alle redeten zwar gross von „Hilfe für chilenische Flüchtlinge“, aber wie es dazu kam eine Stelle zu offerieren da sagten sie, Maturana hätte in den letzten Jahren nichts getan als philosophieren – und Philosophen könnten sie keine brauchen! Schliesslich gelang es Heinz zwei halbe Jobs aus der Erde zu stampfen, er rief Maturana jubelnd an – aber Chicho sagte er habe sich entschlossen vorläufig zu bleiben. Hoffentlich hat er die richtige Entscheidung getroffen denn das akademische Leben wird hier von Tag zu Tag armseliger und einfallsloser.

(Staatsbibliothek zu Berlin, Handschriftenabteilung, Nachlass 196 Gotthard Günther, Mp. 577).

Translation: At the same time the Chilean putsch happened, which brought all of our friends into danger of life or into economic ruin and threw Heinz into fevered activity to help them. For three weeks he ran from Pontius to Pilatus to find a position for Maturana. Everybody talked big about “help for Chilean refugees” but when it came to offering a job they said Maturana had done nothing in the last years except philosophy – and there is no need of philosophers. Finally Heinz succeeded in producing two half-time positions, and he made a jubilant call to Maturana. But Chico said that he decided to stay for the time being. Hopefully he made the right decision since academic life here is becoming ever more impoverished and lacking in ideas.

In spring of 1974 Mai von Foerster announces again the possibility that Heinz would leave university.

24.4.1974, Champaign – Mai von Foerster to Mieke and Gotthard Günther:

Im Sommer wollen Heinz und ich eine Fusswanderung durch die High Sierra machen. Wir wollen uns langsam aus der Consumer Society zurückziehen, da Heinz sehr daran denkt, seinen Abschied von der Universität zu nehmen.

(Staatsbibliothek zu Berlin, Handschriftenabteilung, Nachlass 196 Gotthard Günther, Mp. 577).

Translation: In the summer Heinz and I would like to do a hike through the High Sierra. We want to retreat from Consumer Society slowly, because Heinz is thinking of retiring from the university.

During summer 1974, Heinz von Foerster prepared his retirement and consequently had to move within the university. Mai von Foerster gives the following description:

4.8.1974, Champaign – Mai von Foerster to Mieke and Gotthard Günther:

Und waehrend das alles an der Oberflaeche vor sich ging, hat Heinz still fuer sich beschlossen, dass er diesen Herbst von der Uni Abschied nehmen will. Still und heimlich, ohne dass jemand davon Notiz nehmen konnte. Er hat gewartet bis zu den Ferien um es Jordan zu sagen, und hat behauptet dass Ed mit einem hoerbaren Seufzer der Erleichterung es vernommen hat. Und seither hat Heinz Tag und Nacht gearbeitet um seinen Abgang so ordentlich und gutvorbereitet zu machen wie es fuer einen Perfektionisten eben notwendig ist. Die hunderte von Files, tausende von Reprints, Briefen, Buechern, alles das musste gesiebt und verteilt werden. Die Archives haben einiges genommen, und das Department war so freundlich ihm einen grossen Raum fuer die Reprints zu lassen, und einen grossen als Office, in dem er seine Studenten (er hat noch 12 Graduate Students) verarzten kann.

[...] Jetzt ist alles sozusagen wieder unter Dach und Fach.

[...] Wie alles werden wird und wie wir mit unserem Geld auskommen werden, davon haben wir keine Ahnung. Wir glauben wir brauchen nicht viel, und manche Sachen werden einfach ausfallen muessen. Fliegen kann man nicht mehr auf eigene Rechnung. Nun, fuer einen grossen Teil unseres Lebens konnten wir auch nicht fliegen und haben es gar nicht vermisst. (Staatsbibliothek zu Berlin, Handschriftenabteilung, Nachlass 196 Gotthard Günther, Mp.577)

Translation: And while all of this happened on the surface, Heinz had quietly decided to take leave from university in autumn. Quietly and privately without anybody being able to take notice of it. He had waited until vacation to tell it Jordan and he told that Ed took it with an arduous sigh of relief. Since then Heinz worked day and night to make his departure as orderly and as well prepared as it is necessary for a perfectionist. Hundreds of files, thousands of reprints, letters, books had to be screened and distributed. The archives took something, and the department was so kind to provide a large room for reprints and another large room as office where he can vet his students (there are still 12 graduate students).

[...] Now everything is sealed and signed, so to speak.

[...] How everything will be and how we will get along with our money, we really have no idea. We think we don't need much, and some things will have to be omitted. Flying is not possible our own expense. Well, for a large part of our lives we also could not fly, and we didn't miss it.

Aside from his retirement, Heinz von Foerster remained active as a scientist.

14.10.1974, Champaign – Mai von Foerster to Mieke Günther:

Wenn ich je geglaubt hätte dass durch Heinz' Pensionierung Ruhe in unser Leben kommen würde dann wäre ich jetzt schon eines Besseren belehrt worden. Er hat zwar kein Zauberkunststück in petto aber er hat jetzt keinen triftigen Grund mehr die zahlreichen Einladungen zu Vorträgen und Konferenzen abzulehnen, und da er das alles sehr ernst und gründlich macht, und, wie er sagt, sehr langsam ist, ist er vollst beschäftigt.

(Staatsbibliothek zu Berlin, Handschriftenabteilung, Nachlass 196 Gotthard Günther, Mp.577).

Translation: If I ever thought that through Heinz' retirement there would be peace in our lives, then I even now would have been disabused. He has no tricks up his sleeves, but he has no good reason any more to reject the numerous invitations to lectures and conferences, and since he takes everything very seriously and thoroughly, and since he is as he says very slow, he is extremely busy.

21.2.1975, Champaign – Mai von Foerster to Mieke and Gotthard Günther:

Durch Heinz' Umzug an der Uni und die dadurch notwendige Eliminierung von vielen Files war durch Wochen Ihre ehemalige Jackson Adresse verschüttet. [...] Wie sie sehen ist unsere Existenz etwas kopflos momentan. Heinz leidet doch viel mehr an dem Abgeschnittensein als ich geglaubt hätte. [...] Bis nächstes Jahr wird sich unsere neue Existenz hoffentlich etwas zurechtgeschüttelt haben und Heinz' Nerven in besserem Zustand sein. Für den Sommer haben uns Freunde in der Nähe von San Francisco ein Haus angeboten und wir werden im April dorthin übersiedeln und sehen, ob wir dort leben möchten und ob, wenn ja, wir es uns überhaupt leisten könnten. (Staatsbibliothek zu Berlin, Handschriftenabteilung, Nachlass 196 Gotthard Günther, Mp. 577)

Translation: As a result of Heinz' move within the university and thus the necessary elimination of many files for weeks, your former Jackson address was buried. [...]

As you see, our existence is somehow confused at the moment. Heinz suffers much more from being cut off than I would have thought. [...] By next year our new existence hopefully will be adjusted and Heinz' nerves will be in a better shape. For the summer friends offered us a house close to San Francisco, and we will move there in April and we will see if we like living there, and if so, if we could afford it.

14.7.1975, Pescadero – Mai von Foerster to Mieke and Gotthard Günther:

Aber sonst ist sein Leben nicht einfach. Wir haben festgestellt dass er, wie ein Amputierter, unter Phantomschmerzen leidet. Noch immer hat er nicht gelernt, dass er amputiert ist, anstatt abzusagen wenn hunderte von Leuten ihm schreiben: tun sie das fuer mich, schreib mir diese Recommendation, schicken Sie mir diesen Artikel, erklaren Sie mir dieses Problem, versucht er auf alles zu antworten, hat aber keine Maschine mehr die es durchführt, und fuehlt sich mehr und mehr in die Enge gedraengt und verzweifelt. Und alles was ich sage, dass er endlich einen Strich unter die Rechnung machen soll und einfach sagen: BCL is closed, finis, – was ich sage hilft ihm nicht, der Schmerz ist einfach zu gross. Ich seh nur eine Hilfe: ein wirklich neues Interesse. Er hat sich hier in ein Stueck Wildnis verliebt, und wenn es uns gelingt das zu kaufen und darauf mit Andy's Hilfe, selber ein Haus zu bauen (und unsere Gesundheit haelt,) dann glaube ich kann Heinz wieder gesund werden und, sozusagen, sein geistiges Leben auch wieder neu beginnen auf einem neuen Grund, hoffentlich die Traeume von BCL ueberwunden.

[...]

Alles, alles Liebe von uns beiden. Heinz ist in tiefen Gesprächen mit Ken Wilson, der gerade zu Besuch hier ist, und der, zu meinem Entsetzen, Pläne hat einen BCL Appendix weiterzuführen. Auch muss Maturana auf irgend eine Weise aus Chile herausgebracht werden. And so it goes.

(Staatsbibliothek zu Berlin, Handschriftenabteilung, Nachlass 196 Gotthard Günther, Mp. 577).

Translation: But otherwise his life is not easy. We have noted that like an amputee he suffers from phantom pain. I still did not learn that he is amputated. Instead of cancelling when hundreds of people write to him: please do this for me, write that recommendation for me, send me this article, explain me that problem, he tries to answer all of them but has no apparatus anymore to execute it, and he feels more and more cornered and desperate. And all I can say that he should draw a line and just say BCL is closed, *finis*, all what I am saying does not help him, the pain is just too acute. I see only one way out: a really new interest. He fell in love with a piece of wilderness, and if we succeed in buying it and with Andy's help in building a house (and keeping our health), then I believe Heinz will recover again and so to speak start his intellectual life again on new grounds, hopefully having dreams of BCL overcome.

[...]

All our love from both of us. Heinz is engaged in deep conversations with Ken Wilson who is visiting us and who – to my consternation – has plans to perpetuate a BCL appendix. Also Maturana has to be led out of Chile somehow. And so it goes.

13.3 Concluding Remarks

In 1976 Kenneth Wilson edited a micro-fiche collection of the works written in the BCL which – together with *Cybernetics of Cybernetics* published in 1974 – can be regarded as a keystone of its history. In 1977 Heinz and Mai von Foerster permanently moved to Pescadero, California. It took two more years until their new house at the Rattlesnake hill was built. Heinz von Foerster afterwards taught at Californian universities (San José and Stanford) and had a remarkable international career as a key figure in second-order cybernetics, constructivism and systemics. The selection of texts presented in this article taken from a much larger correspondence addressing a large variety of themes indicates very well that the decline of the BCL began as early as in 1970. This decline was due to a lack of funding only. BCL's director, Heinz von Foerster, worked extremely hard to cope with the ongoing crisis of the laboratory. He developed a series of new projects (see the list of research proposals in the appendix). These projects were highly innovative and reflect a radical turn to society. The texts presented above also show that during the

process of crisis Heinz and Mai von Foerster personally had to cope with traumatic experiences and hardships of all kind.

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Appendix

List of Research Proposals at the BCL, 1970–1974

BCL-Proposal, Direct Access Intelligence Systems

Title: Proposal for a basic research program entitled: Toward Direct Access Intelligence Systems. Prepared by: Heinz Von Foerster, Director Biological Computer Laboratory, Department of Electrical Engineering, University of Illinois, Urbana, Illinois. Date: 1. Aug. 1970. Agency: AF-OSR (Continuation of activities sponsored under the auspices of AFOSR Grant 70–1865 – Applications of Cognitive Systems Theory to Man-Machine Systems). Requested Starting Date: 1. Oct. 1969. Duration: 2 years. Estimated Budget for 1st year: 69,875 Dollar. iii + 52 S. 1970

Proposal for Research, Cognitive Memory (Sep. 1970 – Aug. 1971)

Heinz von Foerster

Title: Cognitive Memory. A Computer Oriented Epistemological Approach to Information Storage and Retrieval. Proposal for Research Submitted to the U. S. Commissioner of Education for Support through Authorization of the Bureau of Research. Duration of Activity: 1 September 1970–31 August 1971. Application Organization: Coordinated Science Laboratory of the University of Illinois, Urbana, Illinois. Applicants: Heinz Von Foerster (Initiator and Principal Investigator, Professor: (217) 333–2654), Robert T. Chien (Principal Co-Investigator, Professor: (217) 333–1347), C. L. Coates (Chairman, University Research Board), R. J. Martin (Director, Engineering Experiment Station), D. Alpert (Chairman, University Research Board), C. C. De Long (Bursar, University of Illinois). Total Federal Funds Requested: 139.000 Dollar. Date: 15. Jul. 1970. O.E. Staff Member Contacted: Lawrence S. Papier, Program Officer Library and Information Sciences Research Branch. Bureau of Research Number Previously Assigned: Grant OEC-1-7-071213-4557. Continuation. iii + 126 S.

Proposal, Public Cognitive Computer Systems

Title: Proposal for the Planning Phase of an inderdisciplinary research, education and developement project entitled: Toward Public Cognitive Computer Systems. Prepared by: Heinz von Foerster and John A. Easley (Principal Investigators) – The Committee for Cognitive Studies, The Graduate College, University of Illinois, Urbana, Illinois. Date: 1. Oct. 1971. Agency: National Science Foundation. v + 158 S. 1971

Proposal: Cognitive Technology

Title: Cognitive Technology: A Citizen-Society Problem Solving Interface. Research Proposal, Submitted to the National Science Foundation, Research Applied to National Needs (RANN). By Herbert Brün, John A. Easley Jr., Frederic K. Lehman, Heinz Von Foerster, Paul E. Weston, Klaus G. Witz – The Committee for Cognitive Studies. Date: 15. Feb. 1972. Publisher: Biological Computer Laboratory. Dept. of Electrical Engineering, University of Illinois, Urbana, Illinois. Agency: National Science Foundation. vi + 99 S. 1972

Research Proposal, Cognitive Technology: A Citizen-Society Problem Solving Interface

Proposal: Cognitive Technology. A Citizen-Society Problem Solving Interface (plus Kopie)

Heinz von Foerster

Title: Cognitive Technology: A Citizen-Society Problem Solving Interface. Research Proposal Submitted to the National Science Foundation, Research Applied to National Needs (RANN). Applicant Organization: The Department of Electrical Engineering, University of Illinois, Urbana, Illinois. Applicants: Heinz Von Foerster (Principal Investigator, SS # 358-36-6573, Professor of Electrical Engineering and Biophysics, (217) 333-2654), John A. Easley, Jr. (Principal Co-Investigator, SS # 242-16-8873, Professor of Teacher Education, Department of Elementary Education, (217) 333-2853), E. C. Jordan (Head, Department of Electrical Engineering), R. J. Martin (Director, Engineering Experiment Station), D. Alpert (Chairman, University Research Board), W. N. Griffith (Assistant Bursar, University of Illinois). Duration of Activity: 4 Year. Requested Starting Date: 1 July 1972. Amount Requested: 917,841 Dollar. Date: 15. Feb. 1972. v + 146 S. 1972

BCL-Proposal, Direct Access Intelligence Systems

Heinz von Foerster

Title: Proposal for a basic research program entitled: Toward Direct Access Intelligence Systems. Prepared by: Heinz Von Foerster, Director Biological Computer Laboratory, Department Electrical Engineering, University of Illinois, Urbana, Illinois. Date: 1. Jun. 1971. Agency: AF-OSR (Continuation of activities sponsored under the auspices of the current AFOSR Grant 70–1865 – Toward Direct Access Intelligence Systems). Requested Starting Date: 1. Oct. 1971. Duration: 2 years. Estimated Budget for 1st year: 50,000 Dollar. iv + 106 S. 1971

BCL-Proposal, Information Processing Technology

Paul Weston

Title: Proposal: Beyond Numerical Computers: Technology for Information Processing in Higher Order Representations. Prepared for: Air Force Office of Scientific Research, Directorate of Electronic and Solid State Sciences, 1400 Wilson Boulevard, Arlington, Virginia 22209. Attention Dr. George Knausenberger. By: Biological Computer Laboratory, Department of Electrical Engineering, University of Illinois, Urbana, Illinois. Date: 1. Jun. 1972. Amount Requested: 99,906 Dollar. Starting Date Requested: 1. Sep. 1972. ii + 54 S. 1972

Heinz von Foerster, Valerie Lamont

Title: Proposal: Cybernetics of Cybernetics. Prepared for: POINT, P.O.Box 99554, San Francisco, California 94109, Attention Michael Phillips, President. By: Biological Computer Laboratory, Department of Electrical Engineering, University of Illinois, Urbana, Illinois. Date: 1. Jun. 1973. Amount Requested: 16.000 Dollar. Starting Date Requested: 1. Sep. 1973. Principal Investigator: Heinz Von Foerster. iii + 25 S. 1973

