FUSCHL CONVERSATION 2002
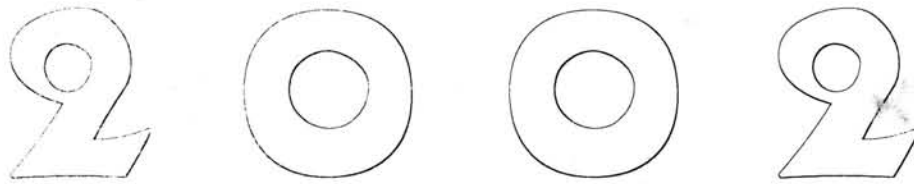
A Conversation on Bettering Human Systems

Collen, A., Degtiar, V., Hofer, C., Lang, J., and Paritsis, N. (2002).

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Abstract

The team focus is described and the preliminary synthesis provided of the individual input papers and email activity that occurred prior to meeting. Synopsis of the conversation over the four days is presented. Bettering emerged as the principal theme interrelating all aspects of the conversation. Summary is given of the group presentation to and conversation with the other conversation teams. The meanings and implications of bettering distinguished this conversation from the previous ones of this team.

1. Introduction

This report communicates the three major phases of our work for the 2002 Fuschl Conversation. First, we summarize our activities to prepare for meeting in person as a team. Second, we give a day-by-day synopsis of our team conversation. And third, we convey our experience of engaging the group as a whole at week's end to contribute to the larger conversation.

The perspectives of our team members were very diverse. We examined the conversation theme primarily through five lenses: computer programming, student-teacher relationships, family development, living intelligence and environmental relations, and protecting human research participants.

Topics covered were the meanings of betterment; the relevance of ethics, values, norms, and bio-socio-cultural and unconscious behavioral context; metaphors for bettering; the contrast between to have and to be; models of bettering; the contrast cooperation-competition between system-environment and autopoietic relationships; possible places to apply the contents of our conversation; and integrating our group theme with the other conversation groups.

Our team activities included a team presentation at end of the week to the larger group, designed to engage in the bettering of the larger group conversation.

2. The Call to Conversation

To continue the theme and team from previous years, a summary of the team focus was published in the IFSR Newsletter (Collen, 2001). It read as follows:

The influence of systems sciences is no where more needed than in areas pertaining to human welfare and the human condition. This conversation group will continue its 1998-2000 focus on the relevance and applications of systems thinking to the design of human activity systems for human betterment. We wish to emphasis the nature of social and human oriented systems that reveal to us who we become, how we come to know our world, and the ways we relate to one another. We are especially interested in such systems as learning and learner centered education (caring) systems, systems that foster human development, personal and collective guidance systems, and synergistic win-win systems. These special interests are informed by what we have learned about human beings over the course of this century and can learn constructively from each other in this coming century. We believe that knowledge of the ways we think, feel, perceive, and inter-relate help us as designers to create and develop our systems for human betterment. We expect such systems to take into consideration our human welfare as well as the welfare of those affected by our activities.

The globe promises to be a more holistic, interconnected and interdependent world community. Whether we like it or not, we are entrusted from now on as the stewards of all life on the planet. Therefore, our concern for the design of systems of human betterment must include the ecological, ethical, humane, and participatory dimensions in the broadest sense.

In anticipation of our forthcoming conversation, we are particularly interested in your explicit examples and cases of systems designed for human betterment. Those participating are asked to bring if possible a specific case to contribute to our conversation. Opening trigger question: What cases present us with exemplars of the design of systems for human betterment? Trigger question to be applied to each case: What can we learn by way of best practices that we find and can illustrate through this case? We shall make use of our earlier conversations as platforms to launch into our examination of specific cases. Reports of our 1998 and 2000 conversations are available to inform and assist you to prepare for joining us in our 2002 conversation.

This announcement brought several respondents together by email, from which the five authors became this conversation team. Previous reports (Collen et al, 1998, 2000) were distributed by post to facilitate familiarity with our progress to date with the conversation theme.

3. Preliminary Synthesis

After team members emailed their comments to the statement above and their individual input papers, the team leader presented a synthesis of them in one statement sent to the team by email. It was as follows:

In preparation for the Fuschl 2002 Conversation, this document represents the points of convergence among the input papers received for Team 2: Designing Systems for Human Betterment. It includes several trigger questions which we may use to stimulate, guide, and facilitate our conversation.

The input papers represent a range of viewpoints about our focus on designing systems for human betterment. Vladimir gives us the family to consider as a socio-biological system, Jodi the relationship between the Tibetan Buddhist teacher and his Western student as a system, and Arne the Institutional Review Board that examines research proposals for their impact on human beings. Christian points to human oriented programming of the computer, bringing into our conversation the virtual dimension in the design of human activity systems. Gianfranco reminds us of the ethicality and Nicholas the importance of the environment in designing and developing human systems. Hence, we have a variety of cases proposed, which we can discuss, namely, families of various kinds, human relationships of several teachers and their students, a given review board, and software development projects from the machine-like to extreme programming modes. Among the considerations of each case that can be included are the ethics and auto-synthetic and co-synthetic systems-environment relations of designing the particular system for human betterment. The papers forward a range of human values thought significant in the endeavor of designing systems for human betterment: communication, awareness, competitiveness, courage, empowerment, ethics, evaluation, feedback, friendship, harmony, knowledge, training, logic, meaning, openness, participatory decision making, responsibility, simplicity, sustainable development, and trust. All papers allude in one way or another to the notion of emergence in human systems. Human relations generate a number of emergent properties and phenomena. Furthermore, our inventions, such as the computer, can accentuate and make them more visible to us.

As to trigger questions, there are several, as follows: What case may serve as an exemplar of a system designed for human betterment? Are there best practices we can learn about designing such a system? What do we mean by betterment? How do we go about assessing betterment and finding evidence of betterment? How do systems of social control influence the designing system and the system being designed? Are their developmental stages of betterment and designing such systems? How do the practices that epitomize betterment (such as trust and empowerment) enable the designing of such systems? Given the qualities of the teacher and the student, the co-designers of the system, what practices make for human betterment of human relations? What forms of human interaction promote betterment in contrast to detriment, control, and imposition? What constraints and supports enable auto-synthesis in designing systems for human betterment? What knowledge of constraints and supports enable us to design for the betterment of families?

Brief discussion ensued by email to the point we can recognize clearly that our team activity marked the first phase in anticipation of our on-site conversation. With our work above, and the temporary absence of one member for 2002, we traveled from our home country to Fuschl-am-See to initiate the second phase: to conduct our conversation.

4. Our Conversation

4.1. Day 1

Our five member team began with self-introductions, and we shared our expectations in taking up the conversation theme. We also introduced our main perspectives, specifically: software development and extreme computer programming, human living intelligence and environment-systems relations, cross cultural and student-teacher relationships, cybernetics applied to people and technology, and cybernetic-systemic aspects of research ethics and recycling. We discussed some connections among us that drew us to membership in this team. This introductory phrase reaffirmed our individual connections to the call to conversation. We reiterated a form of some trigger

questions, stated in our preliminary synthesis: What can we learn from examples and best practices about designing systems for human betterment?

By mid-day, we had before us a better sense of our individualities, emerging teamness, and the five main perspectives that were to provide the principal drivers for generating conversation. But to what end remained rather elusive to us.

We discussed changing the system to make it better. This focus prompted our generation of many phrases expressing our perspectives on this idea. We illustrated our points with living intelligence, the human family, and the relationship between the teacher and the student. We compared and contrasted varied means toward human betterment, specifically through the way of propositions, logic, conduct, and applications of science; personal life experiences in the world that result in knowing something; the reflective and contemplative interplay of emotional and cognitive processes; and being with and applying the teachings of mentors when one is on a spiritual path. Many references and illustrations were made to transformative processes leading to betterment.

At this point, the place of values and core religious beliefs entered our focus. We contrasted happiness and betterment, comparing Eastern and Western views. We also contrasted attachments, such as to material things in contrast to a way of being. We illustrated our points on the values represented in key religious and spiritual persons, namely Christ and Buddha, respectively, that underlie our focus on betterment in designing a system. We remembered that in the short term our beliefs and actions, including our religious-based behaviors, seem to depend more on instincts and rearing during childhood, and if this is so, then with peoples that hold very contrasting values, in the long term, it is a major challenge for humanity to design systems for the human betterment of all. What may be betterment for one person may not be for another person, because the issue goes to the basic values held by those designing the system. The core values are implicit in the process of design. They define the initial conditions that eventually influence the process to its final state, where ever it goes. This aspect hit us as an inescapable aspect at the heart of what constitutes a system of human betterment.

We came to consider a middle way between contrasting human values in the examples presented, considering the common core of being human, such qualities as love, compassion, presence, awareness, and mindfulness of others that need to be evident in designing systems for human betterment. We also wondered what means of training we might be possible to bring out favorably in designing systems the common core of values for both the short and long term.

We ended this segment of our conversation with questions, recognizing the enigmatic nature of change. Do and can the core values change in the process of designing a system? Do we have any control over change in this process? What is the goal and purpose of our conversation? We start a process with initial conditions and they soon change. Goals, plans, and trajectories are like moving targets. Definitions of starting and ending points can only be preliminary. We do not know the end point in the future, because society is a living system. The design and what constitutes human betterment change through the process of systems maturation; designing and systems are moving targets. Designing involves an uncertain journey without really knowing the exact address where we will arrive in the future. We have to be willing to take the risks. However, we can act to minimize some risks by taking into consideration what we can agree are the features of human nature that may lead us to betterment.

We devoted our afternoon sessions to debating whether the process of designing a system for human betterment is a self-referencing process in which the system, being autopoietic, may reproduce itself without major influence of the environment. In contrast, some favored it as an

interactive process necessitating system-environment relations to bring about betterment. We debated whether optimization governed human decisions and behaviors, and system-environment relations. We differentiated two kinds of environment: those we can not change as human beings and those we can. We discussed three categories of invariant processes that impinge on changes of systems: 1) laws of systems (cycle of birth and death), 2) standard genetic and biological processes that can influence human betterment (heredity), and 3) irreversible processes (maturation, orientations in space and time; we can not go back to the same place and time again).

We focused on cybernetic relationships that cut across and underlie our five perspectives. The key was our recognition that similar processes of learning transpire between customers and programmers, parents and their children, teachers and their students, researchers and reviewers of their research, and living processes and intelligence. The relation is coupled, interactive, and interdependent. There is reciprocity; the feedback is reciprocal (Figure 1). From a systemic view, we cannot have one without the other. We do not have a user without a programmer, a student without a teacher, a child without a parent, a reviewer without a researcher, and living intelligence without life. From the dance of the two, arises the one, namely, the coupling. Some kind of relationship is essential to the emergence of betterment. Betterment is the key emergent quality in our conversation on designing systems. It is this emergent quality that distinguishes systems for human betterment from other systems. To describe this relation or coupling with its emergent quality of betterment is an expression of our values.
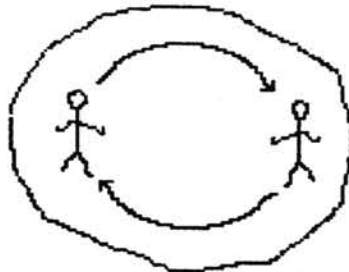

Fig. 1: Basic model of coupling as a building unit of systems
designed for human betterment

Naturally, the question arises, what do we mean by human betterment? Optimization entered our discussion with some difference of opinion. We debated whether optimization is the better view of betterment. Optimization may be better for couplings of those who dominant society but may not be optimal for couplings of those in a minority group. We considered it to be one point of view as to what happens in coupling for betterment to emerge. We can also take one coupling, the family for example, and see how this particular coupling seeks betterment, rather than look for and even impose the expectation that some form of optimization, as a normative betterment, occurs in all families. Select examples, such as the selling of a daughter to be a bride to the son of another family, facilitated our coverage of the place that sociocultural context and religious values have in various definitions of what is meant by betterment. To illustrate more specifically, the extent of optimization for any group, we discussed, depends on its criterion value. If the group emerged as a whole with a criterion of equal rights, for example, optimization means betterment in terms of equal rights. In contrast, if the group criterion is that only some members of the family represent income, that means different rights in this sense, it could lead to the selling of a daughter. Thus, the emergent family system has core values, by its co-evolution with its socio-cultural context, that defines what is meant by betterment.

At this point, we reached a critical phase of our conversation. Our discourse had covered enough content to evidence a group convergence on what was to become an epiphany. Coupling of two

elements is the most basic of levels in systems dynamics. The consequence is the emergent property or quality that, in our case, we term betterment. Coupling is a processing relationship that creates a new enveloping system. Since what we define as bettering involves an ethical judgment, when we witness a coupling, we may term it an ethical coupling. That is, it is the dynamic, interactions, interplay, processing relationship that it produces and makes visible betterment. Emerging implies that the system is always changing.

In parallel fashion, we may describe the coupling process more dynamically in terms like bettering. Betterment is a goal and bettering is a process. Bettering is in the nature of the way in which we relate. We realized quickly that our conversation had shifted from talking about ideas as states, like betterment, to processes that have common dynamics we termed bettering. This turn in the conversation of our group process was significant, as bettering was to preoccupy our thinking from that point forward.

Each team member's perspective related to this basic underlying coupling. At its most basic level in human systems, it is two persons in relationship. This is our starting point. This relationship becomes our most fundamental system for designing systems for human bettering. From this basic system can be build others and all increasingly more complex human systems.

The remaining time of our session was consumed with the ethical dilemma we face when differences in core values are involved in coupling, which we may experience as a conflict of values, specifically, a relationship between two persons of different religions, user wanting efficient software and programmer wanting monetary profit, researcher wanting to execute research procedures and reviewer wanting those procedures to protect human research participants, and student wanting a passing grade and a teacher wanting high quality of learning. What qualities emerge then in couplings that suggest bettering? What challenges must be faced in designing the system that can work with clashing values? Suggestions were made to express apparent differences in terms of aims, then work collectively with the different aims in ways in which both parties can maximize the benefits within the framework of ethics of the enveloping system. We compared and contrasted cooperation, competition, and their combination as ways of bettering toward common as well as different goals.

4.2. Day 2

We began the day with a shift in our language from betterment to bettering. We started with some trigger questions that epitomized our first day of conversation. What do we mean by bettering? Is emerging and bettering synonymous? What are the qualities of a coupling that come forth in human relationship that constitute bettering? What emergent properties of bettering would we expect in the relationship that furthers the system that is designing itself?

We continued with further consideration of competition and cooperation. We discussed the influence of decision making, rules of conduct, and market share in the quality of the relationship, as manifest in our five perspectives. What may be bettering for one person and people may be detrimental for another person and people. Third parties, such as the government, may be necessary to oversee and regulate bettering, such that even conflicting parties can find a way toward mutual bettering.

To sharpen our understanding of what is bettering, we discussed a contrasting view prevalent in human relating and coupling. From two persons in relationship to governments, relating involves preferred use of language to influence, but always with the possibility of physical force in the background. Coupling is maintained and developed through the command of the language. If that

fails, then physical force is applied. People abuse their position and power when they create their relationships in this way. People become bound and obligated to each other, and controlled. Abuse of power is the antithesis of bettering. The fact is that many human relationships, organizations, and governments exist today through this view of human relating. Controlling through language, when fear of physical force is inherent in human relationships, is not bettering. Designing systems upon this view contrasted sharply with our group theme which would emphasize premises based on love and caring, rather than fear and threats of punishment. However, we could not exclude or discount the necessity as part of the ethics of designing a social system that society includes criminals and sociopathic persons who require some form of social control on some other basis, because they are a danger to others and they do not respond to love and caring.

We contrasted to be and to have (Fromm, 1976). For example, to be a person in power and to have power are not the same. In this contrast, to be is closer to bettering than to have. However, we also considered the complementary view (Koestler, 1979, 1982) that it is a complement rather than a contrast that more fully informs our conversation. Bettering may be more accurately understood through a mixture of the two extremes. Our conversation then covered examples of bettering from our team member's perspectives.

One kind of customer-programmer relationship is where the programmers do not know much about the needs of the users, and the cycle of beta testing the software for a software commuter company can be months, perhaps a year. Other kinds of customer-programmer relationships are usually much closer and cycle is shorter, say an hour or a day. An example of the latter is the open source software movement, public licensing agreements, and shareware. World Wide Web is likely one system that generally works for human betterment. Many similar networks are bettering a globalizing world.

A living intelligence is the organism in relation to its environment through which its cognitions of self-environment representations can be constructed and integrated (Paritsis, 1987). But we also noted that living intelligence can be viewed as a concept inherent in the environment. Bettering is the relating between or coupling of the two, because it is through the environment that relating with the organism develops. In general, whether physical aspects of development or support by a system of social control, we added that bettering is reproducing itself and self organizing activities to sustain the organism-environment relationship. A living intelligence is able to adapt and co-develop with its environment. We discussed influences of science and technology in this dynamic of development. Bettering is co-evolving of the relationship by natural processes that may include scientific and technological involvement of human beings and their organizations, possessing means to control the environment, who will do so ethically and responsibly. Bettering may represent a middle way and position between one extreme of not doing anything to impose what we know to design, and the other extreme, to redesign and control nature and evolution only to our liking. We may think of control in the cybernetic sense of feedback and influence from an ethically conscious and responsible audience.

Our conversation moved into articulating further our ideas of power and control in relation to bettering. We contrasted bettering and its antithesis with illustrations of well known persons from history, namely Mother Teresa and Adolph Hitler, who had influence (control) through their relating based on caring/love and physical force/fear, respectively. Whether we illustrate this with the mother and child, programmer and user, or student and teacher, the relating enables the establishment of this coupling from all other possible couplings, and this is what is meant by control. The coupling becomes distinguishable through the mutual feedback process that is relating (Figure 1) and control in the cybernetic sense. Once established, some human activity is necessary to sustain coupling. This relating is what is meant by control.

However, the term control was controversial, because of the range of meanings held by our team members. Opposing the cybernetic view is the idea that there is only one kind of control when one person is dictating to another what to say and do. We experienced it even in our conversation, for example, insistence on the use of specific language of control to the exclusion of other definitions of control. Of contemporary interest, we emphasized particularly the case when a person, who is a member of the dominant culture of a society, imposes upon another, who is affiliated with a cultural minority group of that society. This form of relating may illustrate the definition of control from the viewpoint of those identifying with the minority. We suggested the term moving to replace controlling. Moving is a neutral term in reference to coupling, relating, and bettering. Controlling can be too easily taken to mean detriment. If moving is impeding, it means control, if moving is facilitating, it means progress. Bettering involves the modulation of the two. We noted once more, bettering is both an inherent premise for coupling and an expectant emergent quality through relating. Further, it is not a matter of whether control is to be or not to be evident in bettering. Moving the relating toward betterment is key. Control is present to some degree and modulated with its antithesis in productive ways to guide bettering. A corollary became evident to us that in the conduct of conversation the choice of words and use of language in designing systems for human betterment deserves much more attention and careful usage in conversation, else we too quickly presume to communicate and understand each other when we do not.

As we approached the end of our second day we delimited our conversation to ourselves. Our trigger question became: What is it about our conversation that suggests we are bettering? And further: Is there any evidence of bettering in our process? We shared with each other personal betterments relevant to the perspectives we each bring to the team. Bettering was viewed to be more complex than moving. It was the quality of communicating, discussing, and learning as the conversation lengthened. Bettering meant listening to each other and with the passage of time our understanding got better and better. By end of the second day, we listed a series of words and phrases that conveyed what bettering meant to us (Table 1). The list was also taken to be evidence of our bettering.

- knowledge of the subject
- knowledge of other members
- harmony in conversing
- complementarity and balancing views
- satisfaction with group membership
- insights, discernments, and clarity
- connecting ideas and seeing connections that others have among them
- flexibility, openness, and tolerance
- improving feelings about processes of discussion,
- ease with being in relationship in the group and communicating with others
- learning
- improved position to deal with our own interests
- collaborating, cooperating, and converging
- presence of collective consciousness
- co-inhabiting, co-existing, and co-evolving
- negotiating and progressing
- mutual respect

Table 1: Bettering in conversation

4.3. Day 3

From our team progress report to the larger group the evening before, based on Table 1, we converged on several points of consensus that helped us move to a deeper level of conversation, eventually taking in turn each of the five perspectives of our team members. We articulated our points of convergence (Table 2).

- Bettering is process and emergent qualities are betterments, but bettering may be emphasized as an emergent and desired property of conversation itself.
- Coupling, relating, and moving the relationship provide core concepts for understanding all systems for human bettering.
- Bettering applies to all levels of social systems from human dyads to large human groups, peoples and societies.
- Bettering is to be contextualized in the interdependence among levels of communication and changes at each level.
- Values that produce harmony (common purpose) comprise the initial conditions for designing.
- Models depicting future trajectories in designing systems are difficult to actualize, we must remain open to making adjustments of them, and our ability to actualize them is limited in light of system-environment co-evolution.
- The system being designed is to be kept as simple as possible, such that simple models that everyone can understand and illustrate will facilitate the conversation.
- Invariances that apply to all systems designed for human betterment are helpful to know, such as, to be an ethical system, those for whom the system is designed must be included in the process of its design, creation, and continuation.
- Designing systems for human betterment involves the application of meta values and meta ethics indicative of our humanness.

Table 2: Points of convergence on designing systems for human betterment

To illustrate bettering and betterments, individual members gave their own synopsis of gains (betterments) reaped over the initial two days of conversation. We began with a model applicable to programmers and users (Figure 2), developed from the most basic one (Figure 1). Next we applied the model to our conversation team (Figure 3) and returned to consider further a system of betterment discussed earlier, specifically, marriage by parental arrangement that is supposed to exist for the betterment of the married and the families.

Regarding the design of the programmer-customer systems, the model (Figure 2) involves inputs (knowledge, experience) => member interactions => outputs (betterments). What we receive is what we learn that is hopefully betterments. These betterments include many kinds of feedback at many levels, such as knowledge gained.
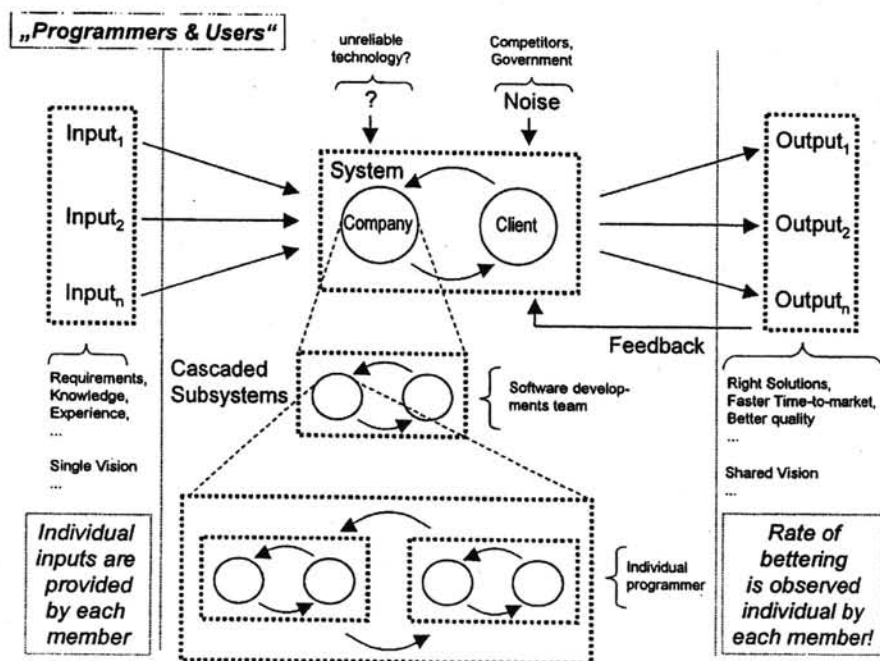
Fig 2: Model of the programmer-customer relationship as a system for human betterment

This model can easily be applied to all perspectives represented in our team conversation (Figure 3). Group dynamics leads to betterments, such as increased tolerance.
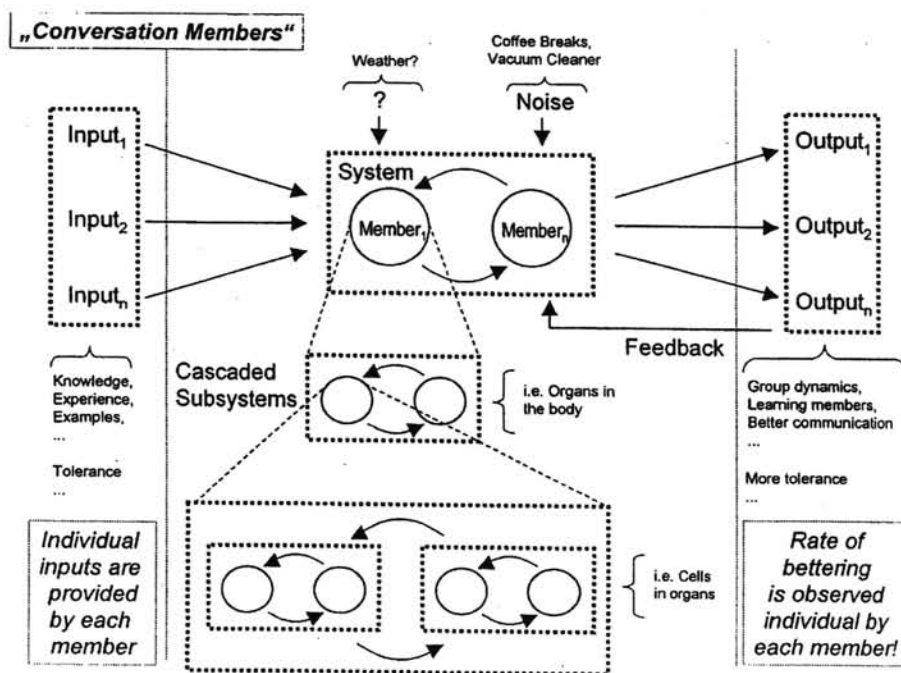

Fig 3: Model of the group in conversation for bettering

Designing a system of human betterment for the student-teacher relationship had four main areas to the model: the historical context of the teachings, qualities and characteristics of the teacher and student, variables to be considered in a student-teacher relationship, and the transition from the outer teacher to the awakening of the inner teacher in the student (Lang, 2000). Of the authentic

teacher, the outstanding qualities are compassion, love, and wisdom. Of the student, the outstanding qualities are intellectual capacity, faith, and devotion. The variables on the path of learning involve various crisis, but the outstanding qualities enable both teacher and student to sustain the relationship. Finally, we have to consider the outcome of all these aspects of the model, for example the transmission of the teachings from teacher to student. Bettering is the transition process from the outer teacher (catalyst) to awaken the inner teacher in the student. Much of the transition is working with and transcending obscurations within the student to gain the understandings of what one is learning. Betterments in the form of wisdom is the lived knowledge that eventually comes in this life long learning process. Although we illustrated neither this perspective with a model, nor the next, we moved our conversations to comparing and contrasting the above rendition of the East with our student-teacher relationships in the West.

We completed our third day with the third perspective about living intelligence. The living system is an auto-synthetic system. The function of the system is to auto-synthesize its matter-energy and information processing components. The environment in this case is of major importance because it determines to a large extend what the system would be as for example through the selection process in the Darwinian sense. Living intelligence is the part for interaction with the environment. The interactions are an influencing towards its own goals. The human system consists of a subsystem that has the structure of a controller that specifies and generates the needs, motivates the system towards fulfilling its needs, estimates satisfaction, and on the basis of needs and achieved satisfaction forms the degree of the motivation (Paritsis and Stewart 1979). The human system has a cognitive structure of a decision maker that specifies the goals, perceives the environment, and on these bases forms its plans of action (Paritsis 1998). For a model of itself and the environment, see Paritsis (1987). Betterment is related to the increase in variety and order of the parts and the whole. Of the information processing sub-systems and matter-energy sub-systems, there is improvement of strategies for increasing happiness and satisfaction. Living intelligent develops by increasing its knowledge. The members of the system at each level have to be equally developed as much as possible. The values of the system that induce betterment are related. They have to include the increase of satisfaction, happiness, well being, and development into itself and into other systems to which it belongs, by auto-synthesizing itself and co-synthesizing with the other similar subsystems. The interest for itself, other similar systems and the system it belongs are for increasing order and variety of behavior, strategies, and other characteristics of the system. The example of two systems interacting as a model to discuss human betterment is also in the generalized case of the system and its environment. Auto-synthesizing systems can sustain themselves temporarily without taking from the environment, but at some point they have to receive matter-energy and information to replenish, sustain, and reproduce themselves.

4.4. Day 4

The last full day began with more individual synopses of a perspective, after which we began our synthesis of views towards what was to be our group report.

The idea of family betterment has a long history. Insufficient attention has been given to the biological nature of the family and the process of its maturation as a whole (Degtiar, 2001). Now we understand more about the family as a socio-biological system and the process of its maturation as an epigenetic one, that is, as the process of alteration of neural nets of its members as a result of repeated interaction between genomes and external (social) environment (Figure 4). It is necessary to develop our knowledge and education that we are bound with family maturation, and a system of long-term training in schools. Because rates of maturation are more rapid at younger ages, it is advantageous to shift training to junior levels. The first part of our knowledge should be connected

with the social level, where we need to understand the sense of family betterment as family harmonization, which claims observance of metaethics and ethical principles in the course of interactions with other members of the family. This means equal rights of husband and wife. The second part of our knowledge should be bound with clear understanding of the stages of family development: 1) courting and marriage, 2) creation of the family, 3) playing roles and distribution of responsibilities, and 4) maturation of nervous systems that are adequate to participate in decision making regarding roles and responsibilities. New family begins with the biologies of the dyad, which are active in interactions and decision making. The decision making of the new family therefore may be different than the families before it. Conflicts demand significant time and expenditures of energy of the family. Only harmonious decisions based on ethics can lead the family to betterment. Disharmony leads to emergence of domination and use of manipulation strategies. Harmony is bound with the emergence of love and its growth in the family as a whole. To understand the mechanism of family interaction and as a whole, the diagram of family interactions of neural nets is depicted (Figure 4). Maturation of the family as a whole physical system consists of complementary neural network representations of each other. Interactions that lead to satisfaction and interpretations we call love involve these nets. When a member dies, the activity of the networks are not eliminated. The third part of our knowledge should be bound with development strategies for designing improvements of the family as a system with the purpose to harmonize the family. It may be necessary to develop training procedures for all aspects of family life cycle to give attention to conflicts and disharmony. All procedures (upbringing, schooling, courting) should be bound to stages of family maturation and promote family betterment.
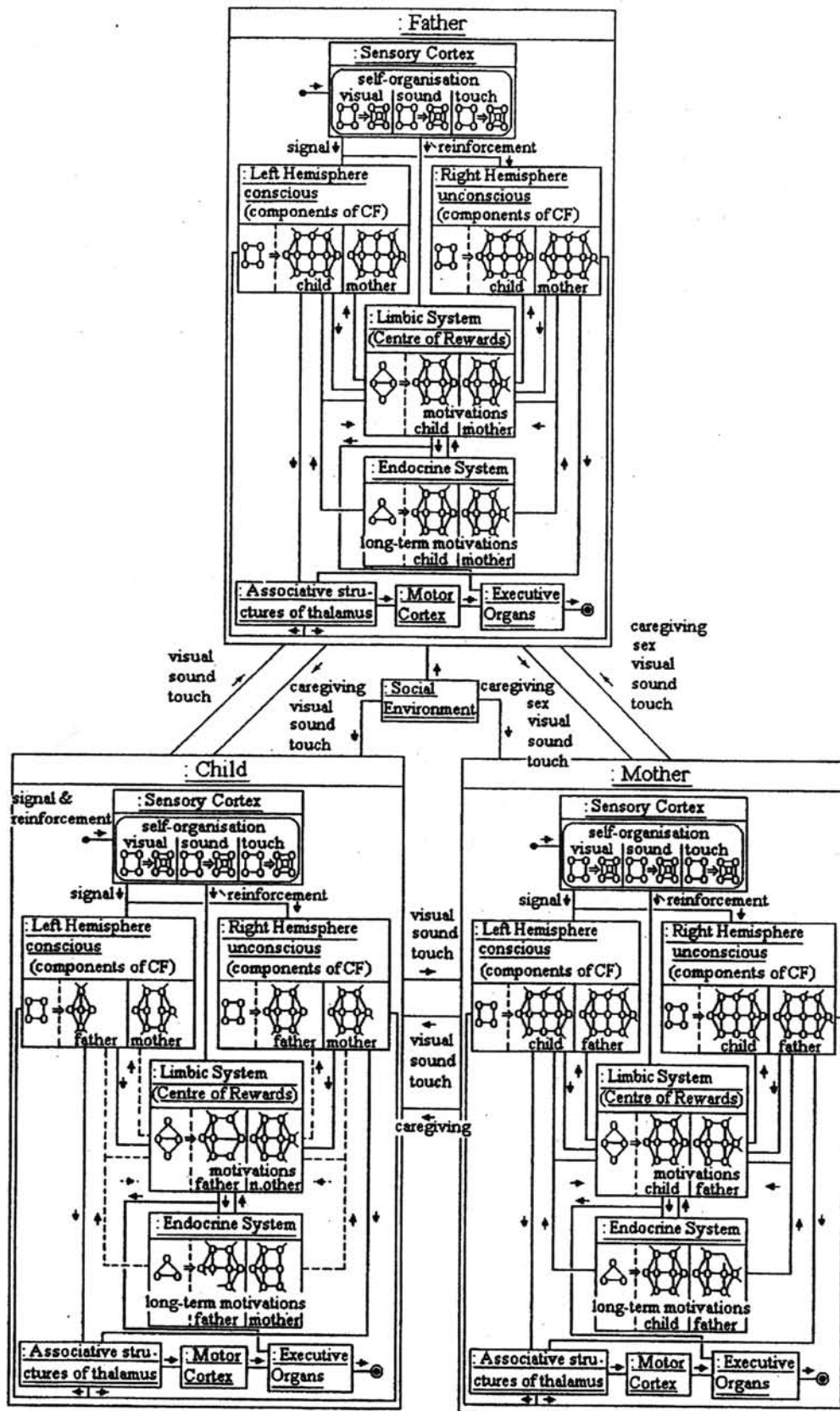
Fig 4: Model of the family as a system for human betterment

We transitioned to the next perspective by briefly discussing an aspect of early Greek philosophy that was divided between Physical Philosophy about how persons fulfill desires and Moral Philosophy about how persons ought to behave. We also contrasted the rules that govern our behavior, as dictated by morals, ethics and law with personal and private rules which may or may not follow the public ones.

The last perspective presented we termed recycling. To take the idea of recycling seriously means to actualize the idea in reality. Can we imagine a world in which waste does not exist? To live in this world means to live a life in which everything has a use and continues to be used. In general, the use-reuse relation lies at the crux of the basic model. We can take any object of production as the core element and its byproduct as the other element. The reciprocal relation between the two constitutes what is mean by the coupling relation. The associated fundamental question is whether the relation is bettering. Without recycling some form of pollution inevitably results. Recycling applies as much to ideas as things. Many ideas in human history have been recycled again and again. But what is new and what is old? Producing and recycling knowledge is central to bettering. If we do not go back to the earlier times and study what has been learned, we may be fated to use unnecessarily a lot of resources learning about an idea as if it is the first time. We have to pass the learning from generation to generation, and this passing may be considered one form of bettering. Combining vision of the future with what we have learned to our betterment from the past is a dynamic relevant to designing systems for human betterment. But there has to be a conscious awareness of bettering and the consciousness present to participate in human relationships for bettering.

Education as a general idea was one area of convergence among our perspectives, as it represents also passing what we know from generation to generation. We noted that each generation must learn as if it is the first generation, such matters as: 1) money makes ethics necessary, 2) variety makes order necessary, 3) knowledge leads to actions for bettering, 4) designing makes possible the future as a proactive endeavor, and 5) learning and training are necessary for the passage of knowledge and practice, respectively, to the next generation. There are numerous arenas and collective forms of human communication, in which people can come together to design for bettering and move toward a better future. Love and caring in learning needs to imbue bettering. To this point in passing, we mentioned the Greek goddess Philotes (of friendship, collaboration, peace, and harmony), without the Greek god Nikos (of fighting and hate). We added the idea Agape, which in original Greek means love and passion without sex, to be distinguished from Eros (attracting, coming together with love, passion, and sex).

We converged on an idea that added another perspective to our conversation. Persons develop different patterns that describe their life course. There is the paradoxical life course of the scrooges of the world, who in their miserly fashion accumulate much wealth over their life, by what they believe is bettering, at great expense to others. Later in life they become the apparent opposite kind of person, who is generous and giving of what they have accumulated, to better the lives of others. We discussed briefly some other life courses that likely challenge commonly held definitions of bettering. There are the Robin Hoods, who steal from the wealthy to give to the poor. Another archetype is the liberator, who emancipates the suppressed from the oppression of the tyrant, dictator, and ruler. And yet another one is the pharaoh, who exploits and uses others to accumulate wealth in the belief he does so for all who serve him. He may also believe that with great wealth, he can gain passage to the after-life. We left unresolved and for a future conversation whether these life courses are indeed bettering.

From the basic model (Figure 1), we noted its elaboration as the cybernetic model of inputs, throughputs, outputs, and feedback. Also, an implicit part of the model is the unknown input. Mapped through time the coupling and relating are processes of moving that can be described from better through bettering to betterments. We chose to reexpress our descriptors, stemming from Table 1, as Figure 5.
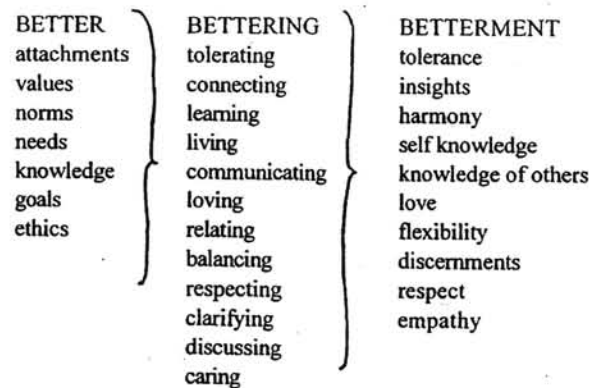
BETTER	BETTERING	BETTERMENT
attachments	tolerating	tolerance
values	connecting	insights
norms	learning	harmony
needs	living	self knowledge
knowledge	communicating	knowledge of others
goals	loving	love
ethics	relating	flexibility
	balancing	discernments
	respecting	respect
	clarifying	empathy
	discussing	
	caring	

Fig. 5: The process of better, bettering, and betterment

In preparation for our report to the larger group, we completed two activities. Each member wrote a brief statement to communicate their perspective on the theme of bettering. We checked with the other teams to seek a connection of their conversation with ours. It is with this knowledge that we proceeded to prepare both our group report and our team presentation for the last morning.

We spent the afternoon on the organization and content of our group presentation. We agreed on five parts consisting of basic concepts, first model, second model, some implications and consequences, and engaging the larger group in conversation. We assigned parts among us and prepared our parts. As part of our preparation, one member visited the other conversation teams to get a take on the "what and where" of their conversations, while the our team members drafted their parts of our group presentation. We reconvened later in the afternoon to create what became our team presentation. We performed a trial run or rehearsal to the imagined larger group.

We ended the day discussing briefly an outline and some logistical details for completing this team paper.

5. Team Contribution to the Larger Conversation

In the morning of the last day, our group was the last group to present. We informed the larger group of our thematic and process emphases on bettering (Figure 5).

We presented simpler models of human interaction (Figures 1, 2, and 3), which allows for bettering through interacting (verbal and non-verbal), exchanging (knowledge, experience), mutual understanding, learning, and consensus finding, whereby a permanent feedback loop enables continuous improvement. Through cascading it is easy to scale up the model to larger groups. Applying the model, we have various hierarchies of the member of a group as a system, and then there is the conversation teams that comprise the Fuschl conversation as a super-system containing all five teams.

The second model was more extended and complex (Figure 4). Physical processes of long term bettering are bound with long term processes of maturation. Biological and social systems interact,

for example, mother-father-child as a family system. At the physical level, it is a process of alteration of neural nets of each member of the social groups as a result of iterative interaction or gain (bettering) between the genomes of their members and their external social environment.

As to implications and consequences of bettering, the design of human systems has to take into account that 1) bettering human systems has to be as much as possible widespread to all human sub-systems involved in the design; 2) bettering the whole system and its emergent properties has to be considered as important as, and sometimes more important than the betterment of the parts; 3) bettering has to improve philotes (love, collaboration, harmonization) among the members at any level of human systems, and educate and develop human systems towards those values; 4) any human system that designs itself should try to preserve the well being of the other systems that consists the environment of that system, towards co-synthesis and co-evolution; and 5) any human bettering function had to balance wealth and power by ethics, complexity or variety by rules and order, competition by cooperation.

Having heard from the other conversation teams and given our group presentation, we engaged the other teams (marked 1, 3, 4, and 5 in Figure 6), reaching out to them, to integrate their contributions with ours, by asking them the following trigger question: "How does your specific conversation topic connect with our conversation theme, designing systems for human bettering?"
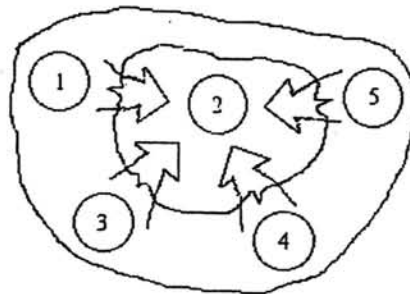

Fig. 6: Conversation Team 2 engaging the other teams in the larger conversation

After hearing from each team, a brief conversation ensued. In effect, we brought our team theme on bettering into the broadened arena of the larger group conversation. We closed our larger conversation with a trigger question intended to provoke further conversation in the future: "Have we, as the larger group, by linking our conversation themes, demonstrated a way of bettering our Fuschl conversation?"

6. Summary and Conclusion

Each member contributed a unique perspective to the conversation team. Our perspectives toward human betterment were epitomized in the following phrases: extreme computer programming, student-teacher relationship, mother-child and family development, living intelligence and system-environment relations, and protecting human research participants. We added eventually two more perspectives called recycling and life course. We introduced ourselves, our perspectives, and engaged in preliminary discussion of some connections among us to discover a common interest and some directions for conversation.

In the ensuing sessions, the chief areas covered were 1) the meanings of betterment, 2) the relevance of ethics, values, norms, and socio-cultural context, 3) metaphors for bettering, 4) the contrast between to have and to be, 5) models of bettering that are depicted in terms of cybernetic relationships, 6) the contrast between system-environment and autopoietic relationships, 7) possible

places for application of the content of our conversation, and 8) linkages between our group theme and those of the other conversation teams.

Our conversation was concluded with our presentation to the larger group. It included an intentional engagement with the other teams in an ambitious step to encompass the larger group in conversation. We sought to foster greater awareness of the team linkages among us, particularly in regard to bettering as a common underlying presumption and process inherent in all team conversations and end-of-the-day team progress reports that constituted in part the larger group conversation. Throughout the week, we were also conscious of between-team table talk that occurred during coffee breaks and meals times which could, and sometimes did, influence us. Although the course of our team conversation had many specific points of benefit and satisfaction for each individual team member, in hindsight from the action researcher perspective, it seemed to us that our culminating group presentation with subsequent interactions as a group-of-the-whole was a highlight and a significant team contribution to bettering the Fuschl Conversation. We demonstratively brought all teams to experience their larger presence, that is to say, inhabit the larger conversation.

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FOR CYBERNETIC STUDIES

BERICHTE   REPORTS

Christian Hofer, Gerhard Chroust (eds.)

THE ELEVENTH FUSCHL CONVERSATION
(APRIL 7 TO 12, 2002)

Dezember 2002

CYBERNETICS AND SYSTEMS 2002

VOLUME I

Proceedings of the Sixteenth European Meeting on
Cybernetics and Systems Research,
organized by the Austrian Society for Cybernetic Studies,
held at the University of Vienna, Austria, 2–5 April 2002

Edited by

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CYBERNETICS AND SYSTEMS 2002
Proceedings of the 16th European Meeting on
Cybernetics and Systems Research