The Systemics of Dialogism: On the Prevalence of the Self in HCI Design

Colin T. Schmidt
Centre for Research in Pragmatics, Philosophy of Language and Communication, The Sorbonne University, Paris, France. E-mail: coschmi@idf.ext.jussieu.fr

Since simulating human communication is dependant on the evolution of this very activity, all efforts in the field of Human–Computer Interaction (HCI) are intuitively bound to be too late. Little sign of this fact is reflected in the literature. In stride with the foresight of French philosopher Francis Jacques, the present work explores the systemological approach of dialogism as a new way of couching the problem of person–machine “dialogue.” The difficulties encountered in the “heat of design” are only indirectly addressed; shedding light upon standard new interface = new solution philosophies implicit in current bipolar metaphors for human–computer relationships is the major motivation. The posture taken differs from current HCI stances insofar as a machine is taken to be only part of the solution, and works towards establishing a viewpoint from which HCI technology—a chapter of the new Cognitive Science Order—is seen to evolve with the ever-changing demands of users: Dialogism contains no individuality. Popular stances are qualified as monological since two separate incompatible information processing systems are therein put forth, the “Self” and the “Other.” But the particularity of this “communication” does not lie in the chain of emission, transmission, and reception states of which it is made, but in the relevance that such behavior acquires in sustaining the biological circularity of Man. Thus as humans developing designership skills, accepting that our subjectivity moderates this process becomes paramount. The author’s conviction is that an HCI community reflecting upon the future of interface will gain bona fide self-awareness from conceptualizing the Machine as a component of society, rather than an entity separate from it.

Introduction

Many books in the field of Human–Computer Interaction (HCI) naturally touch on the science of design (Card, Moran, & Newell, 1983; Laurel, 1990; Norman & Draper, 1986; Suchman, 1987). They contribute greatly to the betterment of the end product, either in discussing general approaches or by delving into the technical details of particular devices. Desktop computers come first to mind, but others take airplane cockpits, ticket dispensers, or household appliances as their object of study. The present work will only indirectly take up such diverse HCI concerns, its focus being on the designer himself. In establishing a long-term research program, it would not be reasonable to devote oneself to designing an interface that will quickly become obsolete; the goal is therefore to take a new stand—though complementary to those of the traditional science of design—that will lead to a better understanding particularly of the pre-technological acts of HCI as they are situated in the life of the designer. Since perceptual skew is a risk due to my enquiry involving phenomenal states of the self-conscious, inter-subjective criteria will be sought in the Cognitive Sciences. The intention is to stimulate others in their search for new directions in HCI research.

Software Engineering (SE), like Human Factors Psychology (HF), is grounded in the theory of Cognitivism. Cognitive scientists generally accept and promote the idea that humans are informavores—beings whose central nervous system processes information. The fundamental premise adhered to is that the mind is neither substantial nor non-substantial, being an abstractable structure that can be implemented in countless physical substrata. Isolating reason from what is exceptionally human inaugurates the construction of “intelligent artifacts.” This raises a crucial question: If mind is truly abstractable, why would we relinquish this belief and increasingly implant restricted versions of the “ghost” in computer hardware? At the dawning of Cognitive Science, ambitions were great, to build a human being was the dream, but alas, even today mind remains almost a total enigma. Turing predicted that, by the year 2000, we would achieve dialogical linguistic behavior in machines; will we make it? We see “CAS” everywhere (e.g., Computer-Aided Translation)—simply aided and thus not satisfactorily simulated...
as a whole. Pointing out such things behooves the cognitive doctrine; it is to be feared (or rejoiced) that humans do not absorb and process information in a similar way as computers. Alternatively, the work of the designer has become that of creating the right input for user processing in view of triggering in users a desired output. The temptation is strong to prolong this tradition since it does lead to technologies that, after a certain period of adjustment, propose accepted practical solutions. But because of the mysteries of progress, each time one looks at the problem of person–machine interface, it is different. This depends on perspective; long-term viability does not seem to be very high among the values currently being pursued in the name of the new Western Rational Tradition. Of particular interest here would be setting a direction in HCI research that does not only enjoy ephemeral success.

We know how to recognize living systems, such as persons, falcons, or fir trees; but doing so is to rely on feeling, The Machine does not have this undefinable essence. On the other hand, there is an organization common to all living systems, the nature of the components notwithstanding. My hypothesis is that it may be advantageous to view the Machine as a component of living society. Starting by describing the different properties of humans and machines and then on to a critique of some perceptions in state-of-the-art HCI, I will crescendo towards a general systems theory of a dialogical posture for design thought in the creation of new person–machine situations. Some systems are difficult to identify and delimit. The systemological approach allows one to understand—better than the traditional analytical approaches—the organization of systems with multiple decision makers (i.e., Social systems) or those that integrate heterogeneous elements (i.e., Ecosystems). This approach will not be used in hopes of achieving an exhaustive explanation of a particular moment in the history of design, but rather to figuratively dissolve the presence of the blamed (the Machine) in the solution of society and plunge the designer himself into this new liquid, our design process; by better encircling the HCI problem, the emergent qualities of this new system will come to the surface. These would be qualities that none of the system’s components—user, machine, and designer—possess on their own.

Soundly grounding the context of discussion on HCI issues in Logic would be highly beneficial. As there seems to be some confusion as to just what constitutes communication, due perhaps to the coming of age of new technologies, developing a precise model of communication is extremely important to the future of HCI, even if only to warn against certain acts. Possible turning points in HCI design history are at stake. Over the years, Francis Jacques has used rigor that is sound in my view, his works finding consort in those of Quine (1960), Putnam (1981), and Ryle (1973) amongst other philosophers, in building a truly dialogical model of human communication. Such a formal proposition may also express the communication between concepts within the cognitive realm of HCI specialists, (Schmidt, “The Pragmatics of Dialogism,” forthcoming). Furthermore, the notion of reference is central for coming to grips with the problem of human–computer “communication,” and Jacques’ oeuvre lends nicely to this cause.

Epistemology and the HCI Observer

The “anatomy” of a desktop computer is limited to a brain (CPU) as an organ in vitro. This brings with it the perceptual problems of the figure/background concerning the distinction between the inner horizon—bodily subjectivity—and the environment. For example, the Machine gathers distal stimuli each explicitly and independently defined from one another in order to build an object—like letters that form a word. Contrariwise, “semantic priming” in Cognitive Psychology shows that humans cultivate an intrinsically global target first; identification occurs before spelling verification (Segui & Grainger, 1990). Interaction between under-determined data and partially-determined expectations takes place in the anticipating Self. So users have access to pragmatic information whereas the Machine is up against the semantic barrier. The method of each is exactly the opposite to that of the other. To summarize, the Machine does not have the corporeal “I can” that consists not only of exploratory aptitudes involved in predicting the outcome of a sentence, but also intersensorial transpositions between taste, hearing, smell, feeling, and vision embodied in the synergetic system of the human body (Dreyfus, 1972). Our cognitive capabilities are inextricably intertwined with corporeity—the property of having bodily substance—and not only having a brain.

Corporeal experience will be the epistemological fulcrum in demonstrating just how differently users and machines should be represented in HCI models. Maturana and Valera (1980) headed up the movement leading from the acceptability of coupling by input to the exploitation of alternative notions whereby coupling occurs through closure. This is the result of their scientific breakthrough defining humans as autopoietic beings; thus the user is an autonomous system having the characteristic principle of being operationally closed. Genetic information does not mean anything to a closed system (i.e., living cell, or, a whole user) unless the act of comprehending it happens within the system. The user is a being subjective in nature, self-producing, and can tell the difference between himself and the outside world. Nevertheless, categorization of our individual roles is not as clean-cut as this could lead us to think. In life, we take on diverse activities, each activity belonging to a different community. For example, HCI specialists put themselves in the shoes of users as much as they possibly can in reflecting upon the process of interaction with a machine: “In order to use this machine, I need to know . . . .” Users momentarily become part of the community of designers when they
say, “the machine would work better if . . .”; “I would not have built it like that”; etc. What is important is to realize that these thoughts are not in contradiction with their respective primary roles.

In the HCI community, more rapid prototyping is used, but design practices remain largely based on set ideas of user rationality whether diagnosis is carried out on prototypes or commercialized versions of software. The initial prototype (question) put forth edifies the entire behavior—of user-subject and designer—that follows (response). The designer is positioned inside the system allowing him to compare the beginning and the end of the process. For instance, the designer’s thoughts on “dialogue” between a ticket dispenser and its user will be dual in nature, which means they reflect his primary capabilities as HCI designer, and in parallel, they are a projection into the user faced with (perhaps an improved version of) the ticket-dispenser. I will come back to interactions between various poles in HCI personality later on.

**Communication or Terminological Mishap?**

Person–machine “dialogue” processes involve nonliving units. Despite the numerous uses of the person–person metaphor in interface, the rudimentary interaction of physical information flow represents the limits of the type of relationship that user and machine can entertain directly. Designers generally put forth a monological model—message emitted, message transmitted, message received—whereby the user enters into contact with a device that can have but a restricted commitment towards him.

The end to which studies in man–machine communication are devoted is the design of interfaces adapted to users’ activities. Research in this field has shown that the inadequacy of command and control dispositives are linked to the confrontation of two information processing systems [italics added], each having their own methods of functioning; on the one hand there is the operator, and on the other, the machine. (Falzon, 1989, p. 17; translated by author)

Thus separated, reconciliation on a referential agenda remains impossible; what produces agreement on propositional content is being conscious of a referent together. Perceived as being two, they are unofficial sub-systems of the same system; unofficial since the machine, as well as the user, does not contribute to maintaining a relational coupling by participating in a behavioral reciprocity whereby two entities would form one. In short, they do not subscribe to the systemological autonomy of dialogism. “. . . each sub-system is limited to responding to input according to its own structure, understanding in the rules prescribed by its own code. Obviously, in this case what is emitted by one sub-system would be noise for the other” (Jacques, 1985, p. 213; translated by author).

Terminologically, it is somewhat of handed to address the question as we habitually do. For what brought imagination to the goal of HCI is being taken for literal reality. An immense number of publications in HCI use words like conversation, dialogue, etc., (see Carberry, 1990; Vignat, 1989; and especially Card et al., 1983, p. 7, to name just a few) in order to evoke the activity between humans and computational artefacts, but this constitutes “lexical hijacking.” For example, very widespread usage of the word dialogue in HCI means it no longer has the status of an item borrowed from interpersonal communication: Broken is the Mandate of Metaphor. Is the (although implicit) link of acknowledgment back to the source intact? Philosophers often work onomasiologically—from concept to word (opposite to the standard usage dictionary)—to clarify such issues, which will help reestablish what the intended inspiration was and how its effect is being blocked.

The concepts that warrant using dialogical terminology (i.e., inter-human expression) have for foundation the simultaneous occurrence of a perturbation and a compensation within a single system. Dialogism is nevertheless a degree-related issue. The affective qualities of the Self—the conscious thinking subject—constrains him to living in relationships that are intimate or less intimate with the Other. The sequence implicated in an exchange is dictated by the motives for the Self–Other relationship; hence the notion of discursive strategy. For the purposes of building a dialogical model, strategies in which the Other is indeterminate, or in which people talk at or past each other do not apply. They do not fit in with situations where two interlocutors show readiness to work together forming a network vis-à-vis a task. The ensuing interaction, a product of their relationship (i.e., not the reason for, cause of, or premise to it), confirms an operational singularity, thereby satisfying the conditions for dialogism making genuine communication possible. Expressing the various types of dialogism formally—by assigning each term its own definition as a discursive strategy—will help the HCI designer realize to what extent person–machine sessions do not meet these conditions.

For starters, any reference to human–computer conversation is potentially an aberration. Conversation’s playful nature—for instance, the game-like, internal function of “pleasant day, isn’t it?”—leaves a lot of latitude for interlocutors to maneuver about. And because its intersential flow is spontaneous, conversation is hardly finalized with a particular goal in sight. “When conversing, someone throws the ball; the other person does not know if he is supposed to send it back or throw it to a third person, leave it on the ground or pick it up and put it in his pocket” (Wittgenstein’s thoughts, cf. Jacques, 1991, p. 167). Given that conversation has this phatic dimension to it, the Self and the Other involved are never really committed to accomplishing a well-defined task. The notion of conversation therefore does not correspond to the term conversation so often used to designate the restricted
linguistic activity that happens during person–machine processes.

The concept of dialogue is distinguished from that of conversation by putting the emphasis on its external function of filling a referential objective; from the Self’s point of view, the weight of the referent drives the exchange, shifting somewhat the attention from the Other onto the task. Thus dialogue, clarifying in nature, necessarily progresses towards the accomplishment of a specified task. In general, it starts off with an initial question that sets a cooperative framework between interlocutors. For instance, “Where can I buy some stamps?” According to Vernant, such a question,

. . . sets the goal of dialogue [italics added] at the same time it presupposes a minimum of agreement about preliminary information accepted without being discussed. The very steadfastness of such presuppositions ensures the unity of the dialogical sequence. . . . These presuppositions have perhaps already been the focal point of earlier debates but thereafter became “unquestionable.” (Vernant, 1986, p. 172; translated by author)

A number of implicit premises underlie the enquiry: The fact that stamps exist, that they can be bought, etc. Referential dialogue aims for agreement among interlocutors either on what they are talking about, the meaning of the words they employ, or the legitimacy of a point of view. The notion of dialogue cannot be embodied in a simple turn-taking plagued by incommunicability.

There is no winner nor loser in referential dialogue. Interlocutors easily lose face without considerable consequences; thus one might say, “You’re right, so I was wrong; oh well, it doesn’t matter.” Likewise it is impossible to lose the initiative during a referential exchange because it is very much dependant on the general direction or the goal of the exchange. A third strategic phenomenon is negotiation; unlike in dialogue, control is constantly being sought since making the Other lose the initiative is the goal of the game. And in negotiation, there is a lot at stake given that interlocutors are not acting on a personal level but in the name of a group. Negotiators are relatively steady adversaries, but have “freedom” of expression under the surveillance of their respective groups. It is therefore of utmost importance to avoid losing face in the framework of this strategy; it is the sign of defeat. The concept of negotiation insists upon strength relations. Consisting of events that are simultaneously perturbative and compensatory within interlocutive coupling, conversation, dialogue, and negotiation are interpersonal encounters that subscribe naturally to the systemic approach of dialogism.

One may disagree with the assignation of specific “discursive tactics” to these terms if one will. Whichever flavor one gives each term is not as critical as understanding the importance of reaffirming the ties each term in reality has with human-supported communicability—the quality of, presently, having the power to communicate; for, through the overuse of metaphor, this link fades away into the oblivious lands of communicativity—having the tendency to communicate, in the past sense—as these terms are largely employed today. The aim of this terminological demonstration was simply to reinstate homo communicans as the sole heir to conjointly produced meaning. The future of HCI depends on such a premise. In their literal sense then, the terms used hardly evoke the meeting of person with machine. In order to avoid unduly attributing strategic characteristics to the machine that are beyond its grasp, it would be preferable to speak of the person–machine forced interview, in which the machine does not simply set the direction of the exchange but represents its pivotal point holding it rigidly in place. No evolution takes place in the exchange process without the “consent” of the machine (the firmly defined a priori knowledge of the user) since the user is restricted to formulating his demands according to his “new identity” designated by the designer. One could speak with more optimism of person–machine exchanges or human–computer sessions. These terms are not so harsh as forced interview; they remain almost as truthful and avoid misconception in the eyes of philosophers of language as to specific speech frameworks.

Seeing HCI through the Spectacles of Dialogism

The asymmetrical relation in dialogism is absent from the forced interview. Speaking non-metaphorically, person–machine dialogue (written as it most often appears in HCI literature, without author disownership quotes) does not exist. Is the objective to eradicate certain lexical sayings from HCI, namely those firmly rooted in dialogism, just because the essence of this concept does not show up in person–computer sessions? Opportunity to introduce more appropriate terminology is knocking at the door as such classificatory obsession installs order amongst the frameworks of speech by establishing the extent to which each is dialogical. But can this bring about immediate change concerning “dialogue” design- ership and its techniques? Nonetheless, one gets an idea of what would be an authentically dialogical perspective, with a view to explaining the raison d’être of the coupling between Man and Machine. In setting afoot with a probing commitment of this type, can we not create an escape hatch from the struggle between design metaphors that are helplessly twofold in order to access metaphors anchored in systemics, with indivisibly firm grounding?

Does the superficial structure of alternating utterances evoke dialogism for today’s interface scientists? Supposedly not. Why then this terminological mishap? Effectively, at the dawning of communication theories, dialogism was absent from the model of inspiration—that of humans. The analytical eye at the epoch of Shannon and Weaver (1949) already wore the spectacles of an engineer expecting “to recover a message as little altered as possible at the other end of a communication link-up’’.
(Jacques, 1985, p. 189, translated by author). Then Grice (1975) and Searle (1969) supplied ex post facto explanations of human interlocutors in practice, thus further perpetuating this monological model. But the conditions of success of an interpersonal exchange do not reside in the accommodating of fellow interlocutors. The constitution of a veritably dialogical model of interhuman exchanges being his goal, Jacques feels it is futile to consciously amass hypotheses, i.e., “I know that you know that I intend to . . .”. “Neither the speaker nor the listener need to entertain intentions as complicated as this in order to communicate . . . we are not aware of these intentions when speaking . . . reciprocity would not live on in separation” (Jacques, 1982, pp. 185–187, translated by author). It can therefore be argued that any act in human exchanges simultaneously externalizes the intentions of the Self and internalizes those of the Other. Jacques strikes home the last nail in the coffin of the monological model in demanding “what meaning should be assigned to the term message when it involves a sequence that is addressed by no one to no one, but circulates between functional poles?” (Jacques, 1985, p. 190, translated by author). From a personal standpoint, I think such judgment is destined to have firm impact on HCI modeling.

The monological model makes sense for information flow between machines, but is not fully appropriate for relationships containing a human component. Although notions such as input and output help determine the role of devices within a person–machine system, describing how users function, those biologically self-referring beings, with the aid of the same model is impossible. What represents input and output with regards to artefactual structures is assigned by the HCI designer (allo-referentiality). Autonomy is therefore out of reach for these structures, for the key to their mission and identity is in the hands of the observer. The problem of using information theory models is that it lowers understanding of the user, a fully autonomous being, to a mere information processor requiring purpose assignment.

The model of communication that Jacques propounds (1985, p. 213)—to which I have added my own interpretation of some discursive strategies—is shown in Figure 1.

$\Sigma_R$ represents the system. Its self-organizing functioning subjugates $S_1$ and $S_2$. Notice that the games of conversation put little importance on referential focus, remaining internal to $\Sigma_R$: the outcome of the exchange is a weak constraint on the activity. Drawing nearer to the bottom of this schema reinforces the role of the referent in the co-constitution of meaning. The further down a strategy is positioned on the scale, the more the propositional content reflects a convergence upon a mutually precise goal in the Selves of both interlocutors; dialogue involves strong interlocutory referential shifting.

Now one is in a position to portray the person–machine relationship with this schema by replacing the human being that $S_2$ represents by the machine. But should one? And yet many designers insist upon integrating the machine into a model of communication in this manner. In fact, where would the forced interview be placed on the schema? The concepts of input and output as well as noise have no role in modeling the systemic autonomy of dialogism, and therefore forced interviews should be formally prohibited from our research program.

But to the dismay of numerous interface researchers, these concepts remain hauntingly present in their overall view of the HCI discipline. As long as we look upon the user–machine relationship in a half human and thus divided perspective, we will be dealing with profound indetermination; it is impossible for entities to generate the experience of the other with its own (different) elements. Focusing on their organization systemically renders possible the breaking of ties with linear causality in order to conceive of causal loops. Thanks to this kind of retroactivity, an internal recursive logic regulates the user and frees him from his environment (Dupuy & Dumouchel, 1983). Completing the loop then necessitates the study of the user-device relation as a process—having traits of a demand-supply-demand-supply . . . type—anchored in the biological essence of the user. But how can an artefactual structure “count” as a living entity? How can the machine cease to be an innovation having a curt history, a system that stands apart from the user, in order to be perceived as an integral component of the human process? Overcoming this is paramount to creating a genuinely dialogical theoretical framework thus enabling the designer’s eye of the intellect to perceive the Machine as evolving with the user, as an answer to Man’s transforming vital needs. We are now capable of envisaging a research program that places the Machine as a component within that autopoietic milieu, our very own society.

However, in order to further my enquiry, I obviously must decline from investigating questions on the “person–machine relationship” as it has been defined to date for, in reality, the machine alone cannot be the dialogical sub-system in opposition to the user. In our systemic schema, I propose that $S_1$ represent the community of users and $S_2$ represent the entire process satisfying his biological needs, amongst which currently implemented interfaces are found.

Interface is rarely looked upon as one of the human race’s biological requirements because the vast interrogation thereupon is generally relatively new when compared with other biological requirements, already quite commonplace. This fact does not stop the biological evolution involving interface and society from being an historical phenomenon. Twenty years ago, it was impossible to imagine the “birth” of all the devices available on the market today. The reproduction of machines is not carried out on the basis of unchanging HCI models, as we often encounter devices from a succeeding generation, their look and functionality having been renewed. If transformations of this kind are not accounted for, we will remain at a stage of analysis where the Machine is uncoupled
from its "genetic codification," the mechanism producing it being external to its reproductive process. On the other hand, the Machine can be embedded in an autopoietic network if, and only if, it is taken to be totally subordinated to maintaining this latter network. Seen in a historical context, it is clear that a kind of auto-reproduction is involved here as transformation of the interface depends on the autopoiesis in the relationship between the evolution of Man and technological progress. Resorting to an historical dimension is expected here because the notion of autopoiesis has the unique goal of portraying living systems as autonomous entities that are, thanks to neighboring relations, then able to be distinguished as units within other systems. Development in this direction will help found a theoretical basis in HCI for approaching the Human-Machine Relationship.

The self-organization required to systemically circumscribe the Machine in a dialogical relationship with Humans reveals the epistemological necessity of a proper substratum to support their bonding. This confirms what was said at the outset—we think with our body as a whole—and even goes further: By realizing a machine is not an empty substratum into which the designer tries to insert the appropriate "ghost"—task-oriented human thought—this proves that the Machine Community, as an extension of the Community of Users, is a component of one single living organization which is made from molecules of protein, nucleic acids, blood, nerves, wires, circuits, metal, etc., dedicated to human action. So how does my conception of person–machine interaction differ from that of Cognitive Engineering (Norman, 1986) or the applied psychology of information processing (Card et al., 1983) if the materials in question are the same? Information processing theories establish the flow of data to and fro along a line between the CPU of the machine and the user’s brain; at any given moment, the data observed are either in the artefact or in the user; the analytical slices are thus vertical. But which way? Along the CPU-brain line, the first slice contains CPU; the second, screen; the third, the hands of the user; another, his eyes; and the last, his skull, sort of like sliced bread. Of course, this loaf-like model could be cut thinner. But imagine rotating the cutting board upon which a second unsliced loaf lies, to see it from the end. Slicing this one lengthwise, the slices would still be vertical but perpendicular to those of Card, Moran, and Newell. Each and every slice would contain both machine and user ingredients. One slice would cut across the left part of the CPU, screen and keyboard of the machine as well as across the left hand, eye, and speech zone in the parietal lobe of the user. Conceptually slicing things in this manner relies on the temporal embedding of the Machine within the autopoietic network of society, allowing not-so-often associated materials to form a unique substance. Noticing that this substance continually transforms and that new qualities emerge through time helps designers conceive of the system’s evolution and gives meaning to their activities. Our daily sayings show relevance to the dialogical relationship of such moist engineering: “They constructed the network this way in order to avoid the pilferage of all top-secret data,” “we needed to do banking in the evening so they invented automatic bank tellers,” “running a search on the library’s database will enable you to access information quicker.”

The Symbiotic Nature of HCI Designer Subjectivity

Everyday I see “user ineptness” “caused” by poorly adapted HCI design. I target errors and take on the challenge of repairing them. Often I imagine myself diagnosing a problem. But is the designer that I am really present in the picture? I am unable to discern myself as a figure, for the background itself does not exist; the physical situation that I “see” belongs solely to my cognitive realm. Total immersion, I am therefore unaware of alternative diagnoses to those of my own. My own cognitive closure is inaccessible. As an imaginary user, my building of
plans for action is just as limited for the same reasons. Nonetheless, these designer–user interactions within me—the traditional intuitive basis for the design of many computer systems (starting from their prototypes)—set the stage for immediate confrontation between HCI problems and remedies. Confined within, can interactions between states of mind perform well?

Cognitive scientists like Norman use an enhanced approach. To master the issues of objectivity, they observe “non-techies” in action. This undoubtedly constitutes a better framework for recovering the characteristics of situated cognition concerning public users en masse. In The Psychology of Everyday Things (Norman, 1988), the person–object analogy was successfully exploited to optimize “dialogue” design, thereby rocking the habitually used person–person analogy to its very foundations, long time accepted, rarely questioned. Although this constitutes leaping progress, it only modifies the states of mind involved in HCI design, still yielding nothing other than interactions between poles of disunion in the cognitive realm of the designer, only this time three inner roles are sustained: Psychologist, atypical user, and typical user.

Perhaps any (relatively short-term) progress is satisfying for most designers and that more is not now perceptible. But what if in explicitly exploring the (inescapable?) HCI Self through introspection, the foreshadowing of a future dimension of HCI Science could be obtained?

It could then be said that my acts as a designer compensate for the perturbations I experience in “dialogue” analysis. However, when I perceive of a perturbation seemingly originating in inappropriate machine behavior vis-à-vis users, I cannot make sense of it unless other perturbations—budgetary, deadline, philosophical, etc.—come into play; a perturbation on its own is nonsensical insofar as it cannot be evaluated in correct proportion. Situated amongst these other perturbations, the real import of an inappropriate user–machine “dialogue” is withheld to be subaltern. In fact, just how noteworthy is it? The very existence of troubles experienced in a community of users, in being designer-evaluated, has become inseparable from the autonomy of the HCI design community.

The renewing of my design status peaks over the horizon. As a soldier in the ranks of an HCI design system, perceiving the system as other than a march towards simulating human thought processes was difficult. But by operating as observer, distinguishing these classical methods of conception from the total flux of design activities today will become possible. Lucidity due to mere interaction between states of mind is not the issue, for I am no longer designer nor user: I am metametalepic—transfiguration. I am finished with the dubious game of categorizing my knowledge as that of a linguist, psychologist, engineer, accountant, typical or atypical user, etc., for it severs me from the synthesis of its whole. All designers possess a little of each. Henceforth, my designership disembodies the worries of my being categorized by the

Other according to the interactions he would see in me (i.e., Human-Factors-psychologist/atypical-user or Software-Engineer/typical-user, etc.); it is action born of inner dialogue and thus based on all the perturbations my subjective states are currently undergoing.

Such transformation in the introspective states of the HCI designer yields results. For example, at this stage I notice a complementary structure that is paradoxical. Throughout user–machine “communication,” there are really two user–machine “communications,” that which 1) tries to be human, and that which 2) resists humanization. Within this wider scope, I can study the group of “communications” laying claim to being human as a mechanism, self-organizing in nature, and having its own internal coherence. And rightly so, as this unit obviously “thinks” in the first person; it constructs a plan, acts according to it, performs self-evaluation, distinguishes between what is of Man and non-sense. But if this was the HCI Self, it could not have existed in isolation. The autonomy of classical design techniques depends heavily upon user–machine exchanges that defy the efforts of people working in HCI. The progress proclaimed in the field of Natural Language Processing is an example of this. In spite of a big surge in this domain since the end of World War II, it had nonetheless been subjected to the Other’s scrutiny—people in the field having the special status of observer—when the famous ALPAC report condemned the enterprise. Autonomy is a relational concept that links together such standard approaches founded on simulation—the humanization of the interface—with new approaches freshly forming a complement to users (and thus non-human) for the design of the “interactive faculty” of possibly all artefactual structures. The negation of humanization in conceptual HCI activities is a notion that has effectively been proven useful for reducing the mystery of the “ghost” behind the front panel or inside the screen of today’s automatons for the general public—typically, non-initiated users (Schmidt, 1995a; Norman, 1988). The paradox is extended to users as, on the one hand, some people experiment with today’s devices and find them insufficient saying, “you can’t outdo a human,” but on the other, some remain only potential users, awestruck by robots and machines. The proper attribution of propositional attitudes is the key to optimal exchange, especially for this latter (immensely larger) portion of users.

A system is never presented to the observer. He finds it. In becoming metasystemic—by reaffirming the synthesis of my belonging to several social systems mentioned above, I define a new position wherefrom I not only notice the propagation of this paradox, I recognize the relationship between design activities and Person–Machine Conjugation; this enables observation of the undesirable. User-friendliness—Computer Science jargon that implicates the humanization of artefacts—for a long time has had a stabilizing effect on the conduct of designers. In my view, it restricts the individual designer’s cre-
activity. To take things to the extreme in which the human–human design analogy would be so imposing that it strongly dissuades from seeking other types of alternatives, this stabilization would be equal to totalitarianism in the land of interface innovators.

By introducing notions such as the non-humanization and the dehumanization of interface, my conduct becomes out of the ordinary, and my work out of sync with my fellow workers. However, epistemological shifts yield successes that otherwise would have been without hope; if we all remain surrendered to ‘‘convivialism,’’ there would be no observation in this field and no dissidents to incite others to take it up: Hence conceptual stagnation. By proclaiming to be an observer, I do not pronounce my own excommunication. On the contrary, to mature within the community of ‘‘dialogue’’ designers is to tend to maintain relations with it through its transformation, and for its transformation, that renews the identity and confirms the role of HCI design. In this way, ‘‘to design’’ remains ‘‘to create.’’

**Conclusion**

The endeavor to establish a via media between Software Engineering and Human Factors by drawing on their intra-theoretical similarities from Cognitive Science brings us full cycle to seeking light in extra-theoretical questioning. This is due to the fact that these two disciplines study entitiesable to have distinct characteristics. The general systemological philosophy of dialogism being the approach invoked, a preliminary sketch to expressing the transdisciplinarity of HCI designer experience was achieved.

Since humans can become conversationalists, dialoguers, negotiators at will (terms defined above), it has become the norm in the computing field to draw the Machine nearer to what humans are. This however creates the vicious circle of trying to render the duo’s decidedly rigid language into a real person–machine conversation. Nothing proves this is possible. After much work, the nature of dialogism remains absent from the user–machine relationship in its traditional perception (forced interview). It has been established that the terminology in HCI literature pertaining to this relationship is misleading for philosophers.

The outcome of this study is that there exists a second meaning to the term ‘‘Human–Computer Interaction.’’ Human–Computer Interaction in its strict sense, the sense habitually known to most designers, places a machine on its own opposite a user in order to respond to his request. Attempts were made to firmly define a newer and more extensive meaning of this term, one that is genuinely worthy of dialogism with the goal of helping the designer to conduct his enquiry while accounting for his own influence, significant indeed. Further treatment of this definition is under way (cf. Schmidt, ‘‘The Pragmatics of Dialogism,’’ forthcoming).

Traditionally, analysis divides a system into heterogeneous components to the detriment of the very relations essential to their characterization as efficient components of the system. Analyzing the coupling of person and machine often means disregarding the distortion introduced by the designer as he carries out diagnosis. Systemics, on the other hand, was adopted in order to discover the emerging qualities of a holistic system that also brings the designer to center stage. Tackling the problem in this manner in no immediate way helps with practical implementation concerns; it is purely aimed at seizing the possibilities of moderatorship in the HCI field that many designers would have if they acquired the status of observer. I was able to show how reflexion about my own profession can flourish when the shackles of ‘‘situated cognition’’ are momentarily set aside, and also draw attention to just how much HCI Designership is consequential to subjectivity.

My hope was to have obtained a certain clairvoyance about the field of HCI as a whole, by admitting that my own Self constitutes a non-negligible influence in the design process on the one hand, and on the other, by not succumbing to the psychological repression of the ‘‘State of User-friendliness’’; for in safeguarding the intellectual assets of a global view of the HCI community, creative inspiration in HCI practices can once again come to be. As a consequence, on a scale currently restricted to this technical domain, our notion of non-human falls into line with the those of hazard, complexity, self-reference, paradox, etc., all of which the integration into scientific program has been suggested by the self-organization theorists (Dupuy & Dumouchel, 1983). The advent of semi-human design metaphors strongly suggests that it fits there. But as shown, I did not introduce this novelty into HCI for the benefit of bipolar metaphors, but rather for their abatement; my conviction is sustained in the reconnaissance of the specificity of human communication, as opposed to machine–machine or human–computer information exchanges. As Jacques would say,

A model attains its extreme limit of relevance when it is abusively extrapolated. . . . How is one to take realities as different from one another as the physical transfer of information and the genesis of verbal messages and label both as communication? (Jacques, 1985, p. 190, translated by author).

The quest for an autopoeitic foundation of the hither and thither between person and machine endeavours above all to insert the components of the person–machine relation into the biogenesis of homo sapiens—the synthesis of chemical substances (in machines, users, and designers) by living matter (the designer). Successfully refuting the segregation of artefactual structures from living systems is a conceptual must for initiating a Science of the Human–Machine Relationship, or even just for making sense out of our daily activities so precise to future encounters between our software and the Other.


