

Human-Centered Design as a Fragile Encounter

Marc Steen

Many innovations in the information and communication technology (ICT) industry are driven by technological developments, rather than by concerns for users' needs and preferences. This *technology push* approach brings a risk of creating products or services that people cannot or do not want to use. In some projects, however, people conduct human-centered design (HCD) as an alternative approach. In HCD, diverse experts, such as designers and researchers, cooperate with potential users—who are “experts of their experiences”¹—to bring users' ideas and knowledge into the innovation process and to jointly articulate problems and develop solutions.

The term HCD is used here to refer to a broad range of approaches, including participatory design, the lead user approach, co-design, ethnography, contextual design, and empathic design.² HCD is based on four principles: 1) involving users to better understand their practices, needs, and preferences; 2) searching for an appropriate allocation of functions between people and technology; 3) organizing project iterations in conducting the research and generating and evaluating solutions; and 4) organizing multi-disciplinary team work.³

Kujala, in her review of the benefits and challenges of early user involvement in the ICT industry, concluded that “User involvement is clearly useful and it has positive effects on both system success and user satisfaction.”⁴ However, she adds that “Involving users is not an easy task for designers. Early involvement of users appears to be promising, on the condition that user involvement methods are developed further and the roles of users and designers are carefully considered.”

Indeed, realizing the principles of HCD in practice is “not an easy task.” In projects on which I have worked, I experienced tensions between HCD principles and HCD practices, and I expect others to have had similar experiences. For example, when we conduct *participatory* design, we usually set an agenda for a workshop with users. This agenda steers users' participation; as a consequence, we might miss topics that are not on our agenda but are nevertheless relevant to the users and to the project. When

- 1 I. F. Sleeswijk Visser, P. J. Stappers, R. Van Der Lugt, E. B. N. Sanders, “Contextmapping: Experiences from practice,” *CoDesign* 1:2 (2005): 119-49.
- 2 M. Steen, “Tensions in Human-centered Design,” *CoDesign* 7:1 (2011): 45-60.
- 3 ISO, ISO 13407: *Human-Centred Design Processes for Interactive Systems* (Geneva, Switzerland: ISO, 1999).
- 4 S. Kujala, “User Involvement: a Review of the Benefits and Challenges,” *Behaviour and Information Technology* 22:1 (2003): 1-17.
- 5 M. Muller, “Participatory Design: The Third Space in HCI,” in *The Human-computer Interaction Handbook: Fundamentals, Evolving Technologies and Emerging Applications*, J. Jacko and A. Sears, eds. (Mahwah, NJ: Lawrence Erlbaum Associates, 2002) 1051-68.
- 6 M. Steen, *The fragility of human-centred design*, PhD dissertation (Delft University of Technology, 2008).
- 7 For a discussion of combining design practice, design study, and design exploration, see, e.g.: D. Fallman, “The Interaction Design Research Triangle of Design Practice, Design Studies, and Design Exploration,” *Design Issues* 24:3 (Summer 2008): 4-18.
- 8 B. Latour, *Science in Action: How to Follow Scientists and Engineers Through Society* (Milton Keynes, UK: Open University Press, 1987).
- 9 W. Bijker, T. Hughes, and T. Pinch, eds., *The Social Construction of Technological Systems* (Cambridge, MA: MIT Press, 1987).

- 10 J. Ingram, E. Shove, and M. Watson, "Products and practices: Selected concepts from science and technology studies and from social theories of consumption and practice," *Design Issues* 23:2 (Spring 2007): 3-16; and E. Woodhouse and J. W. Patton, "Design by society: Science and Technology Studies and the Social Shaping of Things," *Design Issues* 20:3 (Summer 2004): 1-12.
- 11 B. Latour, *Aramis, or the Love of Technology* (Translated by Catherine Porter) (Cambridge, MA and London, UK: Harvard University Press, 1996); M. Akrich, M. Callon, and B. Latour, "The Key to Success in Innovation—Part 1: The art of interresement," *International Journal of Innovation Management* 6:2 (2002): 187-206; and M. Akrich, M. Callon, and B. Latour, "The Key to Success in Innovation—Part 2: The Art of Choosing Good Spokespersons," *International Journal of Innovation Management* 6:2 (2002): 207-25.
- 12 K. Knorr Cetina, "Laboratory studies: The Cultural Approach to the Study of Science," in S. Jasanoff, G. E. Markle, J. C. Petersen, and T. Pinch, eds., *Handbook of Science and Technology Studies* (London, UK: Sage, 1995), 140-66; and B. Latour and S. Woolgar, *Laboratory life: The Construction of Scientific Facts* (2nd ed.) (Princeton, NJ: Princeton University Press, 1986).
- 13 L. Haddon, E. Mante, B. Sapio, K.-H. Kommonen, L. Fortunati, A. Kant, eds., *Everyday Innovators: Researching the Role of Users in Shaping ICTs* (Dordrecht, The Netherlands: Springer, 2005); B. Edvardsson, A. Gustafsson, P. Kristensson, P. Magnusson, and J. Matthing, eds., *Involving Customers in New Service Development* (London, Imperial College Press, 2006); N. Oudshoorn and T. Pinch, eds., *How Users Matter: The Co-construction of Users and Technology* (Cambridge, MA and London, MIT Press, 2003); and H. Rohracher, ed., *User Involvement in Innovation Processes: Strategies and Limitations from a Socio-technical Perspective* (Munich, Germany and Vienna, Austria: Profil Verlag, 2005).

we conduct *empathic* design, we bring a specific interest to an interview and focus on topics that seem to be directly relevant to our project. As a result, however, we might overlook aspects of users' experiences that are important to them but that might seem, at first glance, to be "off-topic." In such cases, we might miss the kind of participation and input from users that we are looking for; HCD can help us to "*learn something that we didn't know we needed to know.*"⁵

Such experiences motivated me to study what happens in HCD *practices* and how the practices differ from HCD *principles*. Based on experiences in two projects, in which I worked and in which I studied as participant observer,⁶ I explored an alternative view of HCD.⁷

Science and Technology Studies

The study presented here can be situated in the field of science and technology studies (STS), a multi-disciplinary field in which social scientists, historians, philosophers, and others examine how people create and apply science and technology. People engaged in STS try to open the "black box"⁸—to show what normally remains hidden and thus to reveal how science and technology are created and applied. They are interested in the "social construction"⁹ of technology—in the ways people interact and negotiate with each other while they construct and apply artifacts. Knowledge from STS (e.g., about users' roles and social practices) can be used to improve design practices, and to discuss the role of design in a broader societal and political context.¹⁰

A dominant perspective in STS is actor-network theory (ANT), in which the creation or application of science or technology is conceived of as a process in which different actors (or *actants*, to include not only people, but also things) form a network and influence each other, as well as the science or technology that is being created or applied.¹¹ In an HCD project, we can easily imagine that users have less influence than the project team members, who bring their agenda and their focus to workshops and interviews with users.

Since the early "laboratory studies,"¹² which focused on scientists' or engineers' practices, the scope of STS has widened. STS scholars now are also interested in, for example, the roles of users in innovation processes.¹³ This study reflects and corresponds with this trend because the focus is on how HCD practitioners interact with users and with other project team members,¹⁴ with the goal of opening the "black box" of HCD.¹⁵ Thus, my approach is similar to a socio-cultural perspective, which, for example, Bucciarelli developed to describe design as a process of people interacting and negotiating with each other.¹⁶ In the next section, I explore an alternative perspective on design that complements the current ANT and socio-cultural perspectives.

- 14 Please note that, in my study of these projects, I focused on the practices of project team members, whereas in the projects studied, we tried, of course, to focus on users.
- 15 This study fits into a trend to move from studying design practices in laboratory settings toward studying design practices “in the field.” This trend can be illustrated by a series of PhD dissertations from Industrial Design Engineering of Delft University of Technology: K. Dorst, *Describing design: A comparison of paradigms*, 1997; R. Valkenburg, *The Reflective Practice in Product Design Teams*, 2000; M. Kleinsman, *Understanding Collaborative Design*, 2006; and F. Sleswijk Visser, *Bringing the everyday life of people into design*, 2009.
- 16 L. Bucciarelli, *Designing Engineers* (Cambridge, MA and London, MIT Press, 1994). Other examples are: N. Cross, H. Christaans, and K. Dorst, eds., *Analysing Design Activity* (Chichester, UK: John Wiley & Sons, 1996); D. Vinck, ed., *Everyday Engineering: An Ethnography of Design and Innovation* (Cambridge, MA and London, MIT Press, 2003); J. McDonnell and P. Lloyd, eds., *About: Designing: Analysing Design Meetings* (London, Taylor and Francis, 2009).
- 17 Although there are differences between these two philosophers, there are several key parallels, and their philosophies can be combined productively. See: S. Critchley, *The Ethics of Deconstruction: Derrida and Levinas*, 2nd ed. (Edinburgh: Edinburgh University Press, 1999): 9-13.
- 18 Philosophers often use words in particular ways. For a discussion of Levinas’s use of “autre/Autre” (“other”) and “autrui/Autrui” (“Other”), see, e.g., Critchley: *The Ethics of Deconstruction*: 8. For a discussion of Derrida’s use of “différance,” see, e.g., J. Derrida, “From ‘Différance’ in Margins of Philosophy” in *A Derrida reader: Between the blinds*, P. Kamuf, ed. (New York: Columbia University Press, 1991): 59-79.
- 19 J. Keulartz, M. Schermer, M. Korthals, and T. Swierstra, “Ethics in Technological Culture: A Programmatic Proposal for a Pragmatist Approach,” *Science, Technology, & Human Values* 29:1 (2004): 3-29.

Exploring Ethics

On the basis of participant observations of HCD practices, as well as on the works of French philosophers Emmanuel Levinas (1906-1995) and Jacques Derrida (1930-2004),¹⁷ I explore an alternative perspective on HCD. I propose understanding HCD as a process in which diverse people participate and move between *other* and *self*, and between *openness* and *closure*. I see HCD as a *fragile encounter* between people, as an encounter that can be beautiful, and as an encounter that can easily break.

Importantly, in drawing from Levinas and Derrida, I introduce a specific type of ethics that is different from, for example, deontological ethics (which focuses on moral rules, duties, and reasoning), or consequentialist ethics (which deals with the positive or negative consequences of moral choices). The ethics of Levinas and Derrida are primarily concerned with the encounter between *other* and *self*, and with *otherness* or *différance*.¹⁸ In the ethics of Levinas and Derrida, we always find ourselves within *other-self* relations—within ethical relations.

Both practical and theoretical motivations are behind this choice. Practically, I want to move away from the language of ANT, which is derived from “war and power struggles” and speaks of “allies and opponents, strategic negotiations, and tactical manoeuvres.”¹⁹ Instead, the tradition of participatory design²⁰ is more appealing to me, in that it conceptualizes power within a context of striving for democracy, participation, and emancipation. My goal is to foster cooperation in HCD projects, rather than promote competition, and to encourage HCD practitioners to reflect critically on their own practices and to better align these with the potential of HCD.

Theoretically, I want to explore an alternative perspective on design that draws attention to the ethical aspects of HCD. This move can be understood as a response to Winner’s²¹ critique of studies in STS regarding their lack of attention to ethics and their “apparent disdain” for moral questions. Van de Poel and Verbeek similarly proposed to “perform a context-sensitive form of ethics”²²—to study people’s situated and actual practices in a design process, rather than studying the ethical consequences of the outcomes of a design project (as is commonly done).

Deconstructing Human-Centered Design

My study aims to *deconstruct* HCD in the sense of Derrida’s approach to deconstructing texts.²³ Such deconstruction involves reading between the lines, questioning implicit assumptions and dominant meanings, exploring alternative readings, and writing these in the texts’ margins. In my case, I questioned assumptions implicit in current practices and explored alternative practices.

A key assumption in HCD is that HCD practitioners can be *open* toward *others*, so that they can jointly learn and create—that they can be open both toward users and their experiences and toward co-workers and their backgrounds (ISO 1999, HCD principles 1 and 4). Furthermore, HCD assumes that project iterations can be organized that productively combine divergent, generative phases (toward *openness*) and convergent, evaluative phases (toward *closure*) (HCD principle 3). Moreover, HCD assumes (in this context of user involvement, multi-disciplinary teamwork, and project iterations) that decisions can be made about what the product can do and how people can use it (HCD principle 2). In the next two sections, I examine and interpret these assumptions by using texts of Levinas and Derrida as a lens, by providing examples from two HCD projects, and by exploring alternative practices.

In these two projects, the goal was to develop innovative telecom applications for two different user groups in close cooperation with them: one for police officers and another for informal carers. The projects combined *technology push* (the ambition to develop telecom applications) and HCD (the ambition to cooperate with potential users).

Developing Knowledge: Other and Self, Grasping and Desire

Another key assumption in HCD is that the people involved can jointly learn new things—that they can, for example, develop knowledge about users and their experiences. However, being *open* toward *others* and learning new things can be hard. Several of Levinas's texts can help to discuss this process of developing knowledge.

Throughout his oeuvre, Levinas is concerned with the difficulties of relations between people and the violence that so often occurs between them. He argues that people tend *not* to see the *other* as *other*, but as an object, and to reduce what they see and hear from the other to concepts with which they are already familiar. This tendency can lead to "*the reduction of the other to the same:*" "*The foreign being ... becomes a theme and an object. ... It falls into the network of a priori ideas, which I bring to bear, as to capture it.*"²⁴ He characterizes this tendency as a grasping gesture: We pull the other into our own way of thinking: "*Knowledge remains linked to perception and to apprehension and to the grasp.*"²⁵ Levinas describes the *self*, which he refers to as "*the I of knowledge,*" as a "*melting pot where every Other is transmuted into the Same.*"²⁶ Thus, in an attempt to develop knowledge, the *self* grasps the *other* and draws the *other* into her or his own "*melting pot,*" which makes learning anything new very difficult.

-
- 20 P. Ehn, *Work-oriented Design of Computer Artifacts* (Stockholm, Sweden: Arbetslivs centrum, 1988); J. Greenbaum and M. Kyng, eds., *Design at Work: Cooperative Design of Computer Systems* (Hillsdale, NJ: Lawrence Erlbaum, 1991); and D. Schuler and A. Namioka, *Participatory Design: Principles and Practices* (Hillsdale, NJ: Lawrence Erlbaum, 1993).
- 21 L. Winner, "Upon opening the black box and finding it empty: Social constructivism and the philosophy of technology," *Science, Technology, & Human Values* 18:3 (1993): 362-78.
- 22 I. Van de Poel and P.-P. Verbeek, "Ethics and Engineering Design," *Science Technology, & Human Values* 31:3 (2006): 223-36.
- 23 J. Derrida, "Letter to a Japanese friend" in *A Derrida reader: Between the blinds*, P. Kamuf, ed. (New York: Columbia University Press, 1991): 270-6.
- 24 E. Levinas, "Philosophy and the Idea of Infinity," in *Collected philosophical papers* (Dordrecht: Martinus Nijhoff Publishers, 1987): 48, 50.
- 25 E. Levinas, "Transcendence and Intelligibility," in Emmanuel Levinas: *Basic Philosophical Writings*, A. Peperzak, S. Critchley, and R. Bernasconi, eds. (Bloomington and Indianapolis: Indiana University Press, 1996): 152.
- 26 E. Levinas, "Transcendence and Height," in *Emmanuel Levinas: Basic Philosophical Writings*, A. Peperzak, S. Critchley, and R. Bernasconi, eds. (Bloomington and Indianapolis: Indiana University Press, 1996): 13.

HCD practitioners cannot escape this tendency. Their interests and ambitions, their methods and skills, and their knowledge and ideas (e.g., their *selves*) make them filter what they see and hear from users and co-workers (e.g., the *others*). This tendency to grasp is illustrated with several examples from the police project.

In this project, we conducted a series of four co-design workshops with different groups of police officers. Based on the findings from each workshop, we gradually changed our project's focus and eventually developed a mobile telecom application that promotes cooperation between police officers. It does so by automatically making suggestions to share "implicit knowledge" between police offices to improve the quality of police work. This type of adaptation of a project, based on interactions with users, is considered good practice in HCD.

Nevertheless, we also missed several opportunities to learn from police officers and to let their ideas significantly influence the project. In the interactions between us (the project team members) and them (the police officers), we often privileged our own ideas over theirs. For example, in the first workshop, we jointly explored and articulated four areas that they (the police officers) experienced as problematic. After the workshop, however, we (the project team members) chose to focus on the one area that was comfortably close to our ambition to develop a telecom application. As a consequence, we ignored the other areas relevant to the police officers, such as the problems they experience with systems they use to share and access information, and their experiences of struggling with their professional roles and the organizational culture.

Another example comes from the second workshop, in which we discussed our observation of police work (conducted some weeks earlier) to validate our findings. In this workshop, the police officers confirmed the problems we had identified. In addition, they wanted to discuss some practical problems, such as their need to have laptops in their cars to access information remotely. We responded that our project focuses on developing innovative telecom applications and not on their current practical problems. We privileged our ambitions over their practical needs.

These examples illustrate a question that HCD practitioners often face: How do we balance users' concerns with the project's ambitions. This question is central in the participatory design tradition. Based on Levinas, this tension can be rephrased: How do we balance the ambition to be *open* toward the *other* with the tendency to *grasp* the *other*, and to privilege the *self* over the *other*?

Applying these ideas to HCD, I propose that as HCD practitioners we need to try to be *open* toward *others*. Meanwhile, we also need to bring our *selves*: our interests, ambitions, methods, skills,

knowledge, and ideas. I suggest that we often are unaware of the tensions that occur between *other* and *self*, and of our tendencies to privilege the *self* over the *other*. Moreover, I propose that we can try to become more aware of these tensions and tendencies, so that we can learn to better balance *other* and *self*. One suggestion for doing so comes from Levinas himself. He envisions the possibility of trying to escape the gesture of *grasping*—which is aimed at satisfaction of the *self* at the expense of the *other*—through a form of *desire* aimed not at satisfying the *self*, but at respecting the otherness of the *other*: “This desire is unquenchable, not because it answers to an infinite hunger, but because it does not call for food. This desire without satisfaction hence takes cognizance of the alterity [otherness] of the other.”²⁷

Making Decisions: Openness and Closure, Programming and Passivity
Not only do HCD practitioners need to move toward *openness*, toward other people’s experiences, knowledge, and ideas (divergence); they also need to move toward *closure*, drawing conclusions and delivering results (convergence). Making decisions is critical to combining *openness* and *closure* because making decisions is a way to create closure and to make progress. We explore directions for developing solutions and then choose one, or we generate ideas and then select one. Reading some of Derrida’s texts can help to explore an alternative view on the process of making decisions.

Derrida remarked that genuine decisions are “exceptional” decisions: “a decision that does not make an exception, that does nothing but repeat or apply the rule, would not be a decision.”²⁸ One cannot make a genuine decision by merely applying knowledge or simply following rules: “It is when it is not possible to *know* what must be done, when knowledge is not and cannot be determining that a decision is possible as such. Otherwise, the decision is an application: one knows what has to be done, it’s clear, there is no more decision possible; what one has here is an effect, an application, a programming.”²⁹ Furthermore, Derrida observed that people often try to *program* innovation and argued that this can lead to “the invention of the same.”³⁰ Because of this tendency to *program* innovation, we tend to stay within our own comfort zone, to move toward *closure*, rather than toward *openness*, which makes it hard to get out of the box and create anything new. The difficulty of combining *openness* and *closure* and the tendencies to *program* innovation are illustrated here with examples from the informal care project.

In this project, we cooperated with informal carers—more specifically, with people who provide “primary” informal care for people who suffer from dementia and who live at home, often their husband or wife. In this case, different project team members

27 E. Levinas, “Philosophy and the Idea of Infinity,” 56.

28 J. Derrida, “Deconstructions: The Im-possible” in *French Theory in America*, S. Lotringer and S. Cohen, eds. (New York and London: Routledge, 2001): 29.

29 J. Derrida, “Dialanguages” in *Points... Interviews, 1974-1994*, (Stanford, Stanford University Press, 1995): 147-8.

30 J. Derrida, “Psyche: Inventions of the Other,” in *Reading de Man Reading*, L. Waters and W. Godzich, eds. (Minneapolis, University of Minnesota Press, 1989): 46, 55.

followed different approaches to talk with potential users about their daily lives and their needs. Some project team members who were familiar with dementia and informal care conducted a questionnaire-based survey (within a psychology tradition). They interviewed hundreds of people with dementia and their “primary” informal carers to generate a representative overview of their needs. In parallel, other project team members, for whom dementia and informal care were relatively new areas, conducted informal co-design interviews (within a design tradition) to inform and inspire their creative process. Both approaches are attempts to move toward *openness*, to learn from potential users. However, they are also moves toward *closure*—drawing conclusions about people’s needs and creating products for them.

Because of our chosen methods (from psychology and from design), we tended to move toward *closure* rather than toward *openness*. The people involved in the survey used questionnaires, and the respondents’ utterances had to fit into the questionnaire’s categories. Meanwhile, the people involved in the co-design interviews started with the ambition to create a telecom application, and this ambition influenced the way the interviews proceeded. HCD practitioners bring their methods to the encounters with others as a way to focus, to stay on track, and to move toward *closure*.

Because of the different methods used for conducting the interviews, the findings were also hard to combine within the project team. Moreover, the different approaches to making decisions were hard to combine. Coming to agreement about which target group to focus on and which need to address took considerable effort by the project team. The people involved in the survey (who had lots of experience with dementia and informal care) advocated focusing on the informal carers’ needs and developing a telecom application that to help informal carers share tasks with others, to alleviate their burden. Such an application would prevent “primary” informal carers from burning out and thus would improve the quality of life for both the informal carer and the care receiver who has dementia. In contrast, the people involved in the co-design interviews advocated focusing on the needs of the people with dementia—probably because they were moved by these people’s condition and their needs (which were relatively new to them).

I suspect that HCD practitioners are not always aware of the effects that their backgrounds and methods have on the decision-making process; of the tensions that occur between *openness* and *closure*; and of their tendencies to *program* innovation and to favor *closure* over *openness*. Moreover, I propose that by trying to become more aware of these tensions and tendencies, they might find a better balance between *openness* and *closure*. Derrida offers a suggestion of how to do so. Similar to Levinas, Derrida advocates

welcoming the *other*—trying to let the other surprise you—to escape the tendency to program: “To invent would then be to ‘know’ how to say ‘come’ and to answer the ‘come’ of the other.”³¹ Such an approach would be an active form of passivity because trying *not* to make the other into a theme within our own “program” requires an effort: “Letting the other come is not inertia open to anything whatever. No doubt the coming of the other ... escapes from all programming.”³²

Advocating for Reflexivity

HCD can be understood as a *fragile encounter*—an encounter with inherent tensions, in which people try to move toward the *other* and toward *openness* but in which their tendency is to move toward the *self* and toward *closure*. We often are not aware of these tensions and moves, which makes it hard to counter these tendencies. Several suggestions offered can help HCD practitioners to realize more of the potential of HCD. These suggestions extend our current attempts to be sensitive and responsive to the people we interact with: both to potential users and to other project team members. We who are HCD practitioners can try to become more aware of the moves we make between *other* and *self*, and between *openness* and *closure*, and of our own roles in the HCD process. Being more aware of these moves and roles might help us try to bring about two important changes: 1) engaging with a form of *desire* that is open to the other, we may counter our tendencies to *grasp* the other and, in doing so, facilitate joint learning; and 2) engaging with a form of *passivity* that welcomes otherness, we may counter our tendencies to *program* innovation and, in doing so, facilitate joint creativity.

As HCD practitioners we can try to better balance our own interests, ambitions, methods, and skills with users’ and co-workers’ interests, ambitions, methods, and skills. We can organize workshops or interviews with a more open mindset. We can, of course, continue to use agendas or checklists, as long as we recognize how these methods influence the process and our roles in the process. My suggestions boil down to advocating reflection (on the HCD process) and reflexivity (concerning one’s own role in this process). Such advocacy is not new to people in the tradition of participatory design.³³

What, then, might HCD look like? I invite you to try this: Close your eyes and imagine yourself participating in a workshop with potential users and other project team members. You are aware of the project’s goal to design a product and of your own ambitions and skills. You want to create things and make progress. But you also try to be open toward the others as you put your own knowledge and ideas on hold. Imagine them as secondary. You catch yourself trying to formulate conclusions and envision solutions and try to counter these. For the moment, you notice that you are leaning

31 J. Derrida, “Psyche: Inventions of the Other,” 56.

32 J. Derrida, “Psyche: Inventions of the Other,” 55-6.

33 E. Beck, “P for Political: Participation is Not Enough,” *Scandinavian Journal of Information Systems* 14:1 (2002): 77-92; S. Bødker, “When Second Wave HCD Meets Third Wave Challenges,” *Proceedings of NordiCHI 2006*, October 14-18, 2006, Oslo, Norway (2006) 1-8; J. Gulliksen, Ann Lantz, and Inger Boivie, *User Centered Design in Practice: Problems and Possibilities* (Stockholm, Royal Institute of Technology, 1999); and R. Markussen, “Dilemmas in Cooperative Design,” *Proceeding of Participatory Design Conference* (1994) 59-66.

forward, opening your mouth to say something. Then you pull back, close your mouth again. You breathe slowly in, and out. You look at the other and you listen to her. You become curious about her, and you begin to wonder. What would it feel like to experience what she talks about? You begin to appreciate her participation. You are interested in her perspective and ideas. You empathize. You feel less hurried, and you are aware of the flow of the meeting, of what happens in the encounters between the people present, between others and you.

This scenario would come close to what HCD practices can be: encounters between people in which they can jointly learn and jointly create.

Acknowledgements

The author would like to thank Pieter Jan Stappers and Ilpo Koskinen for their helpful comments on earlier drafts of this paper, Jan Buijs and Hugo Letiche for supervising the PhD research on which this paper is based, and fellow project-team members for their cooperation and their kind permission to study and write about the project. The project was conducted in the Freeband research program, which was supported by the Dutch Ministry of Economic Affairs under contract BSIK 03025.