

UPON OPENING THE BLACK BOX OF PARTICIPATORY DESIGN AND FINDING IT FILLED WITH ETHICS

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ABSTRACT

In this essay, I bring together Participatory Design's (PD) tradition of critical reflection on one's own practices, and Science and Technology Studies' focus on specific activities ('opening the black box'), in order to explore the ethics of PD. Three different forms of ethics—*ethics-of-the-other*, *pragmatist ethics* and *virtue ethics*—are discussed and several examples from practice are provided to argue that PD is 'filled with ethics': PD participants always find themselves in ethical situations and engage with ethics—even if they are unaware of these ethics or if these ethics remain implicit. It is proposed that reflexivity provides ways for PD practitioners to cope more explicitly and mindfully with these ethics.

UPON OPENING THE BLACK BOX

In his influential article, 'Upon opening the black box and finding it empty', Winner (1993) expressed discontent with the many studies in the field of science and technology studies (STS) that discuss technology without addressing moral questions. He appreciated that STS-ers ('social-constructivists'), with their empirical and detailed studies of the ways in which people practically develop and apply technology, 'opened the black box [of the development and application of technologies] and showed a colorful array of social actors, processes and images therein', but criticized their approach because 'the box they reveal is still a remarkably hollow one'. Many STS scholars neglect, ignore or steer away from ethical questions.

In this essay, I will respond to Winner's plea to pay more attention to ethics. I will attempt to bring together the critical reflection that has always been a part of the tradition of participatory design (PD) (Bjerknes, Ehn, and Kyng 1989; Ehn 1990; Greenbaum and Kyng 1991; Kyng and Mathiassen 1997; Schuler and Namioka 1993), and the study of people's concrete practices that has been the main method within STS (Latour and Woolgar 1986; Latour 1987; Pinch and Bijker 1987; Woolgar 1991b; Bijker and Law 1992; Knorr Cetina 1995; Rip 2000; Oudshoorn and Pinch 2003). By combining critical reflection and a focus on concrete practices, I will explore the ethical qualities of PD practices and argue that PD practices are always 'filled with ethics'. I will argue that 'to find oneself in ethical situations and to engage with ethics' is always part of PD practitioners' job descriptions—even if they are unaware of these ethics or if these ethics remain implicit.

This focus on ethics is in line with Bjerknes and Bratteteig's (1995) observation that the focus of PD has shifted from politics towards ethics. Based on a review of (typical, Scandinavian) PD projects, they argue that 'All the projects in the 70's had an explicit political bias in wanting to change the preconditions for system development ... The political system developer is an emancipator, carrying out an action programme to give the weak parties knowledge they can use to increase their power.' And 'From the middle 80's, the quest for democracy was left to the individual system developer', whose responsibility 'changed towards being a facilitator of a morally ... 'correct' system development process ... The ethical system developer is mainly responsible towards their own individual ethical codex ... promoting workplace democracy through engagement in system development situations.'

It is this kind of ethics¹ that I will be concerned with: a kind of ethics that focuses on the micro scale of PD

¹ I associate ethics with the ways in which people experience freedom and responsibility in smaller groups, e.g. in face-to-face interactions, whereas I associate politics with the ways in which power and agency are organized in larger contexts, e.g. in organizations or societies. In other words: ethics always occur within a context of politics. As a

participants, their ways of interacting and cooperating with each other, their ways of organizing research and design processes, and their thoughts and feelings.

Moreover, in my exploration below, I will focus on *specific* and *social* practices. This focus follows from the character of PD practices, which are always *specific*, in that they are concerned with developing specific problems for specific problems, rather than with general solutions for general problems, and always *social*, in that communication and cooperation between people are at the heart of PD. This is in line with Van de Poel and Verbeek's (2006) proposal to 'perform a context-sensitive form of ethics', i.e. to focus on people's specific practices within a project, rather than evaluating the ethical consequences of the outcomes of their project—as is often done in studies of ethics of design.

A TURN TO ETHICS

There is a growing interest in the relation between ethics and design, at least since Papanek's (1991) appeal to designers to turn their attention to real problems and real needs. More recently, it has been argued—e.g. under the label of *value sensitive design*—that designers attempt to embed specific values in the products that they develop, and that this embedding process should be made more transparent, so that people can more consciously participate in this process (Friedman and Kahn 2002; Albrechtslund 2007; Van de Poel 2009; Manders-Huits 2010). This line of thought is similar to notions from STS concerning designers' attempts to create *scripts* (Akrich 1995; 1992), i.e. to make prescriptions that designers put into their products in order to influence people's behaviour, and to *configure* users (Woolgar 1991a; Mackay et al. 2000), i.e. to make descriptions of users in order to define and fix users, so that they can be designed for. Designers envision new products as well as what people can do—or *should* do—with these products, which can be considered as a material form of articulating prescriptive ethics.

Another way of drawing parallels between design and ethics was put forward by Whitbeck (1998), who proposed to treat ethical problems not as rational decision problems—as well-defined problems that have a number of well-defined solutions from which one selects the best option, based on rules or reasoning, as so-called 'rational foundationalist' approaches would have it—but, instead, to treat ethical problems as ill-structured problems that need to be dealt with like how designers deal with such problems. Similarly, Lloyd (2006) noted that design thinking and ethical thinking are both concerned with envisioning and developing

consequence, the 'black box' that I attempt to open (the ethics of PD) is significantly smaller than Winner's 'black boxes', which often contained both political and ethical aspects—see, e.g. Winner's (1988) accounts of the ways in which technical systems influence people's agency, with the example of city planners that built low-hanging viaducts in New York City in order to prevent coloured people, who could not afford cars and had to use busses, to reach Jones Beach.

possibilities and with evaluating and choosing between possibilities.

Below, I will organize my argument around the notion of *design thinking*, i.e. the idea that design is concerned both with exploring and articulating problems and with exploring and developing possible solutions and that these processes are intimately intertwined: the 'design process involves finding as well as solving problems' (Lawson 2006, p. 125) and the 'problem and solution co-evolve' (Cross 2006, p. 80). Furthermore, I would like to distinguish between two elements of design thinking: 1) generating ideas and developing knowledge, e.g. when studying the problem or articulating a problem definition; and 2) making decisions and creating things, e.g. when developing and trying-out possible solutions. Moreover, I propose that, in order to understand the ethics of PD, we need to understand the ethics of the processes in which PD participants generate ideas and develop knowledge and the ethics of the processes in which they make decisions and create things.

In Western culture, there are two mainstream schools of ethics: *deontological* ethics, which are based on an understanding of one's duties and which focus on applying universal, moral rules, typically by reasoning logically; and *consequentialist* ethics, which are based on evaluating the positive and negative consequences of one's choices and which aim to maximize the positive consequences. Rather than drawing from these two schools, I chose to draw from three relatively less well-known forms of ethics: ethics-of-the-other, pragmatist ethics and virtue ethics. The main reason for this choice is that these three are typically concerned with specifics, with concrete, practical and social practices (similar to PD which is concerned with specifics, with concrete, practical and social practices), whereas, deontological or consequentialist ethics typically tend to be concerned with universal duties or with abstract rules.

ETHICS-OF-THE-OTHER

With *ethics-of-the-other*, I refer to forms of ethics that take the other and the relationships between other and self, as a starting point. Philosophers Emmanuel Levinas (1906-1995) and Jacques Derrida (1930-2004) are proponents of such ethics. Levinas wrote extensively about the encounter between other and self, and Derrida about *différance* and otherness. In their ethics one always finds oneself within other-self relations, i.e. within ethical relations.

In a PD project, different people meet and attempt to communicate and cooperate—which Levinas and Derrida would conceive of as encounters between other and self and as ethical situations. In my doctoral dissertation (Steen 2008), I studied two PD projects and, using concepts from Levinas and Derrida, reflected critically on our own practices in these practices. Below, I will discuss two key findings.

First, in our projects, we attempted to gather knowledge, e.g. about users and their needs and preferences, and we approached these users, e.g. in workshops and interviews, and in these encounters we tended to reduce what we saw and heard from them to concepts that we were already familiar with—‘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’—which led to ‘the reduction of the other to the same’ (Levinas 1987, pp. 48-50). Levinas characterized this tendency as the making of a grasping gesture, by which one pulls the other into one’s own way of thinking, which makes it very difficult to learn anything new. He described the self, as a ‘melting pot where every Other is transmuted into the Same’ (Levinas 1996, p. 13). In an attempt to gather knowledge, the self grasps the other and draws the other into its own ‘melting pot’.

PD practitioners cannot escape this tendency. Their interests and ambitions, their knowledge and ideas—their selves—get in the way of their attempts to be open towards others, towards users and co-workers.

In one 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 developed a mobile telecom application that promotes cooperation between police officers. Such a way of adapting the project, based on interactions with users, is considered good practice in PD. However, we also missed several opportunities to learn from police officers and to let their ideas affect the project. E.g. in the first workshop, we jointly articulated four topics that they (police officers) experienced as problematic. But after the workshop, we (project-team members) chose to focus on one topic that was comfortably close to our own ambition to develop a telecom application—and ignored other topics that were relevant for the police officers.

This example illustrates a key question of PD: How to balance users’ concerns with project-team members’ ambitions? Or, drawing from Levinas: How can PD practitioners balance their ambition to be open towards the other with their tendency to grasp the other, to privilege the self over the other? We can turn to Levinas for a suggestion to attempt to counter this tendency. He envisioned an attempt to escape the gesture of grasping via a form of desire that is not aimed at satisfying the self, but is respectful of the otherness of the other: ‘This desire without satisfaction hence takes cognizance of the alterity of the other’ (1987, p. 56).

Second, in our projects, we did not only need to move towards openness (divergence), we also needed to move towards closure (convergence); we needed to draw conclusions and deliver results, and this involves the making of decisions. Derrida remarked that 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’ (1995, p. 147-8). Derrida noted that people often attempt to *program* invention and that this can lead to ‘the invention of the same’ (1989, pp. 46-55); one tends to stay within one’s own comfort zone, which makes it hard to get out-of-the-box, to be open to otherness and to create anything new.

PD practitioners bring their skills and methods, their knowledge and ideas, and these enable them to move towards closure. Moreover, their tendency to move towards closure and to program invention is often stronger than their attempt to move towards openness and to be open to otherness.

In the other 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 project, some project-team members, working within a psychology tradition, conducted a questionnaire-based survey in order to obtain a statistically sound overview of the needs of people with dementia and of their ‘primary’ informal carers. In parallel, other project-team members, working within a co-design tradition, conducted informal interviews in order to inform and inspire their creative process.

Both approaches are attempts to combine moves towards openness, i.e. to learn from potential users, and towards closure, i.e. to draw conclusions about users’ needs and to create products for them. However, our methods enabled us to *program* innovation; we moved more easily towards closure than towards openness. The people who conducted the survey used questionnaires and had to make the respondents’ diverse and rich utterances fit into the questionnaire’s fixed and narrow categories, and the people who conducted the co-design interviews started with ideas to create a telecom application and probably had these ideas in mind during the interviews and privileged their own ideas over users’ ideas. We can turn to Derrida for a suggestion to better balance openness and closure. He advocated welcoming the other: ‘To invent would then be to “know” how to say “come” and to answer the “come” of the other’ (1989, p. 56); this would be an active form of passivity because it requires an effort to not make the other into a theme within one’s own program.

PRAGMATIST ETHICS

Philosophical pragmatism emerged in the USA in the late 19th century, with key figures such as William James, C.S. Peirce and John Dewey. Pragmatists focus on people’s practices (rather than on theories) and opposes all kinds of *a priori* assumptions or fixed ideas, e.g. concerning (false) dichotomies such as object-subject, fact-value or individual-society. Below, I will focus on texts by Dewey (1859-1952).

There is a growing interest in Dewey's ideas (Hickman 1998b; 2010; Hildebrand 2008), e.g. in relation to technology, engineering and design (Hickman 1990; 2001; Emison 2004; 2006; Melles 2008; Dalsgaard 2009). Key concepts in Dewey's pragmatism are experience, knowledge, change, communication and cooperation—which converge in his ideas on *inquiry* (Hickman 1998a; Steen 2009; Steen en Dhondt 2010).

A key theme in Dewey's work was his concern for creating productive relationships between practices and theories, and his advocacy for an 'empirical method' of moving back and forth between practices ('primary experiences') and reflections ('secondary experiences') (Dewey 1965, p. 36). He argued that knowledge is always provisional ('particular' and 'contingent', not 'universal' and 'necessary' (Dewey 1920, p. 78) and that one should continuously reconstruct knowledge based on experiences. Another key theme is his meliorism: 'the belief that the specific conditions which exist at one moment, be they comparatively bad or comparatively good, in any event may be bettered' (Dewey 1920, p. 178). He advocated communication and cooperation and positive change. More specifically, he advocated organizing processes of joint inquiry in which people jointly explore problems and develop solutions—which sounds similar to organizing PD.

It is important to note that Dewey always put moral experience and moral questions at the centre of his philosophy. When people act and experience, when they communicate and cooperate, they engage in ethics; acting, experiencing, communication and cooperation always have ethical qualities (Hildebrand 2008, pp. 63-93; Papas 1998). The ethics of PD occur when the people involved in such joint inquiry engage in reflection, deliberation, evaluation, communication, cooperation, choice and action.

Dewey envisioned inquiry as a process that fuses careful, reflective thinking and careful, practical experimentation, starting from a situation of perplexity ('an indeterminate situation') and moving towards some sort of resolution ('a unified whole') (1938, pp. 104-5). He conceptualized the process of inquiry as consisting of five phases (pp. 101-119)—which do not have to happen in that order but can be organized as an iterative process. Below, I will briefly outline phases 1 and 2 (problem exploration and definition), phase 3 (combining perception and conception) and phases 4 and 5 (trying out and evaluating possible solutions), and discuss the ethics of PD.

1. 'The indeterminate situation': A specific situation is experienced as problematic, without yet knowing what is precisely problematic about it, so that this situation becomes 'questionable'.
2. 'Institution of a problem': A provisional problem definition is formulated. It is important to be aware of the specific wording of the problem: 'The way in which the problem is conceived decides what specific

suggestions are entertained and which are dismissed; what data are selected and which rejected'.

Dewey stressed that active and creative engagement with personal experiences and emotions, and sharing these experiences and emotions, is critical: 'inquiry is not a purely logical process—feeling is a useful and orienting presence throughout each phase' (Hildebrand 2008, p. 57). E.g. story telling can be applied to express and discuss experiences. Please note that this approach is rather different from a 'scientific' approach to inquiry, in which people (supposedly) find 'facts'.

The ethics of PD occur in the ways in which PD participants express and share personal experiences and are able to empathise with each other. Ideally, there is room within a PD project for the expression and sharing of such experiences, so that these can indeed become starting points for inquiry.

3. 'The determination of a problem-solution': In an iterative process, the problematic situation and possible solutions are simultaneously explored and developed: 'Observations of facts and suggested meanings or ideas arise and develop in correspondence with each other'—which is, again, very similar to design thinking.

Dewey suggested that problems are best explored and defined using *perception*, i.e. one's capacities to see, hear, touch, smell and taste (what is there), and that solutions are best explored and developed using *conception*, i.e. one's capacities to imagine new situations (what could be there). Ideally, perceiving the problematic situation and conceiving possible solutions are productively combined. Different ways or more precise ways to perceive the problematic situation help to develop different or more concrete solutions, just like the conceptualization of different or more detailed solutions help to perceive the situation differently or more precisely. Promoting such perception and conception can require 'moral imagination' or 'dramatic rehearsal' (Fesmire 2003; Keulartz et al. 2004), which are both directly associated to moral experiences and moral questions.

Similarly, we can create room in PD to imagine and rehearse what the problematic situation feels like and what different alternative solutions feel like—by creating room for perception and conception, e.g. by engaging with visuals that relate to the problem and the people involved, or by providing tools that promote joint creativity (Sanders 2000; Sleeswijk Visser 2009),

4. 'Reasoning': Relations between the problem-as-it-is-currently-defined and different suggestions-for-solutions are studied, e.g. by reasoning about how one of the solutions can help to solve the problem.

5. 'The operational character of facts-meanings': One tries-out practically how suggested solutions help to solve the problem, e.g. by conducting experiments.

In the context of PD, these phases are concerned with, e.g. creating and evaluating prototypes in practical

settings or organizing trials in which people try-out the products or services that are being developed. Moreover, because things become 'real', it is critical that the people involved cooperate productively in order to 'get things done'. Participants need to express their different—and sometimes conflicting—roles and interests, so that they can negotiate and can develop ways of working to practically cooperate.

The ethics of PD occur within these negotiations, in the ways in which participants deal with their own and with other participants' roles and interests, and in the ways in which they are able to cooperate productively and to learn from each other.

VIRTUE ETHICS

Virtue ethics emphasizes a person's character, choices and actions, i.e. what he or she does and why and how he or she does that (rather than emphasizing duties, as in deontological ethics, or actions' consequences, as in consequentialist ethics). Virtue ethics is concerned with developing and practising virtues that enable one to flourish, i.e. to live a fulfilled and happy life (eudaimonia) in a just society (dikaiosunè). This school of ethics goes back to Aristotle—hence the Greek.

Virtue ethics implies a teleology, i.e. with ideas about what people are dispositioned to do, about their goal (telos). A knife is a virtuous knife if it does well what a knife is supposed to do, i.e. if it cuts things well. Likewise, a person is a virtuous person if he or she does well what a person is dispositioned to do: to flourish.

Alisdair MacIntyre, a virtue ethics advocate, defined virtues as 'dispositions not only to act in particular ways, but also to feel in particular ways. To act virtuously ... is to act from inclination formed by the cultivation of virtues' (2007, p. 149). A virtue is like a disposition and is based on previous choices and is aimed at choosing the appropriate mean or middle, which is always relative and dependent upon specific circumstances (Van Tongeren 2003, p. 57). This mean is often illustrated with the example of courage, which is an appropriate mean between cowardice and recklessness. If you see a man beating up another man in the street, it would be cowardice to do nothing. But it would be reckless to boldly interfere. Unless you are a trained fighter and can handle this situation—then this would be courageous. For most people, however, it would be courageous to do something in the middle, e.g. to attract the attention of others and to call 112.

Finding and choosing this mean 'demand judgment and the exercise of the virtues requires therefore a capacity to judge and to do the right thing in the right place at the right time in the right way. The exercise of such judgment is not a routinizable application of rules' (MacIntyre 2007, p. 150). One can find this mean, for a specific situation, by using practical wisdom (phronèsis) (op. cit., p. 154).

It is important to stress that this mean has nothing to do with mediocrity, but is related to excellence (aretè), i.e. with doing well what a virtuous person would do in this specific situation—doing well what one is good at, what one is dispositioned to do. Virtue ethics is not concerned with countering desire, but with developing and cultivating well-formed types of desires (MacIntyre 2007, p. 160; Van Tongeren 2003, p. 104).

If we turn to PD, we can discuss the two components of design thinking introduced above—generating ideas and developing knowledge and making decisions and creating things—and relate them to the virtues of *curiosity* (a desire to learn) and *creativity* (a desire to create), respectively (which are also mentioned at <http://www.virtuescience.com/virtuelist.html>). Other relevant virtues for PD would be virtues that are related to communication, cooperation, participation and emancipation—but these will not be discussed here.

Finding an appropriate mean for curiosity and creativity could involve considerations like this: If I had too much curiosity, I would e.g. approach a person in an interview merely as a means to satisfy my curiosity, without respect for him or her as a person. But if I had too little curiosity, I would, e.g. approach the other indifferently, and experience the interview as boring. Likewise, if I had too much creativity, I would, e.g. become preoccupied with my own ideas and ignore other people's contributions. But if I had too little creativity, I would, e.g. halt the creative process by making inappropriate objections.

A virtue ethics analysis of a specific situation could result in a characterization of a virtuous person and of his or her dispositions and actions in a specific situation (Harris 2008). This characterization can be related to MacIntyre's concept of narrative, with which he draws attention to 'the telos of a whole human life, conceived as a unity' (2007, p. 202). MacIntyre was critical about conceptualizations that focus on isolated behaviours, and instead argued that we should think of 'a self whose unity resides in the unity of a narrative which links birth to life to death as narrative beginning to middle to end' (op. cit., p. 205).

Virtues can be cultivated, e.g. by becoming aware of and questioning one's own practices: Which practice am I participating in? What is my role in it? What would be appropriate, in this situation? And how can I move towards a more appropriate practice? Let me give two examples (Steen 2008, pp. 194-5) of becoming aware of my own practice or narrative, of stepping out of my role, and attempting to act more in line with my telos.

Once I was hosting a workshop with older people, in which we discussed all sorts of issues related to mobile telephony. The conversation moved towards ringtones and how young people can spend too much money on these. Then one man remarked: 'But that's fine with you [addressing me]; you [possibly also referring to the telecom operator that commissioned the project] want to sell as much as possible' (paraphrased). I empathised

with the man and his concerns. I stepped out of my role and talked about my own unease with working for a client that seems to have different ideas from mine.

The other example is from in a workshop with call centre employees, in which we aimed to generate ideas for new applications for some novel technology. At the start of the workshop, I did not yet disclose this technology, assuming that this would help to generate creative ideas more freely. However, after 30 minutes, one participant said he found this unfair: ‘I feel as if you manipulate and use me. Why didn’t you just put your cards on the table?’ (paraphrased). I empathised with him and with his appeal to work more transparently, and stepped out of my role and discussed the workshop agenda with him and the other participants.

In the first example, I tried to find an appropriate kind of curiosity, trying to treat the workshop participants not as means to satisfy my curiosity, but trying to take their, and my own, curiosity seriously. In the other example, I similarly tried to find an appropriate kind of creativity, trying to treat the workshop participants not as material for my creative process, but trying to take their, and my own, creativity seriously. In both examples, my practice was questioned, in the here-and-now, which opened-up room for reflexivity (see below).

CONCLUSIONS

I have argued that PD practices always have ethical qualities: PD is based on *encounters* between people, which, according to ethics-of-the-other are ethical encounters; PD is a *process* of articulating a problem and developing solutions, which, according to pragmatist ethics, is an ethical process; and PD participants’ attitudes, choices and actions are critical to PD, which, according to virtue ethics, involves ethical questions about one’s character. These conclusions are summarized in Table 1, in relation to two elements of design thinking: 1) generating ideas and developing knowledge (a perceptive, curious, inward motion); and 2) making decisions and creating things (a conceptive, creative, outward motion).

Table 1. Different forms of ethics in relation to design thinking, and the ethical qualities of participatory design (PD).

	<i>Generating ideas and developing knowledge</i>	<i>Making decisions and creating things</i>
<i>Ethics-of-the-other — encounter</i>	Tendency to <i>grasp the other</i> . Attempt to welcome the <i>other</i> (desire)	Tendency to <i>program invention</i> . Attempt to welcome <i>otherness</i> (passivity)
<i>Pragmatist ethic—processes</i>	Joint inquiry, with <i>perception</i> , sharing of experiences and <i>empathy</i>	Joint inquiry, with <i>conception</i> , cooperation and <i>learning</i>
<i>Virtue ethics—character</i>	Cultivate an appropriate form of <i>curiosity</i> (mean or middle)	Cultivate an appropriate form of <i>creativity</i> (mean or middle)

Ethics-of-the-other can help PD practitioners to reflect on the *encounters* with others, e.g. with potential users of the products or services that we design. This occurs on the scale of face-to-face meetings, e.g. in workshop or interviews. Levinas and Derrida conceptualized encounters between other and self as ethical encounters. Moreover, they drew attention to our tendency to grasp the other (rather than being open towards the other), and to program invention (rather than being open towards otherness and letting things happen). Their philosophies also suggest ways to counter these tendencies by attempting to welcome the other and otherness. This may help us to organize workshops or interviews differently, e.g. with a more open mindset.

Pragmatist ethics can help to reflect on the *processes* in which PD participants define the problem and develop solutions. This occurs on a project management scale, e.g. over the course of several project meetings. Dewey’s ideas about organizing processes of joint inquiry can help to bring the ethics of PD to the fore: when participants express and share their personal experiences; when they perceive the problem and conceive possible solutions; and when they negotiate their different roles and interests. Reflecting on these processes can help to organize PD differently, e.g. more towards perception, sharing of experiences and empathy, and conception, cooperation and learning.

Virtue ethics can help PD practitioners to reflect on their own practices and to cultivate and practise virtues that are relevant for PD. This happens within a person, e.g. within the ways in which he or she thinks, feels, makes choices and acts. Virtues that are relevant for PD are, e.g. curiosity and creativity, and also virtues that are related to communication, cooperation, participation and emancipation. Virtues can be cultivated by attempting to find an appropriate mean for each virtue, dependent on each specific situation, and to concretely practise that mean.

These three forms of ethics—although they are very different—share some similarities: they are concerned with specifics, with concrete, practical and social practices (rather than with universals or general rules) they are based not only on reasoning but also on personal experiences and feelings, such as empathy; and they are likely to destabilize current practices because they tend to question rules and assumptions.

REFLEXIVITY

Arguing that PD has ethical qualities is one thing. Taking these ethics into account when organizing, PD is another. This begs a number of questions: Why would PD practitioners want to or need to take these ethics into account? And, if they want to or need to, how can they take these ethics into account, practically?

If the reader is convinced that PD has ethical qualities, then a logical next step is to follow the tradition of PD, which has always embraced critical reflection on one’s own practices (Markussen 1994; Gulliksen, Lantz and

Boivie 1999; Beck 2002) and advocated finding ways to improve PD, e.g. by further developing and improving PD (Bertelsen et al. 2005). We need to examine our PD practices and become more aware of the ethics that are at play in our PD practices, and find ways to take these ethics into account. Because—to paraphrase Socrates—a PD practice unexamined is not worth being practised.

The assumption is that becoming more aware of these ethics can help to more mindfully cope with them. One way in which PD practitioners can become more aware of the ethics is by engaging with reflexivity, i.e. becoming more aware of what is happening here-and-now and of one's own involvement, roles and agency in what is happening. Moreover, the three forms of ethics discussed above offer different perspectives to become reflexively aware of the ethics involved: ethics-of-the-other draw attention to what happens in face-to-face meetings; pragmatist ethics draw attention to the overall process and project management; and virtue ethics draw attention to one's own character, choices and actions.

It would be strange to articulate a recommendation like 'Be reflexive!' because that would be an example of 'paradoxical communication' (a term of communication theorist Paul Watzlawick), an example of a mismatch between the message's content and its form. Simply demanding that a person is reflexive will not make that person reflexive. Rather, my proposal for promoting reflexivity would be to promote questioning. This proposal is similar to Rhodes' (2009) proposal for an 'ethical response to reflexivity ... that asks questions rather than provides answers; that refuses the hubris of generalizations; that provokes thinking rather than provides answers; that generates possibilities rather than prescriptions; that seeks openness rather than closure'.

Posing questions would be a way to promote reflexivity and would open ways to critically reflect upon and improve PD practices. Examples of such questions are the following: *What is happening here and now? What do I think? What do I feel? What do others do, think, feel? What could we do differently?* (general questions); *Am I open to the other? Am I open to otherness?* (ethics-of-the-other); *How do we perceive the problem? How do we conceive solutions?* (pragmatist ethics); and *How curious am I (mean)? How creative am I (mean)?* (virtue ethics). In order to promote practical application, these questions can be printed on a card, so these questions can function as reminders—see Figure 1.

In closing, let me explore some ideas to also take these ethics into account in education and in research. Many engineering and design courses include classes or workshops about ethics. However, education often focuses on the results of a project and on evaluating these results normatively (e.g. in terms of 'good' versus 'bad', 'what one should or should not do'). This is different from the perspective on ethics explored above, which focuses on the process, and on taking ethical qualities as a starting point for reflexivity, with as little *a priori* normative positioning as possible.

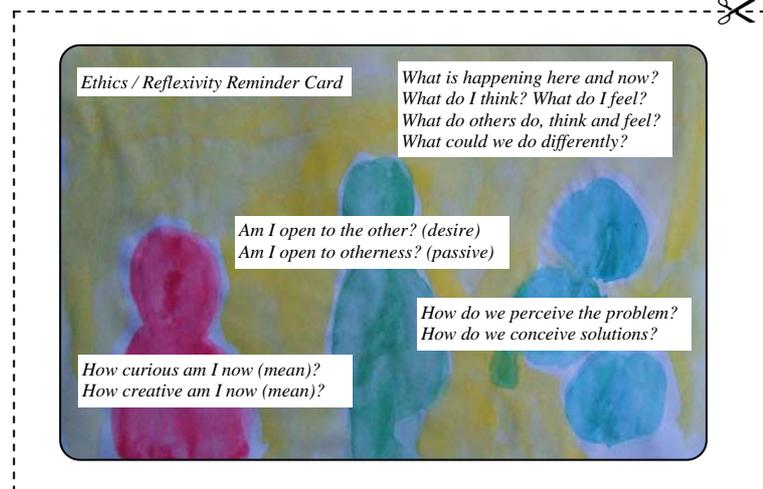


Figure 1: Ethics / Reflexivity Reminder Card

In a similar advocacy for more attention for ethics in education, Bucciarelli (2007) argued that students must be able 'to learn about the social, the organizational—even the political—complexities of practice' and that 'a major renovation of engineering education is required—one that goes beyond adding an ethics course to the curriculum.' Lloyd and Van de Poel (2008) provide an example of a design game in which students can engage in practical, ethical decision making. They developed a design game in which students can engage in role-playing, which enables them to (practically) 'feel' ethical concepts and decision making—in addition to training them to (theoretically) 'know' ethical concepts and decision making.

The matters explored above are relatively new, so it will not come as a surprise that 'more research is needed'. In particular, I can imagine research that sets out to evaluate the ways in which more awareness of the ethical qualities of PD and reflexivity help to reflect critically on PD and to improve PD. I speculate that there are benefits, but cannot articulate them yet. Furthermore, I can imagine research in which PD practitioners and scholarly researchers cooperate constructively—the former providing 'data', the latter providing 'concepts'—(Beech et al. 2010) or research in which students participate, e.g. by making explicit the ethics they find themselves in during design exercises or student workshops.

The overall goal of making these ethics in PD explicit and of becoming more aware of these ethics and of one's own role in how these ethics are coped with, would be to reinvent and update PD and to revitalize the values that PD embodies, in order to make PD relevant and vibrant in our current times.

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