

# *Virtues in Participatory Design: Cooperation, Curiosity, Creativity, Empowerment and Reflexivity*

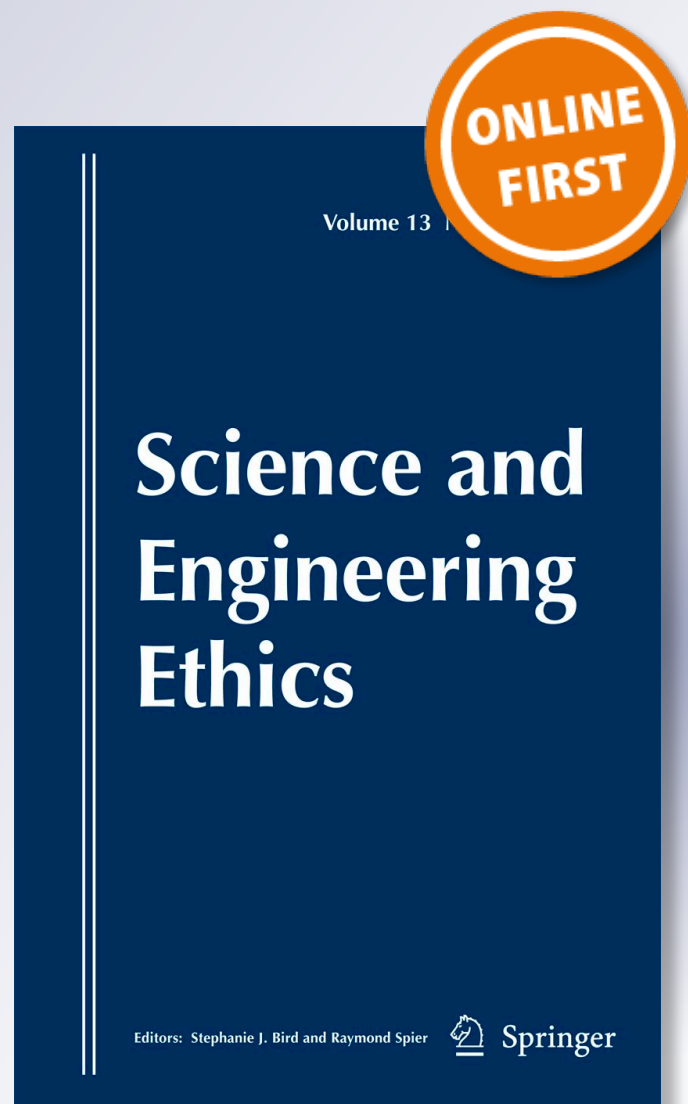
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# Virtues in Participatory Design: Cooperation, Curiosity, Creativity, Empowerment and Reflexivity

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**Abstract** In this essay several virtues are discussed that are needed in people who work in participatory design (PD). The term PD is used here to refer specifically to an approach in designing information systems with its roots in Scandinavia in the 1970s and 1980s. Through the lens of virtue ethics and based on key texts in PD, the virtues of cooperation, curiosity, creativity, empowerment and reflexivity are discussed. Cooperation helps people in PD projects to engage in cooperative curiosity and cooperative creativity. Curiosity helps them to empathize with others and their experiences, and to engage in joint learning. Creativity helps them to envision, try out and materialize ideas, and to jointly create new products and services. Empowerment helps them to share power and to enable other people to flourish. Moreover, reflexivity helps them to perceive and to modify their own thoughts, feelings and actions. In the spirit of virtue ethics—which focuses on specific people in concrete situations—several examples from one PD project are provided. Virtue ethics is likely to appeal to people in PD projects because it is practice-oriented, provides room for exploration and experimentation, and promotes professional and personal development. In closing, some ideas for practical application, for education and for further research are discussed.

**Keywords** Virtue ethics · Participatory design · Cooperation · Curiosity · Creativity · Empowerment · Reflexivity · Social networking

## Introduction

There has been a lively discussion concerning the practical application of virtue ethics in engineering and design. Harris (2008), for example, proposed that virtues

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such as discretion, judgment, inner motivation and commitment can help engineers to cultivate their ‘sensitivity to risk’, ‘awareness of the social context of technology’, ‘respect for nature’ and ‘commitment to the public good’, and Martin (2006) argued that virtues like beneficence, courage, perseverance, authenticity and leadership are critical for ‘moral creativity’ in science and engineering. Similarly, Pritchard (2001) drew attention to the ‘importance of character and imagination’ and Roeser (2010) proposed that designers need to ‘cultivate their moral emotions and sensitivity’.

In many of these texts, virtue ethics is proposed as an alternative to deontological ethics, which typically focuses on one’s duties and on finding and applying general rules based on these duties, and to consequentialist ethics, which typically focuses on the consequences of one’s actions and on finding and applying general rules to maximize positive consequences. Virtue ethics, in contrast, emphasizes each individual person’s character and dispositions, thoughts and feelings, and each individual’s specific choices and actions in specific situations (e.g., Pritchard 1998).

Furthermore, virtue ethics focuses on people’s positive dispositions and on ways to improve one’s practices (e.g., Harris 2008). This provides an alternative to a focus on risks and disasters that is typical in engineering ethics. Pritchard (1998), for example, drew attention to this tendency to ‘dwell on the negative, emphasizing disasters, scandals, and problems of wrongdoing’ and advocated shifting to ‘the positive, focusing on the exemplary’ and proposed to move from a ‘minimalist view of “staying out of trouble” towards “going above and beyond the call of duty”’. He provided inspiring examples of exemplary practices and discussed a range of qualities that one hopes to find in a ‘responsible engineer’, such as integrity, honesty, cooperativeness, courage, communication, commitment to quality, perseverance and creative imagination.

In this essay, I will focus on participatory design (PD)—a term which I use to refer to a specific tradition in designing information systems, with its origins in Scandinavia in the 1970s and 1980s (the ‘Scandinavian approach’), and which aims to empower the users of computer systems to play an active and creative role in designing these computer systems. Several people have argued (informally) that PD was once relevant and vibrant, but currently runs the risk of becoming an anachronism. People at the fourth decennial *Critical Computing* Aarhus conference (in 2005), a key conference in PD, for example, observed a gap between the older people who were involved in the early days of PD and who tend to be nostalgic about it, and the younger people who are attempting new approaches by focusing on (smaller) contemporary social or cultural issues (cf. *CoDesign* 2012, 8(2–3), special issue on *Participatory Engagement in Design*), rather than on (larger) political issues or collective action. Some have proposed to ‘revitalize’ or ‘rekindle’ the PD tradition (Iversen et al. 2004, 2010; Bergvall-Kåreborn and Ståhlbrost 2008).

I will similarly attempt to revive the tradition of PD because I believe it has a lot to offer in our time, in which all sorts of digital products and online services are ubiquitous and ‘normal people’ are still only rarely involved in designing them. Below, I will use the lens of virtue ethics and discuss several key concepts from the tradition of PD. Moreover, I will adopt a practitioner’s perspective, which seems appropriate, since I have been working in diverse PD projects in close cooperation

with industry for a number of years, and also because a key goal of this essay is to help PD practitioners to reflect upon and improve their practices.

After brief introductions on virtue ethics and on participatory design (PD), I will discuss several dispositions or virtues that are critical for people in PD projects: *cooperation*, *curiosity*, *creativity*, *empowerment* and *reflexivity*. I will argue that these have been key in the tradition of PD and that they can be understood anew through the lens of virtue ethics and can be made practical and relevant in our current time. In closing, several ideas for practical application, for education and for further research are discussed briefly.

## Virtue Ethics

In recent decades, virtue ethics has become increasingly popular. Publications by Anscombe (1958), Foot (1978) and MacIntyre (1981) helped to put virtue ethics on the academic agenda. In addition, the popularity of the ‘art of living’ literature—which draws from the classic Greek and Roman traditions, with authors such as Foucault (1990), Hadot (1995) and Nussbaum (1986)—helped to popularize virtue ethics.

Virtue ethics is one of the oldest ethical traditions in Western culture, dating back to Aristotle. It focuses on the cultivation of virtues and aims to enable people to flourish: to promote people’s well-being (*eudaimonia*) and to create a just society (*dikaiosune*). Virtue ethics is teleological in that it starts with an ultimate goal (*telos*): the goal for people to flourish, to live the good life. A knife is a virtuous knife if it does well what a knife is supposed to do: to cut. Likewise, a person is a virtuous person if he or she does well what a person is supposed to do: to flourish. The core of virtue ethics can be summarized as: to perform one’s task (*ergon*) very well.

Virtues are ‘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’ (MacIntyre 2007: 149). A virtue is a disposition; it is based on previous choices and actions and it helps to direct future choices and actions. In virtue ethics, one aims at finding an appropriate *middle* between deficiency and excess, given the specific circumstances. This is often illustrated with the virtue of courage, which is an appropriate middle between cowardice and recklessness, and which plays out differently in different and specific circumstances. If I see a man beating up another man in the street, it would be cowardice to do nothing. But I would be reckless if I would boldly interfere. Unless I would be physically strong enough and practically able to handle such a situation; then interfering would be courageous. For me, however, it would be courageous to attract other people’s attention and to call the police. Finding this middle ‘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: 150).

It is important to stress that this middle has nothing to do with mediocrity or with moderation. The appropriate middle for courage is *not* between too little courage and too much courage, but between cowardice and recklessness. A virtue aims at excellence (*arete*), that is, at doing very well what a virtuous person would do in a

specific situation. One can find this mean, for each specific situation, by using practical wisdom (*phronesis*). More importantly, one can cultivate this virtue. One can, for example, learn to act courageously more often or to further improve one's courage.

Furthermore, it is critical to understand that virtue ethics is not concerned with countering desire, but with developing and cultivating well-formed types of desires (MacIntyre 2007: 160). A courageous person wants to be courageous. The striving for excellence and the cultivation of virtues resonate in the word *virtuoso*, which refers to a person who does something very well. One can learn to think, feel and act virtuously by trying-out virtuous behaviour or by looking at people who behave virtuously. Using practical wisdom, one can recognize what a virtuous person does in a specific situation or imagine what a virtuous person would do in a specific situation.

## Participatory Design

The term *participatory design* (PD) is used here to refer specifically to 'classical' PD projects in information systems, with its roots in Scandinavia in the 1970s and 1980s (Asaro 2000; Bjerknes et al. 1989; Clement and Van den Besselaar 1993; Ehn 1990; Greenbaum and Kyng 1991a, b; Kuhn and Muller 1993; Kyng and Mathiassen 1997; Schuler and Namioka 1993). In these projects, researchers and developers cooperated with trade unions and groups of workers in order to empower workers to actively and creatively contribute to the design of computer systems, so that 'the people destined to *use* the system play a critical role in *designing* it' (Schuler and Namioka 1993). The key goals of PD have been to promote workplace democracy and to empower workers—as a reaction to the introduction of computers in workplaces and its negative effects, such as the de-skilling of workers or they laying-off of people.

Since the 1970s and 1980s things have changed. One can distinguish three waves in the development of the design of information systems and human–computer interaction. The first wave—the early days of computer systems—is associated with a focus on technology development and on studying the perceptual and cognitive faculties of people using computers on an individual basis. The second wave is associated with a focus on understanding people in work contexts, on using computers to facilitate communication and cooperation, and on involving users in design (Bannon 1991). The third wave—in which we are currently—is associated with addressing people's needs and preferences in diverse daily life situations—both work-related and leisure-related—and a broadening of the range of devices and applications (Bødker 2006).

Diverse PD-inspired approaches have become popular in industry—approaches in which researchers and designers actually and practically cooperate with (potential) 'users'<sup>1</sup> during the design and evaluation of new products or services:

<sup>1</sup> The word 'users' is between quotes in order to acknowledge that I am referring to people in a more general understanding than only their role of users of a product or service. 'Users' thus refers to people in their many possible roles, including the role of (potential) user of a product or service.

for example, in co-design (Sanders and Stappers 2008), context mapping (Sleeswijk Visser et al. 2005) or contextual design (Holzblatt et al. 2005), or in open innovation (Chesbrough 2003; Chesbrough et al. 2006), the lead user approach (Von Hippel 2005) or co-creation (Prahalad and Ramaswamy 2004). In such approaches, ‘users’ are treated *not* as passive recipients, but as active and creative contributors—as ‘experts of their experience’ (Sleeswijk Visser et al. 2005), that is, as people who are experts on their daily life experiences, needs and preferences, and who can contribute their knowledge and ideas to the process. It is important to acknowledge that the motivations to cooperate with ‘users’ can differ greatly, ranging from political or ethical, to creative or practical, to economic or commercial motivations (Greenbaum 1993), and also that the quality of organizing cooperation with ‘users’ can vary greatly, ranging from superficial ‘hand-holding’ initiatives to organizing productive dialogue and intimate cooperation.

PD is typically concerned with coping with conflicting interests, for example, with negotiating between a concern to understand a current situation and a concern to envision future situations, or with negotiating between the tendency to focus on one’s own knowledge and ideas and the ambition to focus on other people’s knowledge and ideas (Steen 2011b, 2012, 2013).

## The ‘Ethical Turn’

For the purpose of this essay, we need to understand that the focus of PD has shifted from politics towards ethics.<sup>2</sup> ‘All the projects in the 1970s 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’, but ‘[f]rom the middle 1980’s, the quest for democracy was left to the individual system developer ... The *ethical* system developer is mainly responsible towards their own individual ethical codex’ (Bjerknes and Bratteteig 1995, *my emphasis*). There used to be political structures in place to support collective action, based on dichotomies like ‘owners’ and ‘workers’, but currently the tasks of PD—to promote democracy and to empower people—seem to be each project-team member’s individual ethical responsibility. This draws attention to the thoughts, feelings and actions of those individuals that are involved in a PD project. This ‘ethical turn’ in PD provides the rationale to turn to ethics in order to revive PD.

Moreover, it seems to be appropriate to turn to *virtue ethics* (cf. Ehn and Badham 2002). PD and virtue ethics are concerned with people and their social practices in specific situations—rather than with finding and applying general rules, which would be typical for deontological or consequentialist approaches to ethics. Both virtue ethics and PD are concerned with *social* and *situated* ethics (Devon 2004; Devon and Van de Poel 2004; Van de Poel and Verbeek 2006). In line with this,

<sup>2</sup> A discussion of politics and ethics is beyond the scope of this essay. However, I would like to remark that I understand politics as referring to structure and agency in the context of collective action, and ethics as referring to freedom and responsibility in the context of individual people’s actions.



I will focus on PD practices, rather than on the underlying principles of PD (which deontological ethics might do, for example, by focusing on one's duty to pursue specific values) or on the results of PD projects (which consequentialist ethics might do, for example, by focusing on the consequences of specific design choices).

Virtue ethics would focus on the dispositions of the participants in a PD project, on their thoughts and feelings, their choices and actions, and thus takes the perspective of the moral agent herself. Such an insider perspective is needed, as an alternative to dominant approaches in applied ethics that 'emphasized the perspective of the judge or that of a disengaged critic who views the problem from "nowhere" and treats it as a "math problem with human beings"' (Whitbeck 1998: 72–73).

Moreover, virtue ethics has several qualities that will probably appeal to people who participate in PD projects. First, virtue ethics is concerned with the ways in which people cope with issues while actively participating in a specific practice—which would help PD participants to reflect on their own practices. Second, virtue ethics offers no fixed rules and thus opens-up a wide range of possibilities—which would match PD participants' explorative and experimental ways of working. Third, virtue ethics is concerned with cultivating virtues, with improving one's dispositions and practices—which would appeal to PD participants that aim for professional and personal growth and development.

## Virtues in Participatory Design

I would like to propose that *cooperation*, *curiosity* and *creativity* can be understood as virtues and that these are needed in PD practitioners. These virtues can be recognized in various studies of design practices—although they are referred to as expertise or activities, not as virtues. Cross (1995, 2004), for example, studied designers' expertise and discussed what is needed for successful design practices: communicating with others during research and design activities (cooperation), simultaneously exploring the problem and exploring possible solutions (curiosity), and making sketches, drawing and models (creativity). Similarly, Margolin and Margolin (2002) proposed that designers need to 'collaborate with clients in order to jointly identify problems and to jointly develop solutions' (cooperation), to 'listen to the client and look holistically at the client's system' (curiosity), and to 'jointly develop different solutions and articulate goals and objectives ... and implement these solutions' (creativity). And Sleeswijk Visser (2009) identified the following key elements in co-design projects: supporting engagement, 'feeling committed to use the information [on 'users']' (cooperation), enhancing empathy, 'creating a deep understanding for the user' (curiosity), and providing inspiration, being 'triggered to create product ideas' (creativity).

In the next sections I will discuss these three virtues. Although they are discussed separately, the virtues of cooperation, curiosity and creativity are intimately related, both theoretically and practically. For example, creativity is understood as cooperative creativity and requires cooperation with others and curiosity into other people's ideas. In addition, I will discuss the more encompassing virtues of



*empowerment* and *reflexivity*, which are key in PD. For each virtue, I will discuss its roots in the tradition of ‘classical’ PD and discuss tentative ideas for finding an appropriate *middle*,<sup>3</sup> between deficiency and excess.

In the spirit of virtue ethics—which is concerned with specific people in concrete situations—I will provide several illustrative examples for each virtue, drawing from personal experiences in the WeCare project. In this project, some 25 people (including myself), from ten organizations (from Finland, Spain, Ireland and The Netherlands), cooperated with each other and with potential users during the development and evaluation of several online social networking services for older people. The project’s goal has been to enable older people to participate actively in social networks—both online and ‘in real life’—so that they can increase their social well-being. Because of its approach and its goal, the WeCare project can be positioned in the tradition of PD. Please bear in mind that these examples are based on personal observation and interpretation (not on systematic study) and are intended to inspire (not to prescribe).

## Promoting Cooperation

Cooperation is at the heart of PD. Typically, the focus has been on cooperation between designers of information systems and users of these systems. Kensing and Blomberg (1998), for example, discussed different forms of cooperation between designers and users, ranging from limited forms of cooperation, in which users are only asked to provide information on their work and have little or no control over the design process or its outcomes, to more elaborate forms of cooperation, in which users actively participate in the analysis, evaluation, design and implementation phases. Furthermore, Bjerknes and Bratteteig (1995) discussed the tensions and conflicts that can occur between workers and employers, and critically remarked that PD should take into account the harsher realities of ‘the larger organisational context in which power is enacted’, otherwise PD ‘becomes a pleasant experiment for those who participated—but the democratic ideals turn into an illusion.’

In PD, cooperation is key. Moreover, the disposition to promote cooperation and to foster a climate that promotes cooperation are critical in PD. This virtue of promoting cooperation is needed in researchers, designers, users and other stakeholders. The PD tradition comprises diverse approaches to promote cooperation, such as *mutual learning* (see below) and *cooperative prototyping* (see below). Moreover, PD offers approaches and metaphors to better understand and promote cooperation.

Muller (2002), for example, advocated creating a ‘third space’, a middle ground in-between designers and users, in which they can meet to communicate and cooperate. Such a ‘third space’ belongs neither to the designers nor to the users, and

<sup>3</sup> The need to find this ‘middle’ in virtue ethics can be associated with the need to find a ‘middle’ in participatory design, e.g., when balancing and navigating between different or conflicting interests, for example, between users and designers, or between people and technology (Steen 2011b).

can therefore help people to come out of their comfort zones so that they can learn from each other and jointly create innovations. People can then '*learn something that [they] didn't know [they] needed to know!*'. Muller discussed a range of methods for 'challenging assumptions, learning reciprocally, and creating new ideas, which emerge through negotiation and co-creation of identities, working languages, and relationships, and polyvocal (multi-voiced) dialogues across and through differences.'

In addition, Bratteteig and Stolterman (1997) compared cooperation in a project group to cooperation in a jazz group: 'In a jazz group, different instruments with different tonal characteristics form a totality unattainable with only one kind of instrument. The diversity, the clashes between the sounds, the emergent sounds, all form the totality which we experience as music.' They advocated allowing for emergent team behaviour and *not* emphasizing, for example, control mechanisms and risk minimization, which could easily inhibit cooperation: 'Groups are unpredictable risky, and seemingly irrational, but this is precisely why design projects are carried out by groups!' Moreover, they remarked that the process in which diverse people get to know each other and try-out ways to cooperate, typically needs time and care.

The practices of Sharon could serve as an example to illustrate of the virtue of *promoting cooperation*. Sharon is manager of the WeCare project and, in that role, she has organized project-team meetings every 4–6 months during the 3 years of the project. These are typically meetings of 2 or 3 days, with ten to fifteen people, with a lot of topics to discuss, such as technology and application development, user involvement and user tests, business models and lobbying, pilots and evaluations with users, and budgets and timelines. Sharon is a *cooperation virtuoso* because she organizes relatively long lunch breaks during these meetings, including a walk outside. By doing this, she encourages us to take time for relaxation and socializing, even though the agenda is packed—or *because* the agenda is packed. Sharon has found that cooperation improves if people understand and trust each other, and that nurturing mutual understanding and trust takes time and careful attention—whereas rushing through the many agenda items and forcing people to cooperate in a top-down manner would very likely not improve cooperation.

In PD, a *cooperation virtuoso* aims to promote cooperation between diverse people (which will enable them to engage in *cooperative curiosity* and *cooperative creativity*, see below) and does this with care, patience and attention for group dynamics. She aims for a middle between the *deficiency of neglecting* the subtleties of group dynamics and cooperation or applying a *laissez-faire* leadership style and vainly hoping that people will cooperate, and the *excess of controlling* people and forcing them to cooperate in a top-down manner or applying an controlling leadership style. Moreover, she would aim at creating a neutral and shared territory, and creating room for improvisation and emergence. The virtue of promoting cooperation can be understood as an appropriate middle between *neglecting* others and cooperation, and *controlling* others and cooperation. This virtue is critical for all people in a PD project, and especially relevant for those in management or leadership roles.

## Cooperative Curiosity

In the context of PD, curiosity can be seen as the virtue of *cooperative curiosity*<sup>4</sup>: a disposition of being open and receptive towards other people and their experiences, and towards one's own experiences and learning (cf. Steen 2012, 2013). A curiosity virtuoso aims for a complex middle between the deficiency of too little receptiveness to other people's experiences (imperviousness) or to one's own experiences (apathy) on the one hand, and the excess of too much receptiveness to other people's experiences (obsession) or to one's own experiences (self-absorption) on the other hand. I would be impervious if, for example, in an interview, I do not listen to what the other person says. Or apathetic, if I do not feel anything within myself, in such an interview. And I would be obsessive if, for example, in a workshop, I totally focus on one person's experience or one topic. Or self-absorbed, if I am entirely focused on my experiences or a topic of myself. In short, *curiosity virtuosos* are open and receptive towards other people and to their inner lives, and they empathizes with others, so that they can engage in joint curiosity. Key approaches to promote cooperative curiosity in PD are *mutual learning* and *ethnography*.

The *mutual learning* approach was developed in the Utopia project, in which system developers cooperated with graphic workers to develop and evaluate information systems to support workers (Bødker et al. 1987). The developers and the workers had diverse meetings in which the developers learned about the workers' ways of working, their skills and the tools they use, and in which the workers learned about new technologies, for example, novel displays and printers. Based on this mutual learning, they were able to jointly develop mock-ups and prototypes (see below: *Cooperative Creativity*). Mutual learning was also organized in the Florence project, in which system developers cooperated with nurses to develop and evaluate a hospital information system (Bjerknes and Bratteteig 1987). The developers observed nurses at work for some months. One of the things they learned from each other is that they had different perspectives on information and communication. The developers first focused on the information that was written on cards, until they learned that the nurses saw these cards primarily as ways to organize communication and cooperation. At the same time, the nurses learned about the ways in which the developers' focus on information and on making information explicit. Mutual learning is a two-way process—quite different from, for example, an approach in which designers wish to obtain information from users, or a process in which users wish to hear from designers what the system will do.

Another approach that fosters curiosity is to draw from the tradition of *ethnography*, for example, by conducting all sorts of fieldwork to inform or inspire the design process (Button 2000; Crabtree 2003). There are several key principles for ethnography which help one to focus on other people, rather than on one's own ideas about these people: observing people in their natural settings, rather than in a

<sup>4</sup> The term 'cooperative curiosity' is used to refer to a type of curiosity that is related to and directed to other people—in order to distinguish it from other types of curiosity, in which, for example, one is curious about nature.

lab; looking at situations holistically, rather than focusing on particular aspects; describing what people actually do, rather than what people ought to do according to, for example, work procedures; and adopting other people's perspectives, rather than staying with one's own perspective (Blomberg et al. 1993).

The virtue of cooperative curiosity can be illustrated by an example from the WeCare project. In many meetings the project-team members discussed older people—the primary target group of the social networking services that were being developed in the project—and older people's needs. On several of such occasions, project-team member Jannie, who worked for an organization that represents a large group of older people, urged us to be careful with our words. She explained that the words we use determine how we view the world. When we say 'Older people are like this' or 'They will not be able to that', we create stereotypes. Instead, she organized meetings and interviews with project-team members and older people so that they were able to engage in mutual learning. The project-team members learned about older people's experiences, and the older people learned about social networking functionalities. Jannie is a *curiosity virtuoso* because she helped the others to be curious.

In PD, the virtue of *cooperative curiosity* is needed to enable diverse people to engage in joint learning, so that they can empathize with each other and learn from each other. Curiosity can then become a social process, a process that occurs in-between people, in the *middle* between others and self.

## Cooperative Creativity

In the context of PD, creativity can be seen as the virtue of *cooperative creativity*<sup>5</sup>: a disposition of jointly generating ideas, combining ideas of different people, and of practically realizing ('making real') products or services (cf. Steen 2012, 2013). A creativity virtuoso aims for a complex middle between the deficiency of too little realization of other people's ideas (disconnectedness) or one's own ideas (passivity) on the one hand, and the excess of too much realization of other people's ideas (obsession) or of one's own ideas (self-centredness) or on the other hand. I would be disconnected if, for example, in a workshop, I do not build on other people's ideas. Or passive, if I do not contribute ideas to the creative process. And I would be obsessive if, in a project-team meeting, I totally focus on realizing only one idea, so that the creative process halts. Or self-centred, if I am entirely preoccupied with realizing my own ideas. In short, *creativity virtuosos* are able to generate and express ideas and to combine these productively with other people's ideas, so that they can engage in joint creativity. *Workshops* and *cooperative prototyping* are key approaches to promote cooperative creativity in PD.

A typical workshop format in the PD tradition is the *Future Workshop* (Kensing and Madsen 1991). In such a workshop, diverse people—typically: researchers,

<sup>5</sup> The term 'cooperative creativity' is used to refer to a type of creativity that is related to and directed to other people—in order to distinguish it from other types of creativity, in which, for example, one's creativity is directed to objects.

designers, prospective users and their managers—cooperate in a creative process that consists of three phases: in the *Critique*-phase, participants brainstorm about their current situations and about problems they currently experience; in the *Fantasy*-phase, they invert the identified problems into positive visions for improving situations and creating new situations; and in the *Implementation*-phase, they develop plans for specific actions in the immediate or short-term future.

Another key approach is *cooperative prototyping*, that is, the hands-on creation and evaluation of mock-ups and prototypes. This approach was pioneered in the Utopia project (Ehn and Kyng 1991; Bødker et al. 1987). In that project, the mock-ups were as simple as an empty cardboard box with the text “desk top laser printer” written on it. Using mock-ups offers the following benefits: ‘they encourage “hands-on experience,” hence user involvement beyond the detached reflection that traditional systems descriptions allow; they are *understandable*, hence there is no confusion between the simulation and the “real thing,” and everybody has the competence to modify them; they are *cheap*, hence many experiments can be conducted without big investments in equipment, commitment, time, and other resources; and last but not least, they are *fun* to work with’ (Ehn and Kyng 1991: 172–173). Using mock-ups allowed ‘*the graphical workers to articulate their demands and wishes in a concrete way ... Even the first extremely simple “paper and wood” mock-up allowed the graphical workers to play a very active role in the design work*’ (Bødker et al. 1987: 265).

An example of the virtue of cooperative creativity could be Stefan’s way of staying calm and promoting dialogue in the WeCare project. Stefan has been responsible for coordinating the development of different social networking applications for different target groups, based on the integration of different software architectures and modules from three commercial project partners. A lot of coordination and development was needed to get these applications working. In one particular project-team meeting, for example, there was a conflict between project-team members: the technology was not delivered on schedule and it did not meet the ‘user requirements’. Rather than getting upset or panicking, Stefan stayed calm and invited several other project-team members to talk constructively with each other about how to cope with this situation and how to deliver the best possible solution within the remaining time. Stefan is a *creativity virtuoso* because he encouraged other people to be creative and promoted creative cooperation between people. He knew that they needed to cooperate creatively in order to deliver.

In PD, the virtue of *cooperative creativity* is needed to enable diverse people to engage in joint creativity, so that they can jointly generate and try-out ideas, and turn these ideas into new products and services. Creativity can then become a social process, a process that occurs in-between people, in the *middle* between others and self.

## Empowerment

The virtues of cooperation, curiosity and creativity are directly related to the task (*ergon*) of the participants in a PD project. They can become *virtuosos* in

cooperation, curiosity and creativity, and thus flourish as PD practitioners. In addition, they can flourish if—through their projects and the results of their projects—they enable other people to flourish as well. They can promote other people's well-being and help to create a just society—which have been key goals of PD.

PD virtuosos are of good will towards the people whose situations they aim to improve. Moreover, if they wish to improve other people's situations, they also need the virtue of empowerment. The term 'empowerment' is used here to refer to a disposition and a willingness to share power with others, especially with prospective 'users', and to 'let go' of control—when appropriate, which depends on the situation. Researchers and designers need to share some of their power—the power that is inherent in their own roles as researchers and designers—with 'users'.

The need to share power and to delegate agency have been discussed extensively in the PD tradition. Markussen (1994), for example, critically observed that PD practitioners rarely speak about their own roles in the politics of PD and how they themselves relate to power. She proposed that they need to make themselves accountable concerning the ways in which they 'handle the power delegated to them through the processes of design'. Similarly, Beck (2002) remarked: 'We could do well to bring out the politics in our own roles in contributing to constructing computing technology'.

The virtue of empowerment can also be illustrated with an example of John Thackara (1999), at that time project manager of the Presence project, which aimed to develop user-friendly Internet products and services for older people. This is what he wrote about their first encounter with older people in the project:

Someone said, "There are a lot of older people out there; let's see if we can find some and help them by giving them this Internet stuff in an easy-to-use format". So we went and found some older people and told them how we had come to help them with the Internet, and they said, "Piss off! ... We don't need your patronising help, you designers. If you've come here to help us, you're wasting your time; we don't want to be helped, thanks just the same. Yet we do have some interesting observations to make about our daily lives, about our lifestyles, about our communication, and about all of their attendant dysfunctions. If you could kindly change your attitude and help us explore how we will live, then perhaps we can do something together".

Rather than creating product and then bringing it to 'users', the PD approach is to organize cooperation with 'users' and to jointly create tools that they want to and are able to use—in ways that they want to and are able to find out for themselves.

In PD, the *tool perspective* has been key to promote empowerment of workers. 'The tool perspective was deeply influenced by the way the design of tools takes place within traditional crafts. The idea is that new computer-based tools should be designed as an extension of the traditional practical understanding of tools and materials used within a given craft or profession' (Ehn 1993: 57). 'The intention is not to automate parts of the work process, but to build computer-based tools by which the craftsman can still apply and develop original skills' (Bødker et al. 1987: 261–262). The *tool perspective* helps to empower workers, to respect their tacit

knowledge and skills, and to enable them to contribute actively and creatively to the development of tools which they will be using.

The Capability Approach (Sen 1999; Nussbaum 2011; Dong 2008; Oosterlaken 2009) (CA) is also useful to understand the virtue of empowerment. The CA—which draws from the tradition of virtue ethics—provides a ‘framework for investigating and discussing topics in the area of justice, equality, well-being and development’ (Oosterlaken 2012: 4) and focuses on enabling people to develop their capabilities. The CA thus provides an alternative to approaches that focus on providing specific commodities (e.g., computers) in that it acknowledges that these commodities can only be used if a range of personal factors (e.g., personal skills), social factors (e.g., social norms) and environmental factors (e.g., infrastructure) are in place. It also offers an alternative to approaches that focus on promoting specific behaviours (e.g., using computers for specific purposes or in specific ways) in that it acknowledges that people should have freedom to decide for themselves how they want to live their version of ‘the good life’ and to flourish. The CA advocates empowering people to improve their capabilities and promoting development and freedom—which can be understood as an appropriate *middle* between providing commodities (‘too little’) or prescribing specific behaviours (‘too much’).

A final example from the WeCare project can illustrate the virtue of empowerment. At the start of the project, Erik—at that time manager of the research programme which WeCare was part of—suggested that the project-team members not only need to deliver several prototype social networking services, but also need to deliver a range of practical recommendations for different audiences: recommendations for older people, to help them to actually use these and similar social networking services in ways that benefit them; recommendations for technology developers, to help them to develop similar services; recommendations for businesses and investors, to help them to develop feasible and viable business models; and recommendations for policy makers, to help them to develop schemes to promote the deployment of such social networking services. Erik knew that many projects are successful on the short term, for example, in delivering prototypes, but that only few are successful on the long term in bringing about positive and sustainable change. His advice was to develop and disseminate these recommendations, aimed at empowering different groups of people to increase their capabilities and to help them to improve their respective tasks and to flourish.

An empowerment *virtuoso* empowers other people, and aims for a middle between the deficiency of being passive and hesitant, for example, by abandoning people and ineffectively hoping that they will find out things for themselves, and the excess of being patronizing and directive, for example, by privileging one’s own vision and ways of working and forcing others to comply.

## Reflexivity

Finally, it is critical for PD practitioners to be aware of the practices of cooperation, curiosity, creativity and empowerment in which they participate, of their involvement in these practices, and of their own feelings, thoughts and actions in



these practices. They need the virtue of *reflexivity*—a term that is used here to refer to a type of reflection on practices in which one is actively involved and on one's own involvement in these practices (Steen 2011a; cf. Ashmore 1989). Moreover, the term refers here to 'team reflexivity', a type of reflexivity in which project-team members jointly 'reflect upon and modify their functioning' (Widmer et al. 2009).

There have been many advocates of reflexivity in the tradition of PD. Markussen (1994) and Beck (2002), for example, proposed that PD practitioners need to reflect on their own roles and on the ways in which they handle power. More recently, Bødker (2006) noted that user involvement is often taken for granted or seen as unproblematic, which 'leads to a lack of reflection or reflexivity on behalf of designers as regards their own ways of working'.

Similar to Stovall (2011), I would like to propose that reflexivity is a pivotal virtue in PD. Stovall (2011: 110) proposed that 'professional self-awareness' is critical for engineers' professional ethics, as 'a sort of master virtue that fosters the reflective deliberation necessary for a professional to pursue their work in an aspirational frame of mind'. Reflexivity can help me become aware of the ways in which cooperation, curiosity and creativity and empowerment play out in a specific situation and of my own involvement in this situation.

Reflexivity can help PD practitioners in 'determining how the ethical virtues are to be concretely pursued' (Stovall 2011: 125), especially when searching for an appropriate *middle* for one of the virtues. If, for example, in a workshop, I tend to be absorbed by my own ideas, I can become aware of my thoughts and feelings and actions, and of my tendency to be absorbed by my own ideas, and then attempt to be more sensitive to other people and their ideas. I can lean 'slightly toward the opposite extreme of that which [I am] naturally inclined toward' (Stovall 2011: 113, note 5) in order to move towards an appropriate middle—for each specific situation.

Thus, reflexivity is pivotal in PD practitioners attempts to become *virtuosos*. But how can we promote reflexivity? Probably not by simply recommending people to be reflexive. Rather, one may promote reflexivity by posing questions. Rhodes (2009), for example, proposed 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'. PD practitioners can engage with reflexivity by posing questions, for example, about what is happening here and now, what one thinks, feels and does, what others think, feel and do, and what one could do differently.

PD virtuosos find ways to make their PD practices into well-formed forms of natural desires—the desire to cooperate with others, the desire to be curious and to be creative, and the desire to empower others—so that they can flourish and help others to flourish. Reflexivity virtuosos aim for an appropriate middle between the deficiency of mindlessness, of being totally absorbed in action without thinking or feeling, without reflection or reflexivity, and the excess of navel-gazing, of indulging in extreme and unproductive self-awareness (Latour 1988; Woolgar 1988). Moreover, the virtue of reflexivity helps to find an appropriate middle for the other virtues, in each specific situation.

## Conclusion

People who participate in participatory design (PD) projects, need to cultivate the virtues of cooperation, curiosity, creativity, empowerment and reflexivity in order to become PD *virtuosos*. Cooperation helps them to engage in cooperative curiosity and cooperative creativity. Curiosity helps them to empathize with others and their experiences, and to engage in joint learning. Creativity helps them to envision, try out and materialize ideas, and to jointly create new products and services. Empowerment helps them to share power and to enable other people to flourish. Moreover, reflexivity helps them to perceive and to modify their own thoughts, feelings and actions. For people in management or leadership roles, the virtues of cooperation and reflexivity are especially relevant, because they are concerned with creating conditions that promote curiosity, creativity and empowerment.

In closing, let me explore some of the implications of this argument for practice, for education and for research. As was suggested (above), virtue ethics will probably appeal to practitioners because it offers a practice-oriented perspective, allows for exploration and experimentation, and promotes professional and personal growth. PD practitioners can relatively easily try-out some of the notions explored in other papers (e.g., Harris 2008; Martin 2006; Pritchard 1998, 2001; Roeser 2010; Stovall 2011), for example, by initiating and facilitating discussions with fellow project-team members about topics that are relevant to their specific project or situation.

Some have fruitfully applied virtue ethics in educational contexts (e.g., Frey 2010; Harris 2008; Pritchard 1998, 2001; Stovall 2011). As was already remarked (above), virtue ethics offers an alternative to consequentialist and deontologist approaches to ethics because it focuses on specific people in concrete situations and on personal experiences—which would enable, for example, PD practitioners to participate in ethical deliberation processes. In a similar vein, Lloyd and Van de Poel (2008) provided an example of a design game in which students engaged in role-playing in the process of decision making, which enabled them to (practically) feel ethical concepts, in addition to training them to (theoretically) know ethical concepts.

Since the debate on virtue ethics in engineering and design ethics is on-going, it may not come as a surprise that more research is needed. I can imagine a range of practice-oriented studies that further explore the practical application of virtue ethics, focusing, for example, on the practical benefits of such an approach. This could be done, for example, in studies in which practitioners and scholars closely cooperate (Beech et al. 2010).

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