

ing techniques. It is perhaps difficult for many practitioners to be creative in a JAD workshop, just as many teachers lack the flair to be creative in the classroom. PD practitioners tend to display a flair for creativity that many people in the systems development field simply do not exhibit. Such creativity is not unique to PD, but can be found in diverse sources that emphasize "good design." This suggests JAD's creative potential can be enhanced through facilitator creativity training.

Structure. The JAD approach emphasizes structure, while the PD approach devotes almost no guidelines to structure. This partially stems from the different set of underlying values that drives the two methodologies. Nevertheless, structure has merits; as noted in [13], structure can actually enhance creativity when introduced properly. Introduction of a PD structure summarized in a cook-

book format which (to continue the analogy) suggests a dozen ways to cook chicken, would present an important step forward. A PD cookbook would preserve the contextual flexibility that PD practitioners consider important, while at the same time serving to democratize the PD movement by pushing it further into the hands of the average designer/systems analyst in industry.

In closing, we have attempted a comparative examination of two leading user involvement methodologies: PD and JAD. Although there exist contextual differences in their origins and implementation, strong correspondences exist between them. The similarities we have noted suggest a basis for future mutual development, while contrasts suggest points of mutual learning.

Acknowledgments

We thank Jonathan Grudin and

Diane Lockwood for their thoughtful comments. **G**

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PD: A Personal Statement

Joan Greenbaum
CITY UNIVERSITY OF NEW YORK

Three different perspectives for the need for PD approaches—pragmatic, theoretical and political—represent major discussions that often get in the way of how people talk to one another. We believe this summary could help people identify which arguments they are using, so they can communicate more directly with each other. Our argument, organized around these three perspectives, is rooted in Scandinavian experiences, but is, we believe, adaptable cross-culturally.

- *A pragmatic perspective.* One would obviously argue for getting the job done better. For example, it is generally acknowledged that approximately 60- to 80% of all problems can be traced to poor or inadequate requirement specifications. Obviously, computer systems need to better suit people's working practices. Since those who do the work know how it is done, we need to involve the designers of the systems with day-to-day work experience early in the project, when the basic design choices are made.

For systems developers, PD techniques could mean fostering an environment in which people can express their ideas, for

instance by using techniques like a *Future Workshop*—a technique that helps people generate ideas about the future use of technology at their workplace. Applying techniques such as participatory prototyping, offers an up-front way to reduce errors otherwise not found until the final system is put into use.

Participation in design projects offers pragmatic possibilities for both systems developers and management. For systems developers, PD offers an opportunity to build systems that work better. For management, PD offers a way to increase product and service quality.

- *A theoretical perspective.* There are many theoretical arguments supporting the need for PD. Here we develop one from a philosophical perspective. Wittgenstein, for example, argues that "If a lion could speak we wouldn't be able to understand it." Since human beings and lions do not live the same lives we are not able to understand each other.

Since systems developers and people at workplaces do not experience the same things, this limits how well they can understand each other's experiences. One way of getting around this dilemma is to apply a PD approach to prototyping which emphasizes providing people with hands-on experience in a work-like setting.

Turning to the philosophy of Heidegger we may observe that "Involved

acting—not detached reflection—is our fundamental way of being." For design this implies that the best way for people to relate to a prototype is by use in a, perhaps simulated, work situation.

- *A political perspective.* Political discussions reflect people's beliefs. Coming from a Scandinavian tradition, we believe that in a democracy people have the right to influence their own work place, including the use of computer technology. As systems developers we have the obligation to provide people with the opportunity to influence their own lives. We believe it is our professional responsibility not only to build systems that are cost-effective but that also improve the quality of work life.

Involving people early in project organization, before fundamental design decisions are made, is sound from a political perspective. Applying techniques like Future Workshops and participatory prototyping are ways of designing to meet the needs of the people who are eventually going to use the systems.

From all three of the preceding perspectives, PD is relevant outside Scandinavia. The pragmatic look at things and the theoretical reflections are largely independent of cultural conditions. The political discussions clearly differ among countries, but we could argue that PD supports workplace democracy and that it is time for this argument to be heard. **G**

