

## **The Dilemma of Education in Participatory Design: The Marketplace Value vs. Community Value**

**Kun-Jung Hsu**  
**Department of Construction Technology**  
**Leader University, Taiwan.**

### **Abstract**

The concept of “participatory planning/design” has gradually become one of the main themes in professional design and social science. However, because behavioral patterns in space design are closely related to the values of the designers concerned, the pursuit and construction of a good place is a basic and normative proposition in the proceeding of planning and design. This paper explores the dilemma of education in participatory design and reveals the contradiction between marketplace values and community values in practice. Also, this paper utilizes the production possibility curve and the choice theory of demand side to analyze the concept, value judgment, decision-making, and constraints of planning/design behavior.

### **Introduction**

The ideal of advocacy planning first proposed by Davidoff in the mid 1960’s. The professional planners and designers who support this view vow to make planning for the needs of the disadvantaged groups and persons their top priority. They jointly opposed urban redevelopment policy propelled by bulldozers, and advocated the development of participatory planning methods through democratic processes. The normative discourse proposes that public space planning and design be regarded as requiring direct public participation in the decision-making processes in formulating public space.

Environment-Behavior study (E-B study) adopts problem-oriented approaches that emphasize the need for interaction between design and research [6]. Following the development of E-B Study, the normative viewpoint of participatory planning and design has gradually become one of the main themes in professional design and social science [3, 7, 8]. The idea of participatory planning/design is deeply rooted in normative theory. Accompanying the traditions of occidental civil society, the participatory planning/design idea became one of the major principals of United Nations (UN), World Health Organization (WHO), and UN International Children’s Emergency Fund, (UNICEF), and has gradually become integrated with the ideal of Sustainable Development.

Participatory design is basically a kind of spatial co-production. Gittel (1980) has proposed co-production by a concept that is “related to the expansion of participation worthy of more extensive consideration” [4:255]. However, there is still a lack of theory how people choice numerous possible resolutions in participatory planning process. Therefore, the examination of the participatory behavior relationship between theory and practice of has become a key-issue in the education of design.

This paper examines the experiences gained from the participatory design of Taipei Neighborhood Park. Based on the empirical significance of participatory design in Taipei Neighborhood Park, the dilemma choice between marketplaces and community values emerged choice behavior. Then, the choice behavior in the participatory of urban public space design was formally analyzed and explored. Finally, this paper discuss “the complex-equilibrium-choice among agents in the participatory design process” was discussed.

### The Empirical Significance of Participatory Design in Taipei

Since the past twenty years, western mainstream values have been adapted for the Taiwanese academia planning and application by priority, and then this application has been used by government sector. In particular, ideals regarding environmental redevelopment and empowerment in public sectors have been adopted by academia, and promoted in the relevant government sectors. In the mid 1990's, Civil City was officially addressed during the Taipei mayoral election. After mayoral election, some scholars become Taipei officials and carried out participatory design for community redevelopment. However, the value of marketplace and community contraction resulted to various ideas and social meanings. From 1999, Taipei Civil Affairs Department has been a leading role in coordinating among District, Li (neighborhood) and Community organization. And to guide “community planning” and “participatory design” the redevelopment of neighborhood parks under Community Empowerment Programs as well. Figure 1 depicts the mechanism of participatory design in Taipei Neighborhood Park.

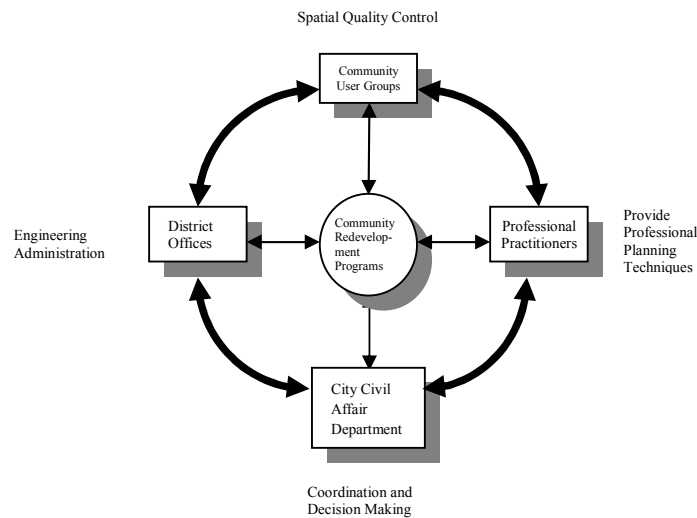


Figure 1: The Mechanism of Participatory Design in Taipei

#### ■ Constraints and Choice

However, past experiences with participatory design in Taipei Neighborhood Park had shown that different user groups have their different public interest. The neighborhood parks main users mainly include women, children and the seniors.

Different time schedules cause Taipei people to negatively join the participatory design activities. In the proceedings of participatory design, the participating individuals and the extent of their involvement closely depend on the participants' available resources. Naturally, many residents' degree of involvement is restricted by their work commitments. In other words, the time they can afford to participate in such activity is quite limited. In addition, it is difficult for planners to determine the exact amount of time that might be required for any particular meeting, because this largely depends on which space design issues are being discussed. For example, peoples' concerns in relation to spatial interests differ according to individual life style and different availability of resources in the community. Therefore, the interests that have to be represented at any given meeting, varies. When a conflict of opinions occurs between different user groups, the head of the Li is responsible for ensuring all opinions are heard, and directing the discussion to a well-rounded compromise.

Another problem is that the implementation of participatory design tends to result in budget overruns and time delays. For example, the amount of time a designer involved in a participatory design project can afford to station in the local community is limited by time and budget constraints. Also, the process of participatory design is much more complicated than that of traditional non-participatory design. More people are involved in the project, and it is necessary to produce a range of presentation panels, models, publicity posters, leaflets and folders. Therefore, it is a lot more expensive than traditional non-participatory design.

#### ■ Differential Tastes of Actors in Participatory Design

When residents of a community exercise their choice on design schemes, their value judgments make the call. Members of the general public tend to focus on pragmatic benefits that can be derived from the scheme. More affluent residents tend to place more importance on spatial aesthetics and idealistic goals. The expected goals could range from those related to pragmatic benefits to the hope for more idealistic public benefits, which cannot be effectively evaluated. The goal of participatory action is to find a consensus of spatial usefulness and create a meaningful public place for users. In the process of achieving community empowerment, the implementation of the process of participatory design to achieve a good quality of life in public spaces is an important strategy in the discourse between architectural professionals and academia. However, the different perspectives of the various agents involved force residents of community and the designer to resolve conflicts between marketplace values and community values.

Generally speaking, government officials are motivated politically to provide the vision and the legal framework for planning activities for the city. They also try to bring together the academic elites to establish meaningful discussion. Academics are also generally willing to take part in participatory design projects by forming cooperative relationships. Alternatively, they can also act as consultants in promoting the ideal of the Civil City addressed during the mayoral election. They can also provide the know-how for establishing participatory procedures for public space planning/design that are embedded with normative values. However, professional practitioners (architects, landscape consultants, etc.) are more reserved in their enthusiasm participatory ideals. So, how should all these people with varying social status recognize the quality of space? How should they make their choices?

Most of the time, the actual users of public spaces are not very active in the participatory procedure; the design ideals are highly diversified; cost overruns for the professional practitioners are commonly seen; the sponsors' political considerations may be varied; the agential role played by the head of Li; and the idealistic-level-benefits represented by the academia; all the above-mentioned phenomena demonstrate one thing, they are the optimum choices made by distinct participating individuals. Economically, the dilemma resulting from the contradiction of marketplace values and community values will be reflected in different resource constraints, the divergence of the production probability curve, and different preferences among the various the actors.

### ■ The Dilemma: Marketplace Value vs. Community Value

From general theory of economics, we know that with perfect market information, an optimized demand-supply market adjustment can bring forth an efficient result. But, as we can see, the opportunity cost of participatory time is becoming more and more expensive, and this could eventually push actors in the participatory design away from the activity. Does such an efficient market exist in the realm of participatory design? On the other hand, how are the public spaces supposed to get designed? Different social statuses might result in diversified life styles, which lead to distinctive socialized aesthetic judgments. Therefore, should design be based primarily on issues related to pragmatic purposes or aesthetic values? Furthermore, by whose definition is pragmatism defined? Who is to justify aesthetic values? These questions pose an additional layer of value judgments. That is, the more diversified the community members are, the more differences, problems and diversification will be expected in the design of the neighborhood-park.

Is it that all the current dis-equilibriums are just part of the modulating processes for individuals who are holding them? With these questions in mind, a general thesis regarding participatory public space design was developed to analyze and explain how different agents behave economically in the proceedings of participatory design. In the following sections, based on different participants with their resource conditions and characteristics of their choice behavior, this paper utilizes the production possibility curve, and the choice theory of demand side to analyze economic behavior regarding the concept, value judgment, decision-making and constraints on participatory planning.

### The Economic Behavior of Agents in the Participatory Design

Gittell (1980) has argued that co-production is more likely to occur in settings in which there is a congruence of values between the service delivers and service recipients. But, the empirical significance learned from the participatory neighborhood park design in Taipei signified the differentiation values taken by different agents in everyday economic life. Underlying the co-production concept is "the realization that if receipts of a service are to achieve maximum satisfaction they must have an input into the provision of that service [4:255]". To pursue and construct a good place is a basic and normative proposition in the proceedings of design. Also, the ideal of participatory planning/design is deeply rooted with the utopian values.

However, what's the real meaning of a good place? This is a normative proposition raised by designers. It also closely related to the values held by different participating agents. If

we extend Lancaster’s and Becker’s analytical concept of production theory on consumer behavior [1, 2, 5], we can treat the service produced in a participatory neighborhood park design as a production function of a good place. For traditional design professionals, functionality and aesthetics are two major attributes in a design product. In the Taipei experience, the production of public space can be viewed as two commodities; physical-level-benefits and idealistic-level-benefits. The users of public space learn to maximize their satisfaction by gaining these two commodities from everyday spatial consumption.

Specifically, these two commodities can be defined as follows: (1) physical-level-benefits: the value generated from design, with related outputs, which can be realized in the market. (2) A good planning and design project can enhance the efficiency of production, consumption and circulation in social, economical and cultural aspects, which are considered “idealistic-level-benefits”. The two commodities which participatory actors pursued in participatory design are produced using their input factors – municipal budget, time, knowledge about facility management, spatial manipulation ability and negotiation ability in design process. In the progress of participatory design, residents with different social status are not only different in their economic resources but also in their technical knowledge of space control, and this leads to different resource constraints for each resident in the community.

**Production Possibility Curve (PPC) as Resources Constraints**

In a competitive market, the price of a project design indicates how willing the owner is to pay. Nevertheless, the fee generates substantial financial income for designer. For project owners, physical schemes imply owners’ expectations with regard to safety, functionality, and economic benefits, which are designed to yield the greatest amount of satisfaction for the owners (so-called utility). On the other hand, with view taken from normative discourse, participatory design can produce “idealistic-level-benefits”.

Let  $I$  represent the “idealistic-level-benefits” which is the outcome of both participatory planning practices and utopian concepts, and  $X$  represent the “physical-level-benefits” which are functionalities that are easily observable, and can be easily capitalized in the market. The output  $X$  and  $I$  are the results of participatory design behavior which can be expressed in the form of a valuation function  $V(X)$  and  $V(I)$ .

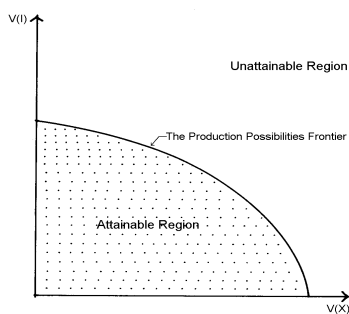


Figure 2: The PPC of designer

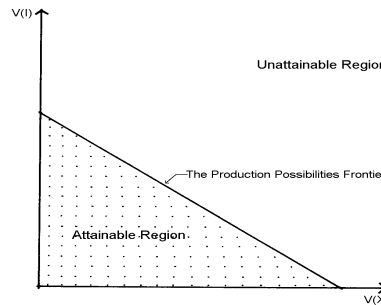


Figure 3: The PPC of public user

In Figure 2,  $V(X)$  and  $V(I)$  both represent the attainable resources (e.g. labor and capital) and technology conditions (creative ability, knowledge, and management ability) which designer and participatory user employ in the project, and achieve an efficient combination of production possibility frontiers under an efficient allocation of resources. A production possibilities frontier shows the different combinations of various goods that a planner can provide, given the available resources and existing technology. Any point on or inside the production possibilities frontiers is attainable. Points outside the frontier cannot be achieved with the available sources and technology. Therefore, each Production Possibility Curve (PPC) is the subject to limitations of the designer and user.

Figure 2 depicts the production possibilities frontier resulting from the input of designer and user. The designer can increase  $X$  product (move to the right in figure 2) only by devoting more labor and resources to increase the value of  $X$ . But, this simultaneously reduces the “idealistic-level-benefits” of the  $I$  product (move downward), which means less labor and resources remain available for  $V(I)$  product. And, the slope of PPC appears to be negative.

The slope of the production possibilities frontier graphically represents the concept of opportunity cost. Because inputs in the design profession tend to be highly specialized, the PPC is “bowed outward”. In general, as we move upward to the left along PPC (toward greater  $V(I)$  and smaller  $V(X)$ ), the opportunity cost of  $V(I)$  in terms of  $V(X)$  increases. In other words, as we move downward to the right, the opportunity cost of acquiring  $V(X)$  by giving up  $V(I)$  increases. The above-stated principle demonstrates that as the production of a certain article of goods expands, the opportunity cost of producing the other goods generally increases.

The above figures seem to state a technological regularity by which can be applied to a wide range of economic activities. However, for public users without specialized resources, the production possibility frontier can be depicted as a straight line (Figure 3). If the public users choose to cut back the production of “idealistic-level-benefits”, the marginal “Physical-level-benefits” stays the same. This is because  $V(X)$  and  $V(I)$  are both obtained from the market, and no specialized resources are needed for public users in choosing an ideal open space.

In this case, public space user loses no productivity in the switch of choosing a specific commodity. It is the same when we describe a linear combination of two different consumptive goods, as budget constraints for the consumer are constant. In such a case, it shows no specialized resources between two goods when the consumer allocates his budget in the commodity market. Therefore, for public users in general, the resource constraint is a linear combination of  $V(X)$  and  $V(I)$ . On the contrary, for idealistic design, with specialized resource constraints, the PPC is bowed outward (Figure 4).

Professional practitioners deal with the pragmatic needs of their clients, and employ their professional efficiency in satisfying their clients with design products such as professional drawings and tendering documents, which can be viewed as the effective capitalization of design works (Figure 5). They are keen to offer physical-level-benefits in design projects. However, academics are apt to create idealistic-level-benefits in their professional activities- $I$ . What was demonstrated in the Taipei experience was that the idealistic designers (or the academia scholars) preferred to develop “the creativity idea”. This is graphically illustrated by the manner in which the utility curve tends to retain a higher  $V_A(I)$  base line toward the

left-agglomerated iso-utility curve, due to this specific preference on  $V(I)$  commodity.

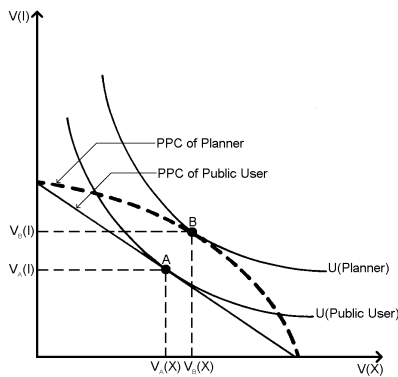


Figure 4: Differentiation of The Equilibrium Point between designer and user

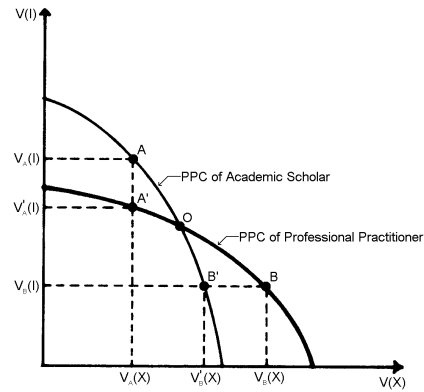


Figure 5: The PPC of academia scholar and professional practitioner

### The Complex Equilibrium of Participatory Design

From general theory of economics, we know that with a perfect market, the optimized demand-supply adjustment can bring forth an efficient result. In the realm of planning/design, pursuing an ideal living environment has its professional tradition. As a result, in a comparison between the user and the pragmatic professional practitioner in the marketplace, the equilibrium point for the idealistic designer (or the academic scholar) tends to have higher preference for  $V^*(I)$ . However, if the ‘idealist-level-benefits’ value can not be easily recognized by the user from the marketplace, the market values adjustment in the market will be slower. Furthermore, due to imperfect information, such values seem to need more transaction cost to achieve an optimization.

Education in the techniques applied to spatial design and management can improve the PPC profile for participatory users in the process of participatory design. However, the resource-constraint lines representing each group are varied. Participating citizens need to spend more time in the process, which is the opportunity cost of participation. For today’s nine-to-five office workers, limitations on available time and time cost seem to be the major consideration, and these determine whether the prospective participants attend the program or not, and the extent to which they can be involved. Also, participating citizens from different social strata have distinct ideals, visions and persistence. In the theory of local public goods, Tiebout (1956) proposed the concept of “Voting with feet” to explain the residents’ selection of public goods and maintain the level of local public good optimization [9]. However, in an official participatory process, neighborhood park design is a form of community “voting with feet”. In addition, all the ideals related to participatory neighborhood park design are unique in a single site.

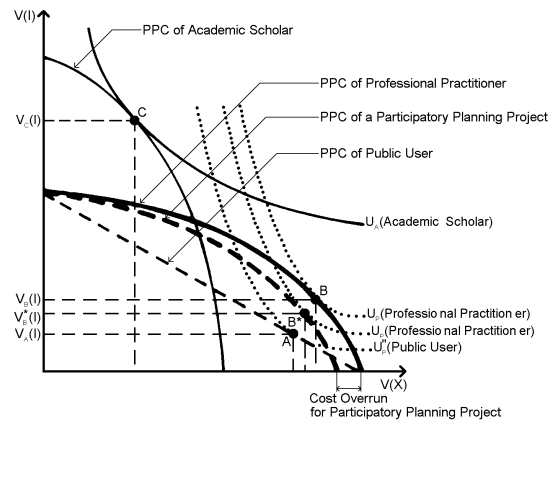
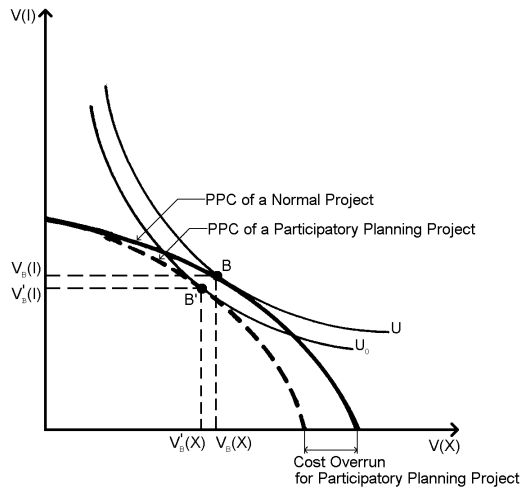


Figure 6: Equilibrium of planner/designer under project cost overrun.

Figure 7: The complex equilibrium between actors in participatory design

On the other hand, the co-production of participatory design, the input of labor, capital and technique provided by designers are exhibited in the form of design services, and presentation drawings. Professional designers receive design fees for carrying out design practices, and this is the real budget constraint of the design production. This budget is considered the base resource, which the designer can utilize and contribute to the entire project. With more procedures involved in communication and discussion of issues, the cost of employment and project production including presentation drawings, presentation panels, models, printouts and folders is much higher than that of traditional planning and design.

One of our illustrative examples shows that employment cost is about 64% of the total cost, and activity-based cost is about 24% of the total cost for a traditional non-participatory Neighborhood Park design in Taipei. In contrast, one of our participatory design cases for Taipei Neighborhood Park showed the employment costs and activity-based costs in a participatory design project increased 30% and 43% respectively. Therefore, an important consideration when contemplating participatory design processes is that the total cost could increase 30%. If a budget overrun does occur, the professional efforts could reduce the extent of their services, unless the planners hold a specific understanding in relation to ‘idealistic-level-benefits’. On the presumption of profit maximization, the designer would most likely be inclined to mitigate the pursuance of idealistic-level-benefits similar to the conditions shown in Figure 6. Therefore,  $V(I)$  would only be promoted within a limited range. Based on the actor’s resource condition and diversified preference, the equilibrium of choice sets exhibit totally different spectra (Figure 7).

**Conclusion**

Through the empirical significance of participatory design in Taipei Neighborhood Park, this paper has attempted to resolve the dilemma that results from the contradiction of marketplace values and community values in participatory design. This paper develops Lancaster and Becker’s analytical concept of production theory on consumer behavior to analyze the



concepts, value judgments, decision-making, and constraints of participating agents. Because of municipal budget constraints, the different agents' time-budget constraints, and ideological constraints between agents, different equilibrium points of choice behavior will result from different social agents. As a result, based on individual's resource conditions and preferences, the equilibrium of choice sets exhibit totally different spectra.

The main difficulties in participatory public space design are associated with the physical-level-benefits and the idealistic-level-benefits, which often face problems such as (1) inadequate information, (2) non-existing market, (3) public goods utilized by free riders, (4) public space being a physically dis-separable commodity with spatial fixity. In the real world, the viewpoints of public users, practicing professionals, idealistic planners, academic scholars, public affairs managers, and different groups of community users display diverse opinions about public benefits. In the process of participatory design projects, the designers' involvement and the time they spend interacting with the community in the project is limited. As a result, under certain historical and social conditions, instead of a single equilibrium point determined through market transaction price, the complex selection of "demand and production equilibrium points" will be quite diversified.

### Acknowledgements

The author would like to thank Professor Damien Trezise and Professor Yi-Feng Yang for their English grammar review of the paper.

### Bibliography

1. Becker, Gary Stanley, "A Theory of the Allocation of time," *Econ. J.*, September 1965.
2. Becker, Gary Stanley, *A Treatise on the Family*. Harvard University Press, USA, 1981.
3. Creighton, J., *Involving Citizens in Community Decision Making : A Guidebook*. Washington, DC: Program for Community Program for Community Problem Solving, 1994.
4. Gittell, Marilyn, *Limits to Citizen Participation: The Decline of Community Organization*, Volume 109, Sage Library of Social Research, Sage Publications, 1980.
5. Lancaster, Kelvin J., "A New Approach to Consumer Theory," *J. P. E.* Vol. 74 , p.132-156 , April 1966.
6. Moore, Gary T., D. Paul Tuttle and Sandra C. Howell, ed., "Environmental Directions: Process and Prospects", *Process and Prospects*. New York: Praeger, 1985.
7. Sanoff, Henry, *Community participation methods in design and planning*. New York : J. Wiley & Sons, 2000.
8. Sommer, Robert, *Social Design: Creating Building with People in Mind*, Englewood Cliffs, New Jersey: Prentice-Hall, 1983.
9. Tiebout, Charles M., "A Pure Theory of Local Expenditure", *J. P. E.* Vol. 64 , p.416-424, October 1956. .

**Kun-jung Hsu**

Kun-jung Hsu received his Ph.D. degree in Civil Engineering from Taiwan University. He is now an Assistant Professor and the Director of the Department of Construction Technology, Leader University. He is also a senior lecturer of the Graduate Institute of Building and Planning, Taiwan University. Dr. Hsu has twenty years' experience in professional practice as a senior architect and construction manager. Current research interests include housing economics, construction economics, community design and special topics on project evaluation.