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# Design Principles for Online Communities [\[1\]](#)

**Peter Kollock**

*University of California, Los Angeles*

## **SOCIAL COMPUTING**

The key challenges the Internet community will face in the future are not simply technological, but also sociological: the challenges of social interaction and social organization. This is not to diminish the difficulties of creating new technologies, but rather to emphasize that even these tasks will pale besides the problems of facilitating and encouraging successful online interaction and online communities.

The problems of social interaction and order are often ignored in the software and online industry. While many people have begun to talk about "social computing," as it is used now it is a thin term that applies more to user interface design than to actual social interaction between two or more people. Common responses to the challenge of designing systems that support robust social interaction include pretending this issue is not important, or that there is nothing one can do about it, or that it is simply a user interface issue. In what follows, I wish to argue that each of these responses is incorrect.

My focus is on the graphical virtual worlds that have recently been released – worlds that have added a 2-D or 3-D visual representation of a space to go along with the more traditional text communication that occurs in such systems as MUDs or IRC. I speak as a sociologist who specializes in the study of cooperation, exchange, and collective action in communities, both online and face-to-face.

## **BUILDING ONLINE COMMUNITIES**

There is no algorithm for community. That is, there is no step-by-step recipe that can be followed that will guarantee a specific outcome. Building community is a fundamentally

different activity than writing computer code: code does not write back and code does not respond strategically to one's actions.

What makes for a successful online community is often poorly understood. At this time (1996), the tendency of those involved in building graphical virtual worlds is to create visually compelling worlds that look good, but do a poor job of fostering social interaction. Many of these systems have more in common with lonely museums than with the vibrant communities they set out to create.

It is telling that that the most successful online graphical community at this time – WorldsAway – is also the system with the oldest and least impressive "look." Without question it is the most developed and most interesting graphical online world today, despite its stiff and cartoon-ish 2-D graphics. The community succeeds not because of flashy graphics, but because it contains many of the requisite elements for a successful community: identity persistence, a sophisticated set of rituals, an internal economy with a monetary system, property rights, a rich set of documents recording the history of the community, a coherent sense of space, casual interaction caused by the fact that one must "walk" most places, and a moderate level of risk.

WorldsAway certainly has its problems and limitations, but the lesson of its success in creating a lively, elaborated social system is that there are design elements that can have an important effect on encouraging (though not guaranteeing) successful online communities.

While there are no algorithms for community, there are some very useful heuristics. In the next section I draw from research in the social sciences as well as the practical experience of long-time participants in online groups to discuss various design principles for online communities.

## **DESIGN PRINCIPLES**

Many of the design principles I discuss below derive from work on cooperation and social dilemmas. As Kollock and Smith (1996, p. 109) state: "At the root of the problem of cooperation is the fact that there is often a tension between individual and collective rationality. This is to say that in many situations, behavior that is reasonable and justifiable for the individual leads to a poorer outcome for all. Such situations are termed *social dilemmas* and underlie many of the most serious social problems we face." [2]

There is a large research literature in sociology, psychology, political science, and economics on social dilemmas, and I highlight here two of the most influential works in the area.

### ***The Bedrock of Cooperation***

The simplest possible case of a social dilemma involves two people faced with the decision of whether to cooperate or behave selfishly. Both can gain by cooperating, but

there is a temptation to be selfish. If both people behave selfishly, however, they are both worse off than they might have been otherwise. The most famous example of this two-person situation is called the *Prisoner's Dilemma* and there is a huge amount of research devoted to it. One of the most important studies of the Prisoners Dilemma is Axelrod's (1984) book on the Evolution of Cooperation. Axelrod identifies three conditions that are necessary for even the possibility of cooperation. In other words, without these three elements there is little or no hope that cooperative relationships will emerge and persist.

The first condition is that it must be likely that two individuals will meet again in the future. [3] If this is the only time someone will be interacting with another person, or if this is the last time, there will be a great temptation to behave selfishly. Successful communities, in other words, must promote ongoing interaction. Godwin (1994) makes a similar point in his essay on principles for making virtual communities work when he stresses the importance of promoting continuity in online groups.

The second condition is that individuals must be able to identify each other. The third condition is that individuals must have information about how the other person has behaved in the past. If identity is unknown or unstable and if there is no recollection or record of past interactions, individuals will be motivated to behave selfishly because they will not be accountable for their actions. Knowing the identity and history of a person allows one to respond in an appropriate manner. If information about individuals and their actions is shared among the group, this also encourages the development of reputations, which can be a vital source of social information and control. This theme is echoed by Godwin (1994) when he suggests that online communities should provide institutional memory – durable records of the events and history of the group. Godwin (speaking here of asynchronous textual communication) also recommends designing systems that do not limit the length of a member's posting and that encourages members to read what has been said in the past about the subject at hand. These features have the effect of increasing the amount of information about members and increasing the extent to which this information is distributed.

### ***Design Principles of Successful Communities***

Another very influential work in this general area is Ostrom's (1990) book on Governing the Commons. Unlike Axelrod, she examines whole communities acting together rather than just two-person interactions. She analyzes a wide variety of face-to-face communities that have either succeeded or failed in managing collective resources and social dilemmas. Ostrom identifies a number of features that successful communities seem to have in common. [4]

Ostrom's first point is that group boundaries must be clearly defined so that there is a clear sense of who might make use of collective resources and in order to prevent individuals from entering the group, making use of its resources, and then departing without ever contributing to the group. Despite the importance of marking borders and group identity, there are relatively few tools available to members of online communities to create and maintain these boundaries (Kollock and Smith 1996).

She also found that in successful communities the rules governing the use of collective resources were well matched to the local needs and conditions. In other words, it was important for each group to customize the norms and rules that governed their behavior. Ostrom also found that in successful communities most of the individuals affected by these rules were able to participate in modifying them. Further, the rights of community members to devise their own rules was respected to some degree by external authorities. These features meant that those individuals most affected by community rules, and who possessed the local knowledge necessary to craft effective rules, were able to create and modify a set of rules that were well-matched to their goals and environment.

Ostrom also found that even the most successful community requires a system to monitor and sanctioned members' behavior. However, she found this works best when the monitoring is carried out by the community members themselves rather than by an external authority. Godwin (1994) also recommends that users be allowed to resolve their own disputes without outside interference. Successful communities were also marked by the fact that they used a graduated system of sanctions – small sanctions for first offenses that escalated if the person continued to break the community rules. Ostrom also found that even with a well designed set of rules and an internal monitoring and sanctioning system, some conflict was inevitable. Thus, it was important that community members have access to low-cost conflict resolution mechanisms.

### ***Bringing the Physical into the Virtual***

Neither Axelrod nor Ostrom were concerned with online communities. Thus, there are a variety of features of face-to-face interaction and the physical world that could simply be taken for granted in their analyses. As the online world is a wholly constructed environment, it is worth considering what features, constraints, and challenges of the physical world might be profitably introduced into virtual worlds. At first this may sound a bit odd – why introduce constraints and difficulties if one can design a world without them? But a vibrant community requires challenges. [\[5\]](#)

Scarcity and risk are an inevitable part of the physical world. Should they be programmed into online worlds? The lesson of successful MUDs and WorldsAway is that scarcity and risk are crucial for an interesting and engaging world. And it is not simply a matter of keeping things lively. Moderate amounts of risk are required for the development of trust (Kollock 1994) and encourage the formation of groups and clubs as a way of managing that risk (or exploiting it, in the case of a guild of thieves). [\[6\]](#)

Other features of physical communities that should be incorporated into online worlds include the ability to change and modify one's environment and the ability to exchange objects and services in some sort of economic system. The popularity in WorldsAway of apartments (which can be decorated by the owner) and tokens supports this point.

## **CONCLUSION**

While this has been a very brief discussion of work on cooperation and collective action, there are interesting implications even in these abbreviated comments. It is said that one of the attractive features of online interaction is the fluidity of identity – one can adopt a new persona with each and every interaction. But work on social dilemmas argues that identity persistence is a necessary feature of cooperative relations. Online worlds can eliminate the threat of theft and many forms of scarcity, but without risk online communities will be dull and will not provide the possibility for the development of high levels of trust.

There are many other points that could be made, but the general issue is that design decisions need to be evaluated for their effects on social interaction and organization. People are working hard to make online systems that are instant, seamless, and fully interconnected, but there are also social benefits to lags, seams, and islands.

Social interaction and organization in online communities is not an issue that can be ignored, nor is the challenge simply to design a better user interface. But it is also incorrect to say that there is nothing much one can do – there are important steps that can be taken to encourage the development of successful online worlds.

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## **APPENDIX: Lists of Design Principles for Communities**

- Axelrod's (1984) requirements for the possibility of cooperation:
  - Arrange that individuals will meet each other again
  - They must be able to recognize each other
  - They must have information about how the other has behaved until now
  
- Ostrom's (1990) design principles of successful communities:
  - Group boundaries are clearly defined
  - Rules governing the use of collective goods are well matched to local needs and conditions
  - Most individuals affected by these rules can participate in modifying the rules
  - The right of community members to devise their own rules is respected by external authorities
  - A system for monitoring members' behavior exists; this monitoring is undertaken by the community members themselves
  - A graduated system of sanctions is used
  - Community members have access to low-cost conflict resolution mechanisms
  
- Godwin's (1994) principles for making virtual communities work:
  - Use software that promotes good discussion
  - Don't impose a length limitation on postings
  - Front-load your system with talkative, diverse people
  - Let the users resolve their own disputes

- Provide institutional memory
  - Promote continuity
  - Be host to a particular interest group
  - Provide places for children
  - Confront the users with a crisis
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## Footnotes

[1] Direct correspondence to Peter Kollock, Department of Sociology, UCLA, Los Angeles, CA 90095-1551 ([kollock@ucla.edu](mailto:kollock@ucla.edu)). Originally presented at the *First International Harvard Conference on the Internet and Society*, 1996. Minor revisions have been made. For a fuller discussion of these issues see Kollock and Smith 1996, Kollock 1998a, and Smith and Kollock 1998.

[2] For general reviews of the research on social dilemmas, see Kollock 1998b, Messick and Brewer 1983; Dawes 1980.

[3] A summary list of design principles from various authors can be found in the Appendix.

[4] See Kollock and Smith 1996 for a fuller application of this work to the Usenet.

[5] Godwin (1994) goes even further in arguing that the most important element in the development of an online community is confronting its members with a serious crises. While it is certainly true that a superordinate threat to a community that requires its members to work together is one of the most effective ways of creating solidarity (Sherif and Sherif 1953), intentionally scripting such a crises is difficult at best (though this has not dissuaded many politicians from trying to use this dynamic by, e.g., invoking the specter of an outside threat).

[6] Note that I speak of *moderate* risk. If the risk is too great and the temptation to behave selfishly too strong, the outcome is likely to be one of widespread distrust and exploitation.