

ESSAY

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# NOTES ON THE DESIGN OF PARTICIPA- TORY SYS- TEMS - FOR THE CITY OR FOR THE PLANET

By Usman Haque

————— Cooperation is difficult. Even when everybody agrees on an end goal, and even when everybody agrees on what is needed to achieve that end goal, it does not mean that everyone (or even anyone) will be able to take the first step, which is the most important step. Yet, while individualistic behaviour within a group results in short term benefit for the individual, competition between groups (anecdotally) favours those that have more altruistic individuals.

————— What follows is a discussion of the paradoxical structures of collaboration and ways that the paradoxes can be harnessed, illustrated occasionally with concrete, though anecdotal, examples. It is based on no research other than direct experience in trying to build participatory systems (see [www.haque.co.uk](http://www.haque.co.uk)).

### 1. Dilemmas

————— In Karachi, a city well-known for its traffic congestion, most people agree that the traffic is a problem: it creates pollution, consumes energy and adds stress to every journey. Most people also agree that, if people just drove more respectfully, everyone would benefit. So, if everyone agrees on both the goal and a means to achieve it, why don't they just do it?

————— They don't because the first mover is the one who suffers the most. Whoever attempts to drive "better" is the one who gets stuck on the road as others take advantage of the gaps that this leaves. Even if you believe that altruistic behaviour is the "right" thing to do, it is unlikely (or even impossible) that everyone will believe the same thing at the same time, and therefore it is unlikely to succeed.

————— This dilemma (reflected in so-called "prisoner's dilemma") appears in deliberations concerning climate change as well: which ever country or company makes the first step towards ameliorating environmental conditions will be the one who takes on the most risk and will be (in the short term –and it's the short term that usually matters most to individual decision makers) most economically disadvantaged. Whether that risk is real or not is irrelevant: it is the perception of risk that prevents the action.

————— Every participatory system needs to acknowledge this limitation: you cannot rely on the end goal being incentive enough to encourage individuals to participate and cooperate on achieving the end goal.

### 2. Incentives

————— It is even more difficult when you don't have complete agreement, which is the case in almost all situations. A participatory system therefore needs to have intermediary, short term incentives from which participants can gain tangible benefits. This both provides motivation and helps build trust. By enabling participants to engage on a short term basis (they can "opt out" easily after taking that first step) it doesn't require them to commit to the end goal –and not requiring commitment opens the door to much wider participation.

————— Even better, it enables those who do take the first step to act as "evidence", to those who don't, that participation does actually result in tangible benefits (albeit short term). For example, distribute small orange juice cartons to Karachi bus drivers as a "thank you" for not using their horn for a stretch of road –once they have perceptibly decreased noise, \*then\* get the shopkeepers (who will have noticed a difference in the noise level that was affecting their ability to do business) to offer their own products as the incentives (and for publicity purposes).

### 3. Increments

————— Which introduces a second fundamental requirement in participatory systems: they must be designed such that incremental participation results in incremental gains; they cannot depend on an "all or nothing" situation. If a proposition depends on everyone initially agreeing; if there is no possibility of movement before everyone has agreed to move; then the likelihood of movement is vanishingly small.

————— More useful is to structure participation so that individuals benefit immediately from participation. Even better is to design a system in such a way that the gains are logarithmically tied to the amount of participation; i.e. so that if three individuals participate, they each get more tangible "benefit" than if only two did. In the noise-level-orange-juice above, once the bus drivers and shopkeepers are content (and the latter have two benefits: quieter shops and street-level publicity for their goods) then others can be introduced into the system (e.g. hawkers and beggars).

#### 4. Trust and Evidence

————— The difficulty in fostering cooperation comes from a lack of trust. So the question is how to build that trust. Trust largely comes from evidence; and self-constructed evidence is the best of all because it doesn't require second-hand knowledge. It also makes participants more directly aware of the issues and limitations of a system.

————— If a participatory system relies on short term incentives (think of sugar-coated vitamins), then evidence of those incentives, and evidence that those incentives will be gained, are most important of all. That is why the first step of the scheme described above requires somebody (probably the designer) to provide that first orange juice: the shopkeepers need convincing that it's going to work!

#### 5. Tools for Evidence

————— So one of the most important tasks in designing and building a participatory system is to design and build the tools that enable intended-participants to construct their own evidentiary rationales for participating. Determining indicators for success is crucial.

————— If you can get people to convince themselves that short-term participation is good for them, then your job is already half-done. For noise pollution, provide some means for evaluating the noise level. This might be technological (a sound level meter) or it might just be practical ("see whether you can be heard from across the street").

#### 6. Opting Out

————— Design the system so that individuals that distrust still have some means for deciding on participation. In most real-world situations, "opting out" has a definite impact on the system (e.g. those who decide to opt out of recycling have wider longer-term impact that is felt by both recyclers and non-recyclers alike), and must be considered to be one of the participation options. More important therefore is to structure participation so that the choice to would-be participants is much more than simply "participation" vs. "non-participation". The choice to "opt out" must not be made into a value judgement by those who "opt in". The threat of castigation or punishment is not a useful incentive. Increased numbers of possible routes to participation is.

#### 7. Granularity

————— Consider the granularity of participation: how varied can this be made? In any participatory system there will be those with different skillsets, different responsibilities, different desires, different commitment levels and different time-availability: think of these as different "resolutions" or "granularities" of participation. To encourage the widest range of collaboration, the system can be designed such that those who want to dive into and affect the deepest, but finest, details are able to, just as those who only want a short, low-impact (low resolution) commitment are also able to do so.

————— Enable programmers to recode, passers-by to ignore and more interested individuals to tinker, and you will find a lot more drifting up and down the granularity ladder.

#### 8. Coupling

————— Since encouraging cooperation can be depressingly difficult and energy-draining, finding ways to take the weight off of the building process is vital. Rather than

trying to develop solutions to individual problems, construct means for incremental incentivised actions in two seemingly unrelated domains to benefit each other. Enable the energy expended in one operation to be coupled to gains in another operation.

———— Building a homeostatic collection of parts means that the system can start to self-regulate: it doesn't rely on laws or policies imposed from above. It continues to thrive under its own energy, not yours. Consider how incentivising increased garbage collection can be coupled to reduction in horn use with both processes encouraging energy conservation –it *can* be done!

### 9. Complexity

———— As different domains and entities are coupled, the result is an increasingly complex system, one that is difficult, if not impossible, to represent and communicate. It may (in fact *should*) be so complex that a single individual cannot explain it to others. If it's that complex, it means it's beyond the professional capabilities of any single individual: it *demand*s cooperation.

———— In this context, it would be inappropriate (and patronising) to imagine that a designer is there to "make things simple". Rather, a designer (for all systems have designers) is there to help define an end goal; a designer is there to help build the first steps (and tools for making steps) to achieving that goal; and, most importantly in a participatory system, one in which the designer is *part* of the system, a designer is there to ensure that that goal is *not fixed* but can be overridden by participants.

———— It must therefore be possible for the end goal, and the means for achieving that end goal, to change and respond to new external inputs, new participants, new situations.

### 10. Public Spectacle

———— The complexity of a proposition raises the question of whether it might discourage members of the public from participating at all. While incremental incentives, granularity and evidence help with this, one of the best strategies for getting people involved is the public spectacle: putting it plainly, it attracts people's attention. If a public spectacle is engaging, it encourages people to observe, ask questions, occasionally even to participate. People need make no long term commitment –sometimes they just do it because it is "fun". And sometimes that's enough to get people to make the first step.