



Cast Off the Shackles of Academia! Use Participatory Approaches to Tackle Real-World Problems With Underserved Populations

By D. Layne Coppock

On the Ground

- When scientists or change agents engage other cultures to problem-solve, there is a high risk of miscommunication and project failure.
- This process can be further crippled by traditionally rigid, top-down academic approaches that focus investigators on predefined issues lacking relevance to the top-priority concerns of local communities.
- Participatory, adaptive methods of public engagement, in contrast, are now being increasingly used in such situations. They help researchers work more effectively by building more authentic partnerships with stakeholders so that real problems and sustainable solutions can be identified.
- Such methods can also promote insightful, interdisciplinary science and more effective public service.

Keywords: participatory rural appraisal, participatory action research, community-based natural resource management, innovation systems, social-ecological systems, engaged scholarship.

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In our careers as applied scientists we aspire to solve big problems in the real world. We conduct carefully designed studies, publish papers in well-regarded journals, and train talented graduate students along the way. Then we “cross our fingers” and hope that the published work catches the attention of people who will translate the findings into a new technology or management

practice, push for implementation, and move humanity forward. Or maybe not...?

Perhaps like many other range scientists who began their careers in the 1970s and 1980s, I began by working in the context of descriptive field studies. These studies focused on matters such as plant-herbivore interactions, livestock feeding behavior, diet selection, and productivity. I conducted a few experiments concerning ruminant nutrition and responses of grasses to simulated grazing. Subsequently, I have focused more on the human dimensions of rangelands, using descriptive information derived from social science methods. My work has been conducted both in the western United States and overseas.

In most of these cases, my research was fairly conventional, that is, academic in orientation and distant from “real-world problem solving.” But to be fair, the funding supporting my studies was either targeted at the generation of basic knowledge, or if it was intended to generate knowledge for application, there were no mechanisms in place to allow application to happen very easily.

My Epiphany: The Disconnect Between Applied Research and Local Problem Solving

In the late 1980s, I was traveling in northern Nigeria with a colleague, and we were visiting some well-publicized research projects that were purportedly on the cusp of solving some really big problems of local producers of cattle and goats. Then I happened to ride with a talkative taxi driver, who told me that what the locals really wanted were systems to produce pigs more efficiently because that was where the money was. For the first time, I realized that the agenda of the researchers could be markedly different from that of producers; the propaganda flowed freely from the research machine, and stakeholder input was not considered in the process of problem identification. This was paradoxical, given that the mandate for these research teams in Nigeria was to solve animal production problems and reduce poverty. The research, indeed, resulted in many written outputs, but there was little hope of impact on the communities. The system, in this case, was broken.

In this article, I first describe how and why participatory research has emerged to address the “disconnect problem” described above. By “participatory research,” I refer to methods whereby stakeholders—typically resource users—provide input that fundamentally helps shape research priorities and approaches. I then discuss some pros and cons of participatory versus conventional research in the context of local problem solving. I conclude by providing my assessment as to why I feel it is now time for participatory research to gain momentum and be adopted by mainstream rangeland professionals who desire to see real-world impacts emanate from their work.

The Advent of Participatory Approaches

Starting in the 1970s, efforts were made to better connect applied research with producer problems in the developing world. In some respects, this was a fringe movement that sought to fill a gap created by the lack of Extension capability. One early example of such approaches was “Farming Systems Research,” where researchers engaged farmers in an iterative process of constraint identification and alleviation.¹ Despite the inherent logic and value of this methodology, it never really became mainstream.

Perhaps the boldest critiques of the ineffectiveness of conventional rural development tactics have been made by Robert Chambers, starting in the early 1980s.^{2,3} Chambers illuminated many of the disconnects between the world of “development experts” and the needs of the rural poor. His impassioned pleas for professionals in power to discount their top-down approaches in favor of putting a higher value on the wisdom and capabilities of rural people have inspired a generation of scholars and practitioners in the international development arena.

Chambers and others also pioneered the use of innovative field methods, such as *participatory rural appraisal* (PRA). The philosophy of PRA is epitomized when development experts form authentic, power-sharing, problem-solving partnerships with rural communities.⁴ The main focus of PRA is to identify the key, solvable problems in a community and then devise a *community action plan* (CAP). The CAP lays out the pathway for change and identifies the human, technical, and financial resources needed to move forward. In the past decade, PRA has moved from the domain of informal field manuals to that of scholarly texts.⁵

Although the PRA approach has been adapted to fit a variety of circumstances, the core toolkit involves about a dozen elements. These underpin a process of in-depth community engagement and information generation. This includes the use of group meetings, personal interviews, and independent observations (Table 1).

A PRA can be conducted in an unrestricted format or a restricted (sectoral) format. An unrestricted format can reveal community problems from almost any realm that can be publicly discussed, whereas a restricted format could focus on specific issues related to agriculture, natural resource management, water, public education, gender, and so on.

Although the unrestricted format has the disadvantage of having less predictable outcomes, it can be very useful because a much wider assortment of problems is ranked and discussed. This makes it clearer, for example, how natural resource problems might compare with social problems in a ranked list of community priorities. This can reveal why some problems receive enthusiastic community response and others less so. Skilled practitioners can “connect the dots” of seemingly disparate problems and solutions from an unrestricted PRA into a unified approach for problem solving.

The initial diagnostic phase of a PRA can take a week or more of concentrated effort. The PRA process is especially valuable for “experts” who have been tasked with making recommendations as to how the livelihoods of people in an underserved community might be improved. The irony, of course, is that the experts are often navigating a system foreign to them, and they are therefore likely to make erroneous recommendations.^{2,3}

Another movement involving participatory approaches began in the United States during the 1980s. This was in response to a need for problem solving in a number of sectors, including public education and private industry. Action research (also referred to as *participatory action research* [PAR]) is another process whereby researchers or external change agents work closely with project beneficiaries.⁷ The PAR approach involves a series of iterative steps shown in Fig. 1. Some of the voices advocating for the increased use of PAR have been “radical sociologists” seeking new frontiers for academic social science.⁸ As will be discussed, PRA can be combined with PAR because they are complementary. A PRA provides a problem diagnosis, whereas a PAR can provide the research details (often via conventional means) that support the creation of new technology, management systems, or policy interventions needed to solve the problem.

It is notable that there have been some updates in the terminology for PRA, as well as subtle changes in methods to better incorporate themes such as sustainability or women’s empowerment. A more recent area of inquiry related to PRA or PAR is called “innovation systems.” Innovation systems, as applied to rural development, is European in origin and expands the scope for multi-stakeholder engagement over larger organizational, temporal, and spatial scales.⁹ In addition, broader recognition of the importance of the “engaged university” in bridging gaps between applied research and societal problem solving also speaks to the need for more effective participatory processes.¹⁰

My First Exposure to Participatory Approaches

My research approaches—previously described here—undoubtedly changed nearly 15 years ago when I was introduced to PRA and PAR in the context of a project in East Africa. The main goal of the Pastoral Risk Management (also known as PARIMA) project—which operated in Ethiopia and Kenya from 1997 to 2009—was to find ways that pastoralists could better manage the risks imposed on their livestock-based livelihoods by drought, economics, or social conflict. Avenues for improving risk

Table 1. Example of participatory rural appraisal (PRA) tools and procedures as modified from a 5-day community exercise conducted in Bajura District, Nepal, during 2013.^[6]

No.	Activity	Comment
1	Social resource mapping	Physical layout of community; spatial relationships among dwellings, land types, infrastructure, etc.
2	Transect walks	Verification and augmentation of information obtained from the social resource mapping exercise
3	Farm sketches	Depictions of typical farms or other operations of interest
4	Wealth class assessment	Describes households in terms of wealth class membership and where people live or work
5	Historical timelines	Describes important social, environmental, and other historical aspects of the community
6	Seasonal farming calendar	Describes the seasonal occurrence of various activities pertaining to farming, livestock raising, etc.
7	Gendered activities	Describes how activities are structured with respect to participation by males and females
8	Livelihoods assessment	Describes how wealth classes (above) are related to various occupations and other community endeavors
9	Institutional analysis	Describes the access of the community to various public and private services and institutions
10	Focus group discussions	Uses these to target special topics of interest that have emerged from previous work (above)
11	Plenary problem and solution ranking, phase 1	Convenes representative community members to identify and rank key problems and solutions in a public forum that the PRA is expected to address Can be based on a restricted or unrestricted format
12	Breakout groups review plenary phase 1 outcomes	Convenes breakout groups based on social, economic, or other criteria to encourage candid, private critiques of, and suggested changes to, phase 1 outcomes
13	Plenary problem and solution ranking, phase 2	Convenes representative community members to review and modify the rankings of key problems and solutions in a public forum that the PRA is expected to address based on input from the breakout groups
14	Create community action plan (CAP)	Convenes the plenary group or subsets of keenly interested community members to identify resources and responsibilities needed for problem solving Committed to paper and requires multiple drafts
15	Share CAP with community for comments and finalize	The CAP undergoes community review and is finalized The CAP blueprint becomes part of an integrated project

management were thought to include 1) improved use of information by households for planning purposes; 2) connecting households to external (i.e., safety net) resources; and 3) finding ways to diversify household incomes and assets to include livestock and non-livestock components.

My African team members and I had worked in these rangelands for many years and were intuitively searching for new ways of studying pastoralism and engaging pastoralists. We were not sure where to turn, however, given that our backgrounds were founded on conventional methods. We then hosted a field training session in 2000 for local

(Ethiopian) professionals to learn the PRA approach from a regional expert, Dr Francis Lelo of Egerton University, Kenya. We had heard that PRA was useful, but we knew little else.

Following classroom instruction, the trainees were organized into teams and conducted parallel PRA diagnostics among several communities of settled pastoralists living near the main town of Yabelo. When the teams were reconvened after a few days to compare results—merely as a training exercise—we were amazed at what we learned about risks and risk management as viewed by the people. We were also

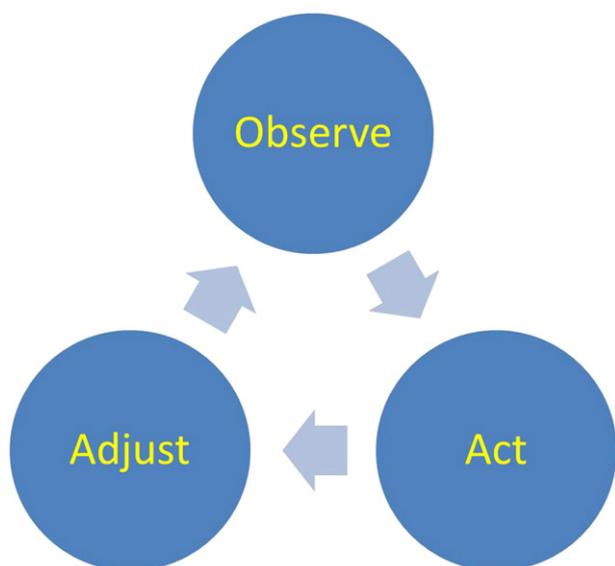


Figure 1. The iterative nature of participatory action research (PAR). (Courtesy of D. Layne Coppock.)

surprised at the high degree of repeatability of the findings from the communities.

Overall, poverty and hunger were seen as the core problems, and the diversification of incomes and assets was viewed as the road to success. To achieve livelihood diversification, illiterate people needed access to nonformal education on micro-finance and entrepreneurship as well as how to engage in effective collective action (i.e., cooperative behaviors). There was one major subsequent discovery: The people who stepped up to lead transformative processes were, almost exclusively, poor women who had been marginalized in this society (Fig. 2).

The rest, shall we say, is history. Following the training exercise, we repeatedly conducted PRAs with volunteer communities. The CAPs focused on income and asset diversification, with women leading the way. Later, PAR was used to clarify details that were important in facilitating innovation adoption in support of livelihood diversification. The training model that evolved was ultimately shaped by bottom-up as well as top-down wisdom (Fig. 3). The bottom-up wisdom reflected local knowledge and circumstances, whereas the top-down wisdom reflected knowledge from the outside world that had been inaccessible to locals. The project was able to build capacity in the community, train young professionals, and publish peer-reviewed papers.^{11,12} ⁱ

ⁱ The project has recently received the 2015 Scientific Excellence Award from the Board of International Food and Agricultural Development (BIFAD), an advisory body affiliated with the United States Agency for International Development (USAID). The award recognizes research projects that lead to significant and timely societal impacts in the developing world. <http://www.aplu.org/news-and-media/blog/board-for-international-food-and-agricultural-development-names-scientific-award-for-excellence-winners>.

How Participatory Approaches Have Changed How I Work

Since the PARIMA project, I have been involved in two other projects where PRA and PAR have been employed. The combined approach has quickly led to new discoveries and has paved the way to achieving a positive impact on very different communities in only a few years. I have become more skilled at using participatory methods.

For example, in a climate-change adaptation project in western Nepal, PRA was used to identify the priority needs of small farm communities. The key need was improved access to drinking water, followed distantly by livelihood diversification, diversification of cropping systems, and more opportunities to sell goats (Fig. 4).¹³ PAR has been initiated to assess the effects of interventions on the development of human and social capital and the ability to adapt to climate change.

Back in southern Ethiopia, another project was charged with finding opportunities to boost range and livestock productivity, given the growing human populations, extensive land degradation, and climate change. This seemingly impossible task was also saddled with a timeline of only 3 years. Use of PRA and PAR, however, created a project beyond our expectations. The PRA process revealed that what the pastoral communities desired most, by far, was improved access to drinking water for both humans and livestock. This was distantly followed by the need for improved range management and better access to public services (Fig. 5).¹⁴

Interventions monitored on the basis of the PAR philosophy have focused on pond catchment protection using thorn-bush fencing and gully repair; improvements in plant cover in the catchments have quickly led to reduced rates of pond siltation, improved pond water-holding capacities, and better water quality for human consumption. Pond catchment protection practices have already been adopted by the target communities.

Although not all range research projects will be amenable to the use of PRA and PAR, when the opportunity to address problems presents itself, it is hard to imagine any other approach that would work better. The use of PRA in Nepal and Ethiopia illuminated pathways to progress not previously perceived and helped better target the research portfolio. In Nepal, we expected the need to improve human micronutrient intake to dominate the priorities of farm families, not the need to access more water. In Ethiopia, we expected herd diversification from grazing animals to browsing animals to be a dominant need, not the need to access more water. Participation helped us shift our focus from prior expectations and made both projects more relevant.

Participatory Methods Can Provide Strong Tests of Hypotheses

Descriptive research concerning people on rangelands is based on results from surveys, focus groups, interviews, willingness-to-pay studies, direct observation, or case studies. These methods are often challenged by weak hypothesis testing because of the inability to conduct experiments. There



Figure 2. Borana women who formed a collective action group in southern Ethiopia. (Photo courtesy of Claudia Radel.)

are exceptions, of course, but accurate determination of cause and effect in most descriptive studies can be difficult.

Given sufficient time and resources, however, full implementation of a participatory process can provide strong tests of hypotheses. This is because change is induced by project interventions, and the effects can be tracked over time. If the process can be constructed in at least a quasi-experimental format, cause and effect can be better assessed.

My colleagues and I conducted such work on the PARIMA project in the context of how investment in capacity building altered the attitudes and fortunes of Ethiopian pastoral women; treatment groups were comprised of those who volunteered for several years of training (Fig. 3), while control groups were comprised of similar

individuals living in the same communities but who had remained on the sidelines.¹¹ In Nepal, similar communities have been paired as treatment sites versus control sites, where inhabitants of the former receive inputs based on PRA assessments to evaluate the efficacy of social or technical interventions on climate-change adaptation. This illustrates how participatory projects can be modified into quasi-experimental formats to directly test hypotheses. Again, in southern Ethiopia, our direct observations of the willingness of pastoralists to contribute unpaid labor to pond catchment rehabilitation illustrated the value they placed on project interventions. This provided hard evidence in support of the hypothesis that water was, indeed, a high-priority problem that had to be addressed.

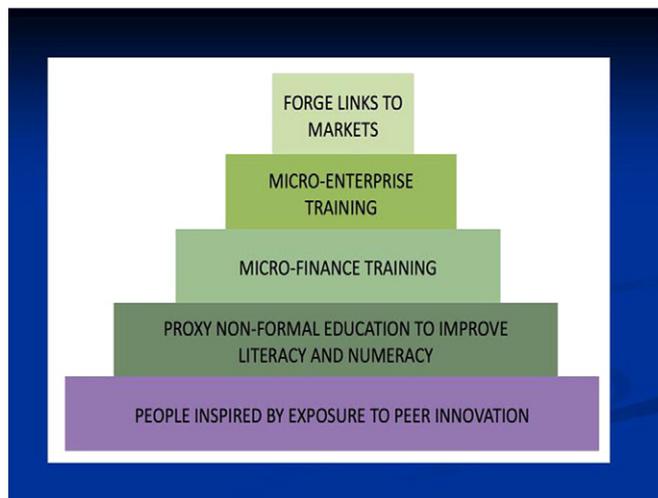


Figure 3. Stepwise model for building human and social capital among Ethiopian pastoralists. This model was used in the PARIMA project, starting from the bottom up. This process was identified from a combination of participatory rural appraisal (PRA) and participatory action research (PAR).¹²



Figure 4. Community members in Bajura District, Nepal, engaged in a participatory rural appraisal (PRA). (Photo courtesy of Divakar Duwal).

Pros and Cons of Participatory Approaches

The material I have presented thus far gives a fairly rosy picture of participatory methods, but there are challenges that must be noted as well. Some prominent pros and cons are shown in [Table 2](#). My attention was given to the pros in the sections above, but I focus more on the cons below.

Researchers and Extension professionals today have a full plate of demands on their time. The expectation is that peer-reviewed publications will be produced in a steady and seemingly ever-increasing flow. It is likely that compared with conventional research, participatory approaches take more time, in general, for each publication. The reason is the added

transaction costs for public engagement and project documentation.

Participatory approaches can also require significant time investment to generate important outcomes. The success of the pastoral women's empowerment process in southern Ethiopia was largely attributable to our ability to secure 9 consecutive years of grant funding; substantive change in rangelands takes time! The need for reliable, longer-term funding for successful participatory work is another disincentive.

The 3-year funding cycles that typify grant making today are risky in terms of accomplishing real-world problem solving. Because participatory processes often require



Figure 5. Community members in Yabelo District, Ethiopia, engaged in a participatory rural appraisal (PRA). (Photo courtesy of Brien E. Norton).

Table 2. Some differences between participatory research methods and conventional research methods in the context of local, community-based problem solving.

Topic	Participatory Research	Conventional Research
Research innovation	Higher	Lower
Publication output	Lower	Higher
Problem solving	Higher	Lower
Funding required	Higher	Lower
Transaction costs	Higher	Lower

Source: Author.

considerable time to implement, researchers and change agents who use these methods may cut corners to speed things up. This, however, can compromise the quality of the process.

There is also a risk that participatory approaches can require more resources compared with conventional research. The determination of priority interventions for problem solving in a PRA is based on the gravity of the problems as well as the feasibility of implementing sustainable solutions. In other words, if the cost of a solution is prohibitive, the problem should not emerge as a priority in a CAP.

In my experience, interventions that involve building human or social capital are relatively inexpensive and effective; they can be accommodated within typical project budgets or funded using ancillary opportunities. Interventions involving matters such as water development, rangeland rehabilitation, or livestock marketing, however, can unexpectedly require very large amounts of funding. This can cause stress because there is sudden pressure to secure more money so that the project can stay on course. A related issue is that a project based on public participation must deliver results. Effective participation is founded on project transparency and trust building; trust is destroyed when a project fails to meet community expectations. Therefore, once a project has committed itself to participation, it must ensure that it can secure the resources needed for success.

Sometimes there is a risk of a participatory process being hijacked by influential members of a community in a process called “elite capture.” Such people can dominate the project discourse in public, or threaten in private, to shape a project in ways that generate more resources or power for themselves. These disruptive and controlling personalities are usually already well known. They can be sidelined by a savvy team of change agents working in concert with allies in the community.

Another disadvantage of participation is related to project planning and grantsmanship. Because the eventual outcomes for a participation project are unknown at the start, it is harder to plan this type of project. A team may have a general idea as to what the main problems and solutions in a given setting might be, but this could be insufficient to get a proposal funded. Donor agencies prefer to see a very formulaic series of proposed activities and outcomes, not an uncertain process of adaptive project management.

A related issue to program predictability is that the research team must be nimble in terms of being able to adjust to emerging

project priorities. This is best achieved by interdisciplinary professionals. For example, if a research team is dominated at the start by range or livestock experts who will only be satisfied if a range or livestock issue becomes paramount in the problem-solving phase of a project, this inflexibility can impair the project if the critical issues turn out to involve the human dimension.

Do the Pros of Participation Outweigh the Cons?

In my experience, the pros clearly outweigh the cons when using participatory approaches. The two main reasons are science and service. With regard to science, I have been amazed at the rapid-fire discoveries or insights that occur when probing a treasure trove of local knowledge with the use of PRA. This often has led us to discard hypotheses based on desk review in favor of much more interesting ideas. And with regard to service, there is nothing quite as satisfying as seeing one of your research or Extension ideas catch on among people in the community. Participation puts research and outreach on a fast track where real-world impacts can be observed more quickly than with conventional approaches.

It is notable that participatory work is not an “academic career killer.” Yes, it probably takes more time for each publication, but working with an interdisciplinary team can generate more multi-authored publication opportunities overall. Reputable journals will publish research based on participation.¹¹ Another bonus is that your administrators will always love to hear your reports of real-world impacts; impacts make them, and your institution, look good to state legislators and other influential stakeholders.

Participation creates uncertainty in project outcomes, and advertising the uncertainty in your project outcomes is not regarded as a positive attribute of successful grantsmanship. How can this challenge be overcome? Participation can be used or framed in ways that facilitate funding success. One approach is to conduct PRAs in a pilot phase of a project and then use the insights generated to inform a more robust, full proposal.

Another approach is to couch proposal objectives broadly to capture a more diverse array of outcomes. For example, a project can aspire to discover “sustainable solutions” to dilemmas faced by rural communities, and the solution may be related to land, livestock, small business, or education; put

simply, just state the use of a “big net” up front. Finally, find granting agencies that are searching for more innovation and impact from applied science. Some will happily fund ambitious projects that build new bridges among researchers, Extension agents, and citizens with a focus on community impact.

Are Participatory Approaches Relevant to Working in the United States?

I have not yet used PRA or PAR in the United States, but there are many examples where they have been successfully employed.^{7,15} I have considered using PRA in the context of the Utah range projects, where community mobilization is needed to deal with a natural resource problem such as noxious weed control. There are challenges, however, that could be more acute in the United States compared with those in the developing world. One is simply the greater difficulty in regularly bringing stakeholders together to join a PRA process in contemporary America.

My experience in Ethiopia and Nepal is that assembling community members to conduct a PRA is relatively straightforward. Although these people also have busy lives, a critical mass tends to be easy to locate and very agreeable to collaborate. I speculate that this occurs because people in these settings tend to live close to each other and tend to share common perceptions as to what the big problems are in their communities; this may be fostered by a higher degree of dependency on the dynamics of local natural resources. There is also the spectacle of foreigners coming to help, and that alone can be a big draw!

The situations in developing countries offer a stark contrast to the often painful experience of trying to get rural Americans together to join a collaborative process. If the problems at hand are at all viewed as mundane, even generous cash honoraria fail to attract a crowd. Modern life also brings a plethora of distractions that make it difficult for community members to focus on anything except a major crisis. One option to circumvent the hassles associated with physically bringing stakeholders together is to use online fora.

Although I have not conducted research in the context of a Native American community, I have visited several reservations. I have been struck by the superficial similarities between the appearance of reservations and the locales in the developing countries where I have worked. My sense is that PRA and PAR would have a similar chance of performing well among Native Americans as in the contexts in the developing nations, as previously described. PRA has been successfully used for watershed restoration in Native American communities.¹⁵

Empower Yourself and Others: Use Participatory Approaches

Participatory approaches, including PRA and PAR, are now my foundation whenever I implement a new project that deals with problem solving in rangelands or small farm systems. I cannot imagine going back to my previous way of working.

We are members of a well-defined professional system. This system lays out expectations with regard to how we receive funding and how we are supposed to work—and this affects the extent that our work addresses real-world problems. Although we are lucky to have this system at all, it can stifle innovation and discovery in some cases. By clinging to top-down, academic perspectives, we can become shackled and lacking in creativity when navigating the realm of applied science. The risks of public participation are worth the ultimate benefits in this context.

Participatory approaches are really about empowerment and mutual learning—both for the investigators and for the target populations under study. This is especially true of a project that involves people from different cultures or varied economic circumstances trying to work together successfully. The methods can be quickly learned. Give them a try. For a start, interested readers can browse the cited literature and investigate the abundant online resources. Direct correspondence with me is also welcomed.

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