

Report of the Peer Review Dialog Meeting 2009-07-28

Chaired by Martin Schaffernicht and Stefan Groesser

The meeting was held in an atmosphere of optimism; in general, the participating authors felt that the reviews they have received are helpful and not overly “hostile”. We learned that reviewers are evaluated by thread chairs from this year on. Insofar as this assessment information is fed back to reviewers, it may be useful for the latter and contribute to improvement of review.

There were a number of suggestions that attendees brought up which will be elaborated in the following. The nature of the topics suggest that we rename our “Peer Review Meeting” to “Conference Review Meeting”. This reflects the purpose of the meeting more accurately.

Suggestions for Improvement:

A. Authors Assess the Received Reviews

The authors should be prompted to express their assessment of each review they have received. Two dimensions might be differentiated:

1. How useful is this review comment in helping you improve upon this submission?
 - Not useful at all (1)
 - Somewhat useful (2)
 - Fairly useful (3)
 - Useful (4)
 - Extremely useful (5)

2. How constructive was the tone of this review?
 - Not constructive at all (1)
 - Somewhat constructive (2)
 - Fairly constructive (3)
 - Constructive (4)
 - Extremely constructive (5)

This is suggested to be implemented in the web submission system by the responsible persons of the System Dynamics Society (suggestion: VP Electronic Presence). This feature should be implemented and announced to the conference participants for the next conference (ISDC 2010). See suggested form in Appendix of this report.

B. Transparency of Reviews

The participants have suggested to enable reviewers to see the reviews of others of the same paper after all reviews have been submitted. Thereby, reviewers can assess their own reviews and learn about the review styles of others. The quality of reviews is expected to increase in the future.

C. Training of Reviewers

There might be an exercise for reviewers. (New) reviewers can review selected papers and then compare their evaluations to selected reference-reviews of these papers. This

also would enable to improve the quality of reviews (as mentioned in point B). The development of this reference-review package is the responsibility of the VP Electronic Presence.

D. Guidelines for Authors and Reviewers

For the main types of contributions – as of now, these are (1) model based papers and (2) methodology papers – specific guidelines should be defined and made available to authors and reviewers as a checklist for writing a paper and assessing the paper's quality.

D.1 Since problem-oriented, model-based work seems to be the main type of contribution at System Dynamics conferences, papers written about completed research are expected to describe a series of topics (derived from Forrester's view on what can be achieved with an appropriate simulation model; see Forrester. 2007 System dynamics – the next 50 years, *System Dynamics Review* 23(2/3) 359–370) and other review guidelines of other conferences.

- *Introduction*
 - *Is there a clear research question, with a solid motivation behind it?*
 - *Is the research question interesting?*
 - *After reading the introduction, did you find yourself motivated to read further?*
- *Theory*
 - *Does the submission contain a well-developed and articulated conceptual or theoretical framework?*
 - *Are the core concepts of the submission clearly defined?*
 - *Is the logic behind the dynamic hypothesis persuasive?*
 - *Is extant literature appropriately reflected in the submission?*
 - *Does the dynamic hypothesis or propositions logically flow from the theory?*
- *Model (for model-based papers)*
 - *Is the causal structure clearly presented which underlies the addressed problem?*
 - *Does the paper show how this problem is generated by the structure?*
 - *Is a policy discussed which leads to a relevant change in the problematic behavior?*
 - *Is validation discussed to a sufficient degree (following standard texts on validation)?*
 - *Are relevant insights presented that have emerged from modeling?*
- *Method (for empirical papers)*
 - *Are the sample and variables appropriate for the hypotheses?*
 - *Is the data collection method consistent with the analytical technique(s) applied?*
 - *Does the study have internal and external validity (following standard texts on validation)?*
 - *Are the analytical techniques appropriate for the theory and research questions and were they applied appropriately?*
- *Results (for empirical papers)*
 - *Are the results reported in an understandable way?*
 - *Are there alternative explanations for the results, and if so, are these adequately controlled for in the analyses?*
- *Contribution*
 - *Does the submission make a value-added contribution to existing research?*

- *Does the submission stimulate thought or debate?*
- *Do the authors discuss the implications of the work for the scientific and practice community?*

D.2 Papers about work in progress are expected to describe the topics that have been elaborated so far (according to the above list) and to make explicit up to which point the work can be considered as validated.

These expectations should be made available to authors as a checklist before posting their submission. It is suggested that the VP Electronic Presence includes this in the web-based submission system.

For the reviewers web-based evaluation form, it is recommended to take the following checklist. The implementation of the form in the web-based system is the responsibility of the VP Electronic Presence. Please see the "reviewers check-list" web page in the supplemental material.

As of now, this form should only be used in the case of “model-based papers”. Submissions about methodological advances are equally important; however, it the participants have suggested to deal with them later when the evaluation of the model-based paper have been implemented successfully.

Submissions that do not satisfy all of the criteria may not necessarily be rejected, but will make more explicit the quality profile of the paper in an explicit way that will help to orient the acceptance decision and help authors to improve their manuscripts.

Our thanks to the attendees:

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SUGGESTED REVIEWER GUIDELINES

This list is derived from review guidelines of other conferences and our reviewers-checklist is based upon it as well as Forrester's topics mentioned above:

Setting the Tone of the Review

- Please keep your comments constructive. If the problems you identify cannot be fixed, try to provide the authors with constructive ideas for how they might improve upon their submission as they develop their research. It is also important to try and identify the strengths of a manuscript to help the author(s) improve their work.
- One of the greatest services that reviewers perform is the development of the research of authors who submit their work. Identify areas of weakness in a manuscript, but also provide specific guidance on how the authors might address the limitations you have noted. The more specificity you provide in your review, the more likely it is that the authors will benefit from your efforts.
- Authors deserve to be treated with respect, regardless of your evaluation of their work. Remember, you are representing the Programme Committee and ultimately the Society.
- Please try to be open-minded to different authors using different theoretical frameworks. Try to judge manuscripts based on how well they stimulate thinking and discussion. Also, keep in mind that many Society members come from disciplinary backgrounds and research traditions with diverse theoretical and methodological orientations.

Review Format

- You must submit your review within the timelines provided. There is no slack in our schedule.
- Provide a structured review by separating and numbering comments. Also, where appropriate, cite specific page numbers, passages, tables, and figures in your review.
- If you are uncertain about your comments in terms of some aspects of your review, please do your best to determine the accuracy of your position. Remember that inaccuracies in your review reflect on the thread you are reviewing for as a whole as well as on the Society.
- Do not provide information in your review that reveals your identity and do not seek to discover the identity of the authors. This protects the integrity of the 'double-blind' review process.
- A good review is typically 1 single-spaced page in length. This year through the submission system we hope to increase the number of reviewers for each thread, in order to decrease the number of submissions each reviewer had to evaluate. When you signed up to review for a thread you have committed to review up to 5 papers. With this said it is our overall goal to have you review fewer submissions, and to provide for the division higher quality reviews.
- In addition to commenting on the theoretical development of a submission and the technical correctness of the methodology, you should also consider the overall value added contribution the submission offers. Does the submission

pass the “so what” test? Also, consider whether the submission has any practical value, and comment on its implications for the practice community.

Specific Areas to Consider

The following points are some suggested criteria that might help you structure your evaluations of the submissions sent to you.

- Introduction
 - Is there a clear research question, with a solid motivation behind it?
 - Is the research question interesting?
 - After reading the introduction, did you find yourself motivated to read further?
- Theory
 - Does the submission contain a well-developed and articulated theoretical framework?
 - Are the core concepts of the submission clearly defined?
 - Is the logic behind the hypotheses persuasive?
 - Is extant literature appropriately reflected in the submission, or are critical references missing?
 - Do the hypotheses or propositions logically flow from the theory?
- Method (for empirical papers)
 - Are the sample and variables appropriate for the hypotheses?
 - Is the data collection method consistent with the analytical technique(s) applied?
 - Does the study have internal and external validity?
 - Are the analytical techniques appropriate for the theory and research questions and were they applied appropriately.
- Results (for empirical papers)
 - Are the results reported in an understandable way?
 - Are there alternative explanations for the results, and if so, are these adequately controlled for in the analyses?
- Contribution
 - Does the submission make a value-added contribution to existing research?
 - Does the submission stimulate thought or debate?
 - Do the authors discuss the implications of the work for the scientific and practice community?

SUGGESTED AUTHOR GUIDELINES

(This list inspired our suggested "authors guidelines"; it was derived from a list publicly shared by Tom Fiddaman)

- Read a bunch of good SD papers, by browsing the SD Review, Dynamica, Desert Island Dynamics, or past conference plenary papers. You could do a lot worse than picking one as a model for your paper.
- Start with: What's the question? Why do we care? Who's the audience? How will they be influenced? What is their prevailing mental model, and how must it change for things to improve? (If your paper is a methods paper, not a model paper, perhaps the relevant questions are different, but it's still nice to know why I'm reading something up front.)
- If you have a model:
 - Make sure units balance, stocks and flows are conserved, structure is robust in extreme conditions, and other good practices are followed. When in doubt, refer to Industrial Dynamics or Business Dynamics.
 - Provide a high-level diagram.
 - Describe what's endogenous, what's exogenous, and what's excluded.
 - Provide some basic stats - What's the time horizon? How many state variables are there?
 - Provide some data on the phenomena in question, or at least reference modes and a dynamic hypothesis.
 - Discuss validation - how do we know your model is any good?
 - Discuss "Which Policy Run is Best, and Who Says So?".
 - Provide the model in supplementary material, if at all possible.
 - Use intelligible and directional variable names.
 - Clearly identify the parameter changes used to generate each run.
 - Change only one thing at a time in your simulation experiments (or more generally, use scientific method).
 - Explore uncertainty.
 - If your output shows interesting dynamics (or weird discontinuities and other artifacts), please explain.
 - Most importantly, clearly explain why things are happening by relating behavior to structure. Black-box output is boring. Causal loop diagrams or simplified stock-flow schematics may be helpful for explaining the structure of interest.
 - If you use CLDs, read "Problems with Causal Loop Diagrams" and "Guidelines for Drawing Causal Loop Diagrams" and Chapter 5 of Business Dynamics.
 - Archetypes are a compact way to communicate a story, but don't assume that everyone knows them all. Don't shoehorn your problem into an archetype; if it doesn't fit, describe the structure/behavior in its own right.
 - If you present graphs, label axes with units, clearly identify each series, etc. Follow general good practice for statistical graphics. I like lots of graphs because they're information-rich, but each one should have a clear purpose and association with the text. Screenshots straight out of some modeling packages are not presentation-quality in my opinion.

- I don't think it's always necessary to follow the standard scientific journal article format, it could even be boring, but when in doubt it's not a bad start.
- If your English is not the best (perhaps even if it is), at least seek help editing your abstract, so that it's clear and succinct.
- Ask yourself whether your paper is really about system dynamics. If you have a model, is it dynamic? Is it behavioral? Does it employ an operational description of the system under consideration? If you're describing a method, is it applicable to (possibly nonlinear) dynamic systems? If you're describing a process (group modeling, for example), does it involve decision making or inquiry into a dynamic system? I welcome cross-disciplinary papers, but I think pure OR papers (say, optimizing a shop-floor layout) belong at OR conferences.
- Do a literature search, especially of the SD Review and SD bibliography, but also of literature outside the field, so that you can explain how the model/method relates to past work in SD and to different perspectives elsewhere. Usually it's not necessary to report all the gory details of other papers though.
- Rejected anyway? Don't feel bad. Try again next year!