JSCI Editorial Peer Reviewing Methodology

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The Peer Review Methodology Used in the Journal of Systemics, Cybernetics, and Informatics is Based on three-tier reviews: open (or non-blind), double-blind, and participative reviews. Final acceptance depends of the three kinds of reviews but a paper should be recommended by non-blind reviewers AND blind reviewers in order to be accepted for publication. A recommendation to accept made by non-blind reviewers is a **necessary** condition, but it is not a **sufficient** one. A submission, to be accepted, should also have a majority of its double-blind reviewers recommending its acceptance. This double necessary conditions generate a **more reliable and rigorous** review than a those reviewing processes based on just one of the indicated methods, or just on the traditional double-blind reviewing.

Double-blind reviewing is done by a random selection of a 3-5 reviewers from the about 20.000 reviewers of publications (journals and conferences proceedings) made, or sponsored, by the International Institute of Informatics and Systemics (IIIS), who classified their research or expertise field in the same theme, area, or subarea where the author classified his/her submission. A random selection (made by a computer program) of the double/blind reviewers has been conceived in order to avoid any conscious, or un-conscious, bias that might be done by a human being selection of the respective reviewers.

IIIS' non-blind reviewing is based on the essence of what Kaplan (2005, "How to Fix Peer Review", *The Scientist*, Volume 19, Issue 1, Page 10, Jun. 6) proposed in order to fix peer reviewing problems. Kaplan affirms that "Peer review subsumes two functions. First, peer reviewers attempt to improve manuscripts by offering constructive criticisms about concrete elements … The second function of peer review is to render a decision about the … significance of the findings so that the manuscript can be prioritized for publication. I propose reforming peer review so that the two functions are independent." With regards to the first function of peer reviewing Kaplan proposes that "**Review of a manuscript would be solicited from colleagues by the authors.** The first task of these reviewers would be to identify revisions that could be made to improve the manuscript. Second, the reviewers would be responsible for writing an evaluation of the revised work. This assessment would be mostly concerned with the significance of the findings, and the reviewers would sign it" (emphasis added).

IIIS tries to achieve the first function via Kaplan's non-blind peer reviewing and the second function by the traditional means of double-blind review. This is why submission acceptance by the non-blind reviewers is a necessary condition but not a sufficient one. The submission should also have favorable recommendations by the majority of the double-blind reviewers in order to be accepted by IIIS for its presentation and inclusion in the respective conference proceedings.

A third reviewing tier is the Participative Peer-to-Peer reviewing, which complements the two tiers described above but it is not a necessary condition for accepting a submission. An article

submitted to JSCI is immediately displayed for review to those authors who submitted articles in the same special issue or, in general, to the same theme, area, or sub-area. Accordingly, each submitting author have access to all submission submitted to the same area where he/she submitted his/her article and can comment and evaluate any submitted article to the same area. This is what is called in IIIS "Participative Peer-to-Peer Reviewing" or PPPR. This kind of reviewing provides additional input to the selection process and assists all participants in placing their presentations in context. It is not a necessary condition but it has a complementary function, especially in those cases where the non-blind reviewers have a strong disagreement and no majority of recommendations are for accepting or not accepting the respective article.

In some circumstances, invited editors, or co-editors, of a special issue, may use a somewhat different peer review approaches or methods.

This **multi-methodological** reviewing process has been conceived because it is the most adequate one for **multi-disciplinary** publications and conferences conceived to support **inter-disciplinary communication**.

There is a high diversity of reviewing processes, policies, and methods, even among the most prestigious, old, large and veteran scholarly societies and institutes. This variety is a consequence of the diversity of objectives or functions that publications might have among distinct scientific disciplines, between scientific and engineering, between epistemological and professional values, between academy and industry, between scholars, and consultants and managers, and even among different academic elites competing for the same resources. One way to deal with this kind of problem and hindrances in multi- and inter- disciplinary publications is to use a **hybrid model** and a **hybrid methodology for peer reviewing,** integrated by the most used models and peer reviewing methods applied in editorial policies and conventional, established and habitual conferences, organized by prestigious and/or age-old academic or professional associations or institutes.

As a consequence of the reviewing methodology, briefly described above, and the multi- and inter-disciplinary nature of IIIS' publications and conferences, we suggests the following notes to authors and reviewers.

<u>Note for Authors</u>

> IIIS publications and conferences are inherently **multi-disciplinary** ones, oriented to support **inter-disciplinary communication**, with an especial focus on **interdisciplinary research**. Given the known problems with peer reviewing, and the use of reviewers across a broad scope of disciplines, the conferences use a combination of open (non-blind) and closed (double-blind) reviewing. The open reviews are intended to place the submitted work in the context of its own discipline(s) and specialization, and in the context of the body of work developed by the author(s). We therefore suggest that the open reviewers be individuals knowledgeable in the field, and acquainted with that body of work. It is perfectly acceptable therefore (and even necessary according to David Kaplan), to use research colleagues or friends.

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Short Description of each of the Evaluative Criteria

Both kinds of reviewers, anonymous and non-anonymous are asked to also provide quantitative evaluation of the reviewed article, according the following criteria. They are asked to use a scale from 1 to 10 [the number 1 (one) being associated to the lowest evaluation and the number 10 (ten) being associated to the highest one].

Each words used to designate an evaluative criteria might have different meanings according different intellectual perspectives, disciplines, or epistemological point of views. Accordingly, below, we are giving very short descriptions of the meanings of the evaluative criteria for each of which the reviewers are asked to try to provide a quantitative evaluation for the reviewed article.

A. **Originality:** Not known or experienced before. A technique or a method not used before. Has this or similar work been previously reported? Are the problems and/or approaches in the paper completely new?

B. **Novelty:** According this criterion, it is not necessary for the paper to develop new techniques, or to generate new knowledge, but it should, at least, apply, or combine, them in a fresh and novel way or shed some new light on their applicability in a certain domain.

C. **Innovation:** A new product, process or service based on new or known technologies, methods or methodologies. Known technologies and techniques might be combined to generate new product or service with potential users in the market. What defines an innovation is a new kind of possible users of a product or a service, not necessarily new knowledge, new techniques, new technologies, new methods, or new applications. Innovation is related to new uses or new markets.

D. **Relevance:** Importance, usefulness, and/or applicability of the ideas, methods and/or techniques described in the paper.

E. **Appropriateness:** Suitability, agreeableness, compatibility, congruity, and adequacy of the paper to the areas and topics of the journal.

F. **Significance:** Importance and noteworthiness of the ideas, methods and techniques used and/or described in the article. The problem approached in the article should be interesting and natural, and not just be chosen by the authors because it can be attacked by their methods. What it is presented in the article is not just obvious and trivial ideas.

G. **Quality:** Scientific, technical, and/or methodological soundness of the article. Correctness of results, proofs and/or reflections. Inclusion in the articles of details that allow checking the correctness of the results or citations of articles where can be found the proof or parts of it.

H. **Presentation:** Adequate organization of the article and the language used in it, as to make its content clear, easily readable and understandable. Clarity in what has been achieved by the author of the article. Even technical papers on a narrow topic should be written such that non-experts can comprehend the main contribution of the paper and the methods employed. The paper shouldn't just be a litany of deep but obscure theorems. The information of the paper should be available to the reader with a minimum of effort.

I. **General Evaluation:** since different reviewers might weight in different ways the above criteria, a general evaluation is also required from the reviewers in order to provide them with a general criterion, with which they can weigh and integrate the evaluations provided for the above individual criteria.