Research statement, Urban Larsson, March 2018

Technion - Israel Institute of Technology,
email: urban031@gmail.com,
homepage: http://www.urbanlarsson.mine.nu
phone: +972-543844666

Game theory is an amazing subject, and it has connections to many other fields of mathematics, and other sciences. In the last 12 years, I have produced about 40 papers in Combinatorial Game Theory (CGT) with connections in Number Theory, Computer Science, and Physics, and with more than 30 coauthors. I am the editor of a book in combinatorial games, GONC5, and a Special issue with CGT-papers in IJGT; see my CV.

Many research manuscripts (and also published papers to some extent) lack in the presentation. I ponder upon the reason for this. Several of my own manuscripts had a poor presentation at the early stages, but with feedback from reviewers and colleagues, they improved a lot.

Some research fields might suffer a bit because, for a long time only very few experts can be asked to act as referees. Then, since they already know the subject very well, they do not ask for a detailed presentation. Therefore a field might not expand to satisfy its full potential. This is not a good development. I am actively working to have papers be self-sustained, and self-explanatory, or at least consistent and clear about whom the audience is, and exactly what background should be required (it does not suffice to state what is required background, but rather let the flow of the text show which audience you intend).

Worldwide math education does not seem to be teaching (graduate) students towards great authorship, I am sorry to say. I believe, in various curricula, most time is spent on learning core mathematics, the theorem-proof part, and not even a great deal of time is spent on defining your territory (!). Perhaps, in the math education, one assumes that the authoring part of a solid math result would take care of itself. However, for most people, this seems not to be the case. As an editor, I have discovered that only one out of 10 math manuscripts has a reasonable presentation, and the rest fail in many respects to indroduce their subject and motivate an audience to read further. Sometimes, I encounter so poor introductions that it makes more sense to simply flick through the rest of the manuscripts and skim the results to get an overview of what is proposed. I do not believe that we should publish manuscripts that cannot present themselves. Unless, we are firm in guiding our peers to write better, then a small field will remain small, and what is even worse, we may fail to discover possibly well-hidden duds in the actual proposed results.

What should we publish? When we have original research ideas, with clearly stated results and correct proofs, then they should most likely be published, but it is a time consuming path, to complete a research paper. In the early days (more than 10 years ago by now), I recall being excited about the whole process of publishing science, and in particular to be able to satisfy the high criteria of the math community. I had wonderful assisance from reviewers to become a better author. My future community always seemed to be willing to teach and lead towards a better authorship, and I was a passionate student. These days, the beginner's excitement is weakend in this respect, and I am starting a new role in science and maths.

What is murky told is often murky thought, so I see myself partly in an educational role in my field, and others. I have published more (varied) papers in a short time than many authors in my field. Besides being a leading expert in CGT, with connections in number theory, computer science, and more, my current project is directed towards building bridges between the broader game theory communities.

Several ideas in combinatorial game theory have not yet been researched in the larger game's community, and ideas from economics and game theory have traditionally not been pursued in the younger combinatorial game's community.

In my current and future projects I develop and expand game theory in a way, which interacts even more strongly with other subjects and sciences. In this spirit, and within the next few months I am working towards finishing at least three projects, developed together with colleagues at the Technion's Game Theory group.

Is your department ready to learn and publish new theories together with me? I am certainly interested in discussing the prospect of becoming a member in your team. Which new bridges can we build, and which new territory can we enter if and only if we work together with a larger goal in mind?