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The Forum for Negative Results (FNR)

Guest Editorial

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In September 1997, J.UCS published an article titled *"Why we Need an Explicit Forum for Negative Results"* [Prechelt, 1997]. It argued that when a plausible approach for solving a computer science or software engineering problem had failed to work out, it was silly for the scientific system not to publish the attempt iff a useful insight had been gained along the way nevertheless. Due to the strong bias of essentially all Computer Science publication venues towards "successful" research results, it was thus required to call for such negative results explicitly in order to avoid that those results would either be misleadingly disguised as successes or disappear in some closet. The article declared that J.UCS had thus agreed to create the "Forum for Negative Results (FNR)" as a permanent special section of J.UCS.

To be submitted to FNR, an article would explain an idea, argue why it was plausible to lead to success, describe its implementation and evaluation, describe how the result failed to meet the expectation, and then (and this would be the article's main research contribution) explain *why* this failure occurred and what had been wrong with the expectation. The submission would be subtitled *"A contribution to the Forum for Negative Results"* and would then be subjected to some additional review criteria besides J.UCS's usual ones; see the FNR homepage [FNRa].

The present J.UCS issue publishes an FNR paper: *"Points-to Analysis: A Fine-Grained Evaluation. A contribution to the Forum for Negative Results"* by Lundberg and Löwe. It pertains to static program analysis and investigates, for various styles of analysis of object references, the expectation that taking more than one level of call history into account will lead to improvements in analysis precision, at least when the precision metric distinguishes different instances of a source-level object. This would mean the quality of program analysis can be improved by doing such (expensive) k-level analyses. The article finds, however, that this is not the case. Its contribution is the explanation: An even much finer (and practically irrelevant) level of detail considered by the metric is needed before the differences become visible -- so the improvement exists in principle, but is not relevant for practical purposes. This negative result holds a rather positive and useful message: There is no need to perform the expensive k-level-deep analysis. Overall, this is an exemplary FNR contribution.

The article happens to be the very first contribution ever published by FNR. Yes: One publication in 15 years; that's not exactly selling like hotcakes. Should FNR be considered a negative result itself? We do not think so. Rather, we believe that FNR

was simply ahead of the zeitgeist, but that research culture is slowly catching up and the FNR idea will begin to flourish.

When FNR was introduced in 1997, a lot of discussion along similar lines had been done in many places (in particular in experimental sciences, where not publishing results lacking statistical significance leads to the infamous "file-drawer problem", [Wikipedia]), but only one explicit venue comparable to FNR appeared to exist: The Journal of Negative Observations in Genetic Oncology (NOGO), actually more a structured database than a textual journal, published findings of the type "Gene X is *not* responsible for cancer". To my knowledge, NOGO was founded a few months ahead of FNR, but has apparently been discontinued around 2008; perhaps due to lack of success [Kolata, 2002].

However, when I last looked for such venues in January 2012, I found no fewer than 17 of them. Some are thematically broad (e.g. the "All Results Journals: Phys" [ARP], covering all of Physics) others more specialized (e.g. the "Journal of Interesting Negative Results in Natural Language Processing and Machine Learning" [JINR]). Several of them have published zero articles so far, but some appear to publish steadily, if slowly (e.g. "Journal of Articles in Support of the Null Hypothesis" [JASNH]). See the FNR homepage [FNRa] for a full list. Whatever the individual fate of any one of these venues, their large number suggests one conclusion: Their rise is only just beginning.

Please go back to your inventory of recent failures and look whether one of them holds a substantial scientific lesson to be learned. If you find one, submit it to FNR [FNRb].

Lutz Prechelt
Berlin, Germany, December 2012

References

[ARP] *All Results Journals: Phys*, http://www.arjournals.com/

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