# Review on the paper of V.M. Leontiev "On the collection process"

In my opinion, results presented in the paper are interesting and deserve publication, but there are some issues which must be corrected. After the text is reworked, I suggest a second review.

My remarks are provided in the annotated pdf-file, also I would like to discuss some places in more detail here.

*Introduction.* In the introduction it is mentioned that Theorems 4, 5 and 6 generalize the results of Hall, Struik and Magnus. It should be explicitly explained why it is, indeed, a generalization. Statements of Theorems 4, 5 and 6 are rather technical and pretty far from statements of the above results of other authors, so it is not immediately clear how to obtain these results from the author's theorems. I suggest to add the relevant explanations to Section 6. For example, after the proof of Theorem 4 one can write:

"Theorem 4 provides an alternative proof to the following result of M. Hall ...
**Corollary 3.** (M. Hall, [2]) *statement of Hall's result*
*Proof.* ... the proof using Theorem 4 ..."

The same applies to Theorems 5 and 6.

I also suggest to expand the last paragraph of the introduction, bringing a bit more focus to the results obtained in this paper. For example, it can be mentioned that Theorem 4 generalizes M. Hall's result to words of the form $\prod_{i=1}^{N}(a_1^{\rho(i,1)}\ldots a_n^{\rho(i,n)})$ for an arbitrary function $\rho : \{1,\ldots,N\} \times \{1,\ldots,n\} \to \{0,1\}$. Similar things can be said about Theorems 5 and 6.

*Additional explanations.* The author often skips some places which might not be very obvious to a reader. I have tried to mark these places in the annotated pdf-file, but among the most prominent ones are the definition of an L-condition (it is never explained what is an "L-condition on the sets"), and some properties of $D(R)$, $E_R$ and $P_{Q,R}$, see pages 6 and 7.

*Theorem numeration.* It is suggested that the author uses a section-based numeration of theorems, while inside a section the numeration can be consecutive. For example, results in the second section would become Definition 2.1, Definition 2.2, Example 2.3, etc.

*Mathematical issues.* There are a few places which were not very clear to me (for example, pages 6 and 7 mentioned above), it also seems that there are several small mistakes in formulae in Section 6, see remarks to Theorem 4, Examples 6 and 9.