Corrections to "How Does TCP Generate Pseudo-Self-Similarity?"

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In this note we would like to clarify and amend a number of points made in [3].

One of the central points in [3] was that although TCP's exponential backoff algorithm can introduce noticeable correlations in traffic from individual flows, the resulting correlation structure is not self-similarity. The term "pseudo-self-similarity" was used to describe this correlation structure. This term, introduced in [4], was first used in [1] to describe the same correlation structure in TCP flows. An early version of our paper appeared as [2]. In [2], although we pointed out from simulations that the limited retransmission time-out (RTO) in TCP's exponential backoff causes effects only over "limited timescales," we did not make clear that TCP's correlation structure was not self-similarity. Adding this point was the principal improvement in [3] over [2].

In [3] we wrote that [1] "extended our model" which does not credit [1] in two ways. First, [1] was the *first* to correctly and forcefully make the point that the correlation structure is not self-similarity due to limited RTO in exponential backoff. Second, the Markovian model in [1] was independently derived, is more detailed, and can be used to illustrate the correlation structure of both exponential back-off and congestion avoidance phases of TCP. We regret these inaccuracies in our paper.

1. REFERENCES

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