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Lutz Warnke* (warnke@math.gatech.edu), Georgia Institute of Technology. *Counting extensions revisited.*

We consider rooted subgraphs in random graphs, i.e., extension counts such as (i) the number of triangles containing a given ‘root’ vertex or (ii) the number of paths of length three connecting two given ‘root’ vertices. In 1989, Spencer gave sufficient conditions for the event that, with high probability, these extension counts are asymptotically equal for all choices of the root vertices (for vertex degrees this is true when np grows faster than $\log n$). For the important strictly balanced case, Spencer also raised the fundamental question whether these conditions are necessary. We answer this question by a careful second moment argument, and discuss some intriguing problems that remain open.

Based on joint work with Matas Sileikis, see [arXiv:1911.03012](https://arxiv.org/abs/1911.03012) (Received August 18, 2020)