The possible role of viruses in the origin and early evolution of the cellular organisms has been a matter of intense debate (6–9). However, in most cases it becomes clear that these parasites, instead of being a source of new genes for their hosts, are actually very efficient “gene pickpockets” that acquire genetic material from the cells that parasitize (8). This is most likely also the case for the Mimivirus, which certainly does not parasitize (8). Mimivirus is therefore an amazing model to study gene acquisition and genome size increase in viruses. Future studies will hopefully clarify the forces behind the vora-
cious appetite of this virus for eukaryotic genes.

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References and Notes
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