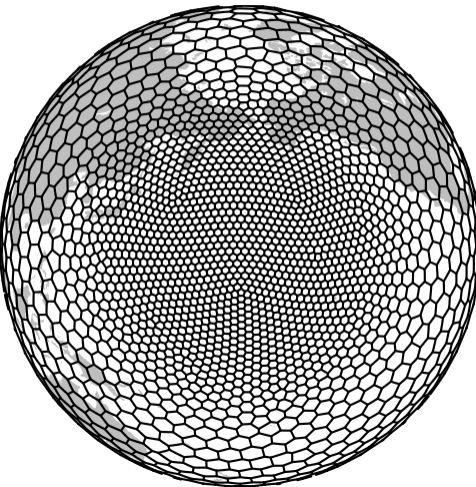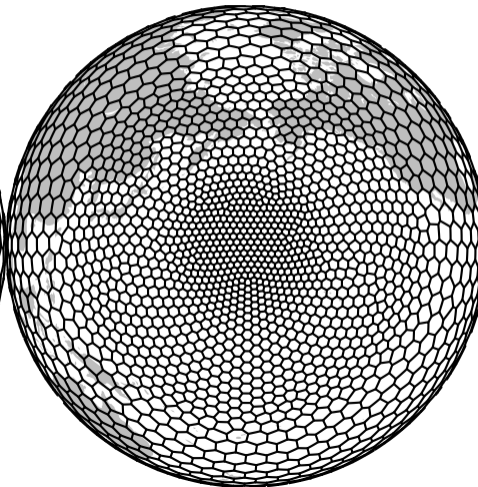(a) Single-region refinement   (b) Hierarchical refinement   (c) Polycentric refinement