Supplemental Figure 1. BMIII-PI momentary households by number of settlements in VEPIIN study area. Both axes logged.

Supplemental Figure 2. PII-PIII momentary households by number of settlements in VEPIIN study area. Both axes logged.

Supplemental Figure 3. Power-law analysis of BMIII to PI Momentary Households in the VEPIIN study area.

Supplemental Figure 4. Power-law analysis of PII to PIII Momentary Households in the VEPIIN study area.

Supplemental Figure 5. Graphs through time of hierarchical relationships within complex groups (Run 1). Centers of groups do not correspond to geographic locations but are chosen to minimize overlap and crowding of nodes. To illustrate possible dynamics we highlight two nodes (simple groups). Group 74 (in red) frequently revolts, and becomes subordinate to three different groups (248, 236, and 57) during the 120 years represented in these panels. Node 224, however, never successfully revolts from node 74 and stays its subordinate throughout the period graphed.

Supplemental Figure 6. Power-law analysis of BMIII to PI simulated group territory sizes.

Supplemental Figure 7. Power-law analysis of PII to PIII simulated group territory sizes.

Supplemental Figure 8. The growth of a polity through time with an attempted revolt. Panel 1 demonstrates conflict between group a, with 8 fighters, and group b, with 5. In panel 2 groups a and b have merged into a complex group with a as the dominant. Group e and group b then come into conflict, and group a mobilizes its fighters to help group b in the conflict. In panel 3 group e has become the subordinate of group b, even though it has more fighters (though not as many as ba and a together). Group d and group a then come into conflict, pitting the 21 fighters from group d against the 24 fighters in the complex group a, b, and e. In panel 4 group d has merged to group a as its subordinate, even though it has more fighters than group a, due to the chain of hierarchy with group a to b to e. When group h comes into conflict with group d it is easily subsumed as a subordinate group to group d. Between panels 4 and 5 many conflicts occur, creating the large polity in panel 5. In panel 6, group d considers revolt from group a. Group d counts its own fighters, as well as the fighters of groups h and l, adding to 32. Group a counts its fighters, as well as the fighters from groups c, d, e, f, g, i, j, and k, adding to 47. Even though group d is larger than group a, since group d cannot coordinate a revolt with groups b and c, defeat is certain if group a and d were to fight, so group d does not revolt.