

UNIVERSITY OF CALIFORNIA

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A Model of Multiethnicity:
State Collapse, Competition, and Social Complexity
from Tiwanaku to Chiribaya
in the Osmore Valley, Perú

A dissertation submitted in partial satisfaction of the
requirements for the degree Doctor of Philosophy
in Anthropology

by

Bruce Dieter Owen

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Dedicated to my parents, Sid and Angela Owen,
who don't seem to mind my foolishness.

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ABSTRACT OF THE DISSERTATION

A Model of Multiethnicity:
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This dissertation presents a model of the proliferation and consolidation of social groups, and uses it to explain archaeological data documenting marked changes in the number of social groups in the Osmore valley, Perú, before, during, and after the collapse of the Tiwanaku state. The equilibrium group number model uses a graphical representation of social forces resulting from psychological categorizing phenomena and rational-maximizing decisionmaking that typically encourage a moderate number of groups to form, and the force of competition that pushes the group number towards one. Circumstances that shift the "psycho-rational" forces curve or change the competition curve's slope such that the equilibrium group number changes in predictable ways are identified as "effects" of the model. The social sphere size effect describes how increasing long-distance interaction may cause a constant number of

groups to encompass an increasing area, leading to large, complex groups such as the Tiwanaku state. The minimum viable group size effect describes how a low population may support only one group, as in late Middle Horizon times in the coastal Osmore. The cascading divisions effect and the concept of salient level describe the breakdown of a hierarchical organization into numerous smaller groups, as occurred when Tiwanaku collapsed. The gold rush effect describes the proliferation of groups in a new niche, as happened in the coastal Osmore when multiple groups immigrated after Tiwanaku's collapse. The competitive exclusion effect describes how one group may eventually include everyone in an area, as the Chiribaya did at the expense of groups that made Ilo-Tumilaca/Cabuza, Osmore Multicolor, Ilo Multicolor, and Viboras style ceramics. The fixation effect describes how such a group can remain exclusive, as the Chiribaya did for over a century.

Each effect implies specific archaeological correlates, which are assessed using fully reported data from a systematic site survey, excavations at three sites, detailed analyses of screened midden collections and gravelots from an Ilo-Tumilaca/Cabuza cemetery, an illustrated ceramic typology, and sixteen new radiocarbon dates.

Analytical methods for mixed assemblages, population estimates, and midden contents are demonstrated.