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*1582-1583, as Revealed in the Journal of Diego Perez de Luxan.* Quivira Society Publications, Vol. I, Los Angeles, 1929.
24. Dobyns, 1991, 191-192.
25. Hammond and Rey, 1929, 94.
26. Dobyns, 1991, 192-193.
27. Hammond and Rey, 1929, 104-105.
28. Schroeder, Albert H., "A Reanalysis of the Routes of Coronado and Oñate into the Plains in 1541 and 1601." *Plains Anthropologist*, Vol. 7, 2-23, (1965), 15.
29. Hammond and Rey, 1966, 227.
30. Dobyns, 1991, 192.
31. Ibid., 193.
32. Schroeder, 1985, see map. See also Brew, J. O., "Hopi Prehistory and History to 1850." In *Handbook of North American Indians*, Vol. 9, Southwest, ed. Alfonso Ortiz, Smithsonian Institution, Washington D.C., 514-523, 1979, 522.
33. Schroeder, 1985, 108, and map.
34. Brew, 1979, 516.
35. Dobyns, 1991, 193.
36. Schroeder, 1985, see map.
37. Dobyns, 1991, 194; Hammond and Rey, 1929, 101-102.
38. Dobyns, 1991, 192; Bolton, Herbert Eugene, "The Espejo Expedition." In *Spanish Exploration in the Southwest 1542-1706*, Barnes and Noble, Inc., 168-194, 1952, 186.
39. Hammond and Rey, 1929, 96-97.
40. Dobyns, 1991, 192-193; Hammond and Rey, 1966, 226.
41. Dobyns, 1991, 193.
42. Hammond and Rey, 1929, 100.
43. Dobyns, 1991, 193.
44. Ibid., 195.
45. Hammond, George P., and Agapito Rey, *Don Juan de Oñate, Colonizer of New Mexico 1598-1628.* University of New Mexico Press, 1953, 360.
46. Hammond and Rey, 1929, 103.
47. Dobyns, 1991, 195.
48. Hammond and Rey, 1940, 208, 259.



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# RESPONSE

## SUPERHUMAN HEARING, SUPERHORSES, AND MIRACULOUS MAIZE

BY HENRY F. DOBYNS

Albert H. Schroeder has published numerous papers concerning the prehistory and history of various peoples native to the Southwestern United States. In other words, he has a position to defend in his comments on "Sixteenth-Century Tusayan."

Predictably, Schroeder adheres to previously accepted wisdom, much of it his. In doing so, Schroeder accuses me of several analytical shortcomings. Most of them actually are analytical shortcomings of Schroeder's own publications that my article attempted to remedy by presenting previously overlooked and/or ignored historical information describing Tusayan during the sixteenth century.

The disagreement between Schroeder and Dobyns reflects several broad issues that have arisen in reconstructing the history and prehistory of Native Americans. One of these broad issues is the correct chronology of demographic and cultural change. An indicator of chronological confusion is Schroeder's use of "prehistoric" without temporally defining the divide between "prehistoric" and "historic."

In contrast, "Sixteenth-Century Tusayan" employs documentary information to date Hopi habitation in thirty-plus settlements or pueblos to that century. Schroeder objects that "archaeological data indicate" that these former communities were abandoned 100 to 150 years before 1540. Archaeological "data" do no such thing. Archeographers[1] have guessed (my term) and assumed (Schroeder's term) that Natives abandoned them before the sixteenth century. Archeographers have guessed because residual physical data provide precious few clues to dating abandonments. As for actual data, Hopi potters continued making types of Jeddito Yellow Ware ceramic vessels recovered from the former pueblos until A.D. 1625.

Thereafter, Hopi potters turned out Franciscan mission period San Bernardo Polychrome instead of Sikyatki Polychrome and Jeddito black-on-yellow vessels.[2] The seventeenth century certainly qualifies as "historic times" in Tusayan. Because Europeans influenced Hopi potters to convert traditional decorative styles into mission period designs–a rather less than instantaneous process–I suggested that the transition dated nearer 1650 than 1625.[3]

Another broad issue is historical text criticism. As Patricia Galloway eloquently pointed out, too many scholars have too often taken documentary statements at face value.[4] "Sixteenth-Century Tusayan" engages, therefore, in Spanish colonial text evaluation (without explicitly saying so). Crucial to that analysis is the fact that both Bartolome de las Casas and Baltasar de Obregon wrote

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histories. Before they wrote, both authors interviewed participants in colonial expeditions to the northwestern frontier of New Spain. Schroeder implies that texts by both historians are suspect because they did not themselves witnesses all they wrote about. That implication is methodologically naive.

By interviewing eyewitnesses, both historians obtained and preserved information that we otherwise would not have. That Casas reported Vazquez de Coronado expeditionaries' count of up to thirty Tusayan pueblos which reminiscer Pedro de Castañeda did not mention does not imply that either writer erred. Differences between accounts of what Vazquez de Coronado's men saw simply indicates that not all of them saw or remembered the same things. Those differences should remind regional scholars that the Castañeda, Jaramillo, and other accounts of the Vazquez de Coronado expedition have yet to be subjected to the rigorous textual criticism that Galloway demands of overly credulous archeographers and ethnohistorians.

In this framework, the key text quoted in "Sixteenth-Century Tusayan" is historian Obregon's brief statement that both Tovar and Espejo told him that they were on the same river that is today called the Little Colorado. Inasmuch as Schroeder ignores it, it bears repetition. Tover "discovered the river and settlement of Tuzayan which Antonio de Espejo called Mohoce. This river, *as Don Pedro de Tovar and Antonio de Espejo told me*, is very well settled by clothed people, owners of good houses, cotton, maize, beans, and calabashes [emphasis added]."[5] In other words, the historian interviewed, in contemporary terminology, the commanders of the two exploring expeditions which are crucial to understanding the true demographic condition of Tusayan in 1540-43 and in 1582-83. They told him that they both traveled along the Little Colorado River. That is the unassailable historical fact which Schroeder ignores. His assertion that "Tovar at no time was 'placing himself on the Little Colorado River among several riverine pueblos' " is contradicted by Obregon's text. When Obregon interviewed him, Tover did place himself precisely on Espejo's Mohoce river.

Schroeder's comments credit Pedro de Tovar and his men with superhuman hearing. Defending his identification of sixteenth-century Aguato Pueblo with seventeenth-century Awatovi Pueblo, Schroeder maintains that "Castañeda's statement is more specific in that 'they were able to conceal themselves at the bottom of the gulley (Jeddito Wash) of the town and remain there, listening to the natives talk in their homes.' "[6] Schroeder inserts "Jeddito Wash" in the putative quotation. His comment continues: "Thus, Tovar and his men were in the plain below Antelope Mesa." This assertion ignores the physical improbability of Tover and his men–had they been at 6,000 feet or lower near the foot of Antelope Mesa–being able to hear Hopis conversing in their mesa-top homes more than 400 feet above.[7] Aguato Pueblo, to the edge of which Tovar and his men sneaked quietly so they could hear Hopis conversing within, necessarily was at the edge of the Little Colorado River flood plain.

The critic attacks my argument that roasting ears would be available from Little Colorado River Valley fields by April 20 but not from Black Mesa fields, claiming that unirrigated Black Mesa maize could be planted in March. It would have to be miraculous maize to survive March temperatures. As I pointed out,





economic anthropologist Earnest Beaglehole found that Black Mesa maize planting does not begin until mid- or late April.[8] The critic's maize would have to overcome an average growing season three weeks shorter than along the river,[9] a function of a 1,000-foot difference in altitude between the 4,800-4,900 feet near the Homol'ovi Pueblos and the 5,800-5,900 feet along Jeddito Wash below Awatovi.[10] The critic ignores, moreover, residual evidence that riverine Hopis planted "sand dunes and side drainage valleys and slopes."[11] These were the "sandy places" Perez de Luxan reported the riverine Hopis cultivated "because they carefully guard the moisture from the snow."[12]

Another instance of this defective criticism bears mention. Schroeder criticizes Dobyns for omitting Obregon's statement that Pedro de Tovar traveled "toward the northern border" from the Zuñian pueblos, and infers that phrase "points to the pueblos on Black Mesa." Actually, Dobyns was no more "selective" than Schroeder "in referring to only one part of the quote favoring his hypothesis but not to the other giving the route." Schroeder does not note that Obregon's next paragraph states that Garcia Lopez de Cardenas went "toward the slopes of the south" when he reached the Grand Cañon. Obregon used "south" and "north" in the colonial Spanish perspective of the South Sea (Pacific Ocean). So the Grand Cañon was "south" because the Spaniards recognized that the Rio Tizon (Colorado) flowed into the South Sea. His thoughts focused narrowly on his relatively small area of expertise, the critic misinterpreted the colonial historian's use of large-scale colonial geographic concepts.

The Little Colorado River flows into the main stream within what has been perceived during the present century as the Grand Canyon, where the rivers at 2,800 feet flow 3,200 feet below the rim at 6,000 feet.[13] It is difficult, therefore, to grant much weight to the critic's assertion that the Grand Canyon is "a geographic feature that can in no way be duplicated along the Little Colorado River." In fact, the laconic report of the Spanish 1540 trip to "Grand Canyon," offers few clues to what section of the south rim the Spaniards reached. The report only indicates that Native guides led the explorers to the south rim, from which the Colorado River appeared to be small.[14]

It is extremely difficult to lend credence to Schroeder's assertion that twenty days' travel is a "feasible" horseback travel time from Black Mesa to Grand Cañon but too long a period from Anderson Mesa pueblos to the Cañon. The reported twenty days' riding time indicates to this ethnohistorian that Native guides did their circuitous best to lose the Spaniards on the plateau before leading them to the south rim. Truthfully, twenty days' horseback travel is far longer than necessary via trails well known to Natives to reach the south rim at Indian Gardens from Black Mesa, middle Little Colorado River, or Anderson Mesa villages. In 1882, F. H. Cushing rode from Oraibi to Havasupai Village in six days, broken by a two-day stop.[15] In 1776, Francisco Garces rode from Havasupai Village to Oraibi in six days, resting two days at Moenkopi Springs.[16]

Schroeder's comments on Perez de Luxan's account of Espejo's journey from Aguato Pueblo to Mingus Mountain mines in 1583 contain some tortuous logic. It is the critic's insistence that these Spaniards visited Black Mesa villages which "does not jibe with Luxan's description of Espejo's route from Mohoce to



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the mines in central Arizona." Perez de Luxan reported reaching a fine south-north flowing river on the second day out, but the Little Colorado river flows generally east-southeast to west-northwest. Textual analysis and a knowledge of the terrain indicate that Perez de Luxan did cross a south-north flowing stream after leaving Aguato Pueblo on the Little Colorado River.

Schroeder does not take into account that after exploring the Little Colorado River, Espejo turned around and "went back to the pueblo of Aguato."[17] Espejo's party departed for the mines from that pueblo on April 30. Traveling west across the Colorado Plateau fifteen leagues brought the prospectors to Chavez Pass at Cañon Diablo. In contrast, the distance from later Awatovi Pueblo to the Little Colorado River is much more than fifteen leagues. Perez de Luxan's description of the stream as nearly equal to the Rio Bravo del Norte is puzzling. Did he transpose memories? Was he deliberately exaggerating the actual water supply? Did he indulge in sarcasm? *Quien sabe!*

Extremely puzzling is Schroeder's comment concerning the Espejo party's travel from Cañon Diablo to Mingus Mountain mineral deposits. "They spent an additional two days enroute to the mines passing through cedar forests inhabited by mountain people." Such a swift pace would have required each Spaniard to have ridden a superhorse, a veritable Pegasus! Perez de Luxan really reported riding different distances on five days between Cañon Diablo and the native Mingus Mountain pigment quarries. Always aware that their mounts needed to drink, the prospectors left Cañon Diablo on May 2 and traveled six leagues through junipers to encamp that night at pools. There they evidently laid over one day. Leaving the pools on May 4, the prospectors traversed juniper and ash stands to halt for the night at a marsh bordered by pine and juniper trees.[18]

Leaving the marsh on May 5, the prospectors rode seven leagues and descended the Beaver or Oak Creek Cañon slope to the stream. On May 7 the prospectors rode six leagues to a marsh by an abandoned pueblo[19]–probably Tuzigoot. On May 8, the prospectors crossed the north-south flowing Verde River and, following Native guides, climbed four leagues to the quarries.[20] The clear contrast between Schroeder's comment and Perez de Luxan's report shows who actually "misreads or misinterprets documentary statements."

Another major issue in the chronology of Native American demographic and cultural change is that of historic epidemiology.[21] Colonial Spaniards recorded much information about epidemic disease decimation of Native peoples in central New Spain. Consequently, the chronology of at least major epidemics and the gross depopulation there is known,[22] although scholars continue to debate the details. Less certain is how far north the epidemic diseases spread.

On this issue, Schroeder claims that "we do not have a single reference to a pueblo being abandoned as a result of disease." To the contrary, colonial Spaniards reported repeatedly that tribute-paying Natives had abandoned pueblos, which is to say nucleated towns and villages, during and soon after major epidemics.[23] As for Tusayan pueblos, there is at least one such statement. Catholic church historian Augustin de Vetancourt wrote that Franciscan missionaries gathered at Oraibi survivors of pueblos in which 14,000 Hopis had perished from bubonic plague.[24] The most recent plague epidemic prior to the arrival of





Franciscans at Oraibi around 1630 had occurred in 1613-1619.[25] The clerical historian did not, it is true, identify the abandoned pueblos by name. Inferentially, they included both plateau and riverine pueblos.

"Sixteenth-Century Tusayan" focuses on Spanish reports concerning riverine Hopi pueblos because the river-oriented explorers mentioned them. The documents permit one to trace demographic change through a century. The author thought it was clear that the better-documented riverine case indicated approximately the course of the undocumented non-riverine case. Schroeder comments critically, however, that the article does not state what happened to the non-riverine settlements. A clarification seems necessary: Dobyns hypothesizes that non-riverine Hopi settlement contracted at approximately the same rate and for the same reasons as riverine Hopi settlement.

An additional clarification is that I do not concede that there were seven villages on the southern edge of Black Mesa during the sixteenth century. Archeographers have long recognized that when Puebloan people in general and Hopis specifically abandon rooms or villages, they prefer salvaging well-seasoned construction beams to felling living trees. The felling dates of beams examined in Black Mesa villages are, therefore, not necessarily near the construction dates of the structures in which they were used. In fact, beams reused in Black Mesa villages may well have been carried there during the seventeenth century from riverine pueblos.

Schroeder questions the fate of non-riverine pueblos in Tusayan south of the Little Colorado River, so it is worth indicating that Perez de Luxan's report may contain a clue that Hopis inhabited at least one Anderson Mesa pueblo on the trading path between Tuzigoot and Aguato Pueblo in 1583. At the Espejo party's May 1 stopping place on the south-north flowing stream which Perez de Luxan described in impossible terms, he also mentioned encountering warlike people. "Warlike people" may have been Perez de Luxan's code for Natives inhabiting multistoried, nucleated settlements. Certainly Obregon wrote of the riverine Zuñians that their multistoried dwellings indicated that they were "a belligerent and warlike people."[26] On May 1, therefore, Espejo's party perhaps saw a still-inhabited Topachovi trading center pueblo in Chavez Pass.[27]

Schroeder's comments on epidemic disease chronology and settlement attrition call for some observations. The critic writes that "Dobyns speculates" that Old World contagious diseases spread to Tusayan in 1524 and 1533. Archeographer Sarah Campbell reported a crash in settlement numbers on the Plateau near the United States-Canada border dating to about 1525. She concludes that pandemic smallpox mortality was the most likely cause.[28] The first North American smallpox pandemic having apparently spread about as far as I hypothesized, it almost certainly did so via Puebloan peoples.

The critic goes on to assert that pueblo abandonments resulting from smallpox mortality "immediately would lower the figure of the thirty pueblos—prior to Coronado's entry of 1540." Las Casas wrote that there were "up to" thirty Tusayan pueblos in 1540. "Sixteenth-Century Tusayan" summarized archeographer Steadman Upham's synthesis of a thirty-one pueblo interaction network founded in pre-Columbian times,[29] and explicitly recognized that reports of Vazquez de



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Coronado's expedition indicated that three of ten riverine pueblos were abandoned in 1540.[30] Inasmuch as I recognized that Tusayan pueblo abandonment began prior to 1540, the rationale for criticism is not at all clear.

Some years ago, Bernard DeVoto[31] observed sarcastically that: "The beauty of Indian music . . . is somewhat esoteric to such white men as do not live in Santa Fe." Schroeder's comments prompt a similar observation: Accurate Puebloan archeography seems somewhat esoteric to such scholars as do not live in Santa Fe.

Space limitations militate against discussing all of the Santa Fe critic's comments. Enough of them have been refuted to show that Schroeder's attempt to defend his position resorts to miraculous maize, superhuman hearing, and superhorses which have no acceptable role in accurately reconstructing the course of historical events. That the critic misquotes, misreads, and misinterprets documents has been clearly demonstrated. "Sixteenth-Century Tusayan" remains, therefore, a valid revisionist analysis.

## NOTES

1. I adopted this appropriate label (H. F. Dobyns, "Native New World." 541-59 in *Columbian Consequences, Volume 3: The Spanish Borderlands in Perspective,* edited by D. H. Thomas. Washington: Smithsonian Institution Press, 1991) coined by James Deetz ("History and Archaeological Theory," *American Antiquity* 53:13-22).

2. E. L. Wade and L. S. McChesney, *Historic Hopi Ceramics.* Cambridge: Peabody Museum Press, 1981, vii, 19, 43.

3. H. F. Dobyns, "Prehistoric to Historic Transitions." 301-07 in *Perspectives on Southwestern Prehistory,* edited by Paul Minnis and C. L. Redman. Boulder: Westview Press, 1990.

4. Patricia Galloway, "The Archaeology of Ethnohistorical Narrative." 453-69 in *Columbian Consequences, Vol. 3,* edited by D. H. Thomas. Washington: Smithsonian Institution Press, 1991, 454.

5. H. F. Dobyns, "Sixteenth-Century Tusayan," *American Indian Quarterly* 15:2 (Spring, 1991), 192, quoting Baltasar de Obregon, *Obregon's History of 16th Century Explorations in Western America, Entitled Chronicle, Commentary, or Relation of the Ancient and Modern Discoveries in New Spain and New Mexico.* Mexico, 1584, translated by G. P. Hammond and Agapito Rey. Los Angeles: Wetzel Pub. Co.,1928, 22.

6. Putatively Pedro Castañeda, "Narrative of the Expedition to Cibola Undertaken in 1540." 191-283 in *Narratives of the Coronado Expedition 1540-1542,* by George P. Hammond and Agapito Rey. Albuquerque: University of New Mexico Press, 1940, 214, but Schroeder changed "our men" to "they," and changed "gully" to "gulley."

7. U. S. Geological Survey, *Egloffstein Butte Quadrangle, 1966.*

8. Ernest Beaglehole, *Notes on Hopi Economic Life.* New Haven: Yale University Publications in Anthropology, No. 15, 1937, 37-38, which I cited.

9. E. Charles Adams, "Homol'ovi II in the 14th Century." 116-21 in *Homol'ovi II: Archaeology of an Ancestral Hopi Village, Arizona,* Edited by E. C. Adams and K. A. Hays. Tucson: University of Arizona, Anthropological Papers, No. 56, 1991, 118.

10. U. S. Geological Survey, *Winslow Quadrangle,* 1954.

11. K. A. Hays, E. C. Adams, and R. C. Lange, "Regional Prehistory and Research." 1 -9 in *Homol'ovi II,* 5.

12. Diego Perez de Luxan, *Expedition into New Mexico made by Antonio de Espejo 1582-83, as revealed in the Journal of. . ., a Member of the Party,* translated by G. P Hammond and Agapito Rey. Los Angeles: Quivira Society, 1929; 100; "Account of the Antonio de Espejo Expedition into New Mexico, 1582." 153-212 in *The Rediscovery of New Mexico,* edited and translated by G. P. Hammond and Agapito Rey. Albuquerque: University of New Mexico Press, 1966, 191, quoted erroneously by Schroeder, who changed "snow" to "sun."

13. U. S. Geological Survey, *Vishnu Temple Quadrangle,* 1962.

14. Castañeda, "Narrative," 215-17.

15. F. H. Cushing, *The Nation of the Willows.* Flagstaff: Northland Press, 1965, 2,433.

16. Francisco Garces, *A Record of Travels in Arizona and California 1775-1776,* translated by John Galvin. Berkeley: John Howell-Books, 1965, 66-69.

17. Perez de Luxan, *Expedition,* 104; "Account," 194.

18. Perez de Luxan, *Expedition,* 105; "Account" 195. The translators revised *cedar* to *juniper.*

19. Perez de Luxan, *Expedition,* 106; "Account," 196-97.

20. Perez de Luxan, *Expedition,* 107; "Account," 197.

21. Major recent publications include N. D. Cook and W. G. Lovell, Editors, *Secret Judgments of God.* Norman: University of Oklahoma Press, 1991; D. T. Reff, *Disease, Depopulation, and Culture Change in Northwestern New Spain, 1518-1764.* Salt Lake City: University of Utah Press, 1991; D. E. Stannard, *American Holocaust.* New York: Oxford University Press, 1992; J. W. Verano and D. H. Ubelaker, editors, *Disease and Demography in the Americas.* Washington: Smithsonian Institution Press, 1992.

22. H. F. Dobyns, *Their Number Become Thinned.* Knoxville: University of Tennessee Press, 1983.

23. S. F. Cook and Woodrow Borah, *The Indian Population of Central Mexico 1531-1610.* Berkeley: University of California, Ibero-Americana:44, 1960, 58-109.

24. Augustin de Vetancourt, *Teatro Mexicano. Vol. 3. Cronica de la Provincia del Santo Evangelio.* Madrid: Jose Porrua Turanzas, 1961, 276.

25. Dobyns, *Their Number Become Thinned,* 20, 30-31, 278-79.

26. Obregon, *History,* 15.

27. As the editor's note (p. 189) states, Hopis actually call the Chavez Pass Pueblo labeled Nuvaqueotaka in "Sixteenth-Century Tusayan" *Topachovi.* I followed Steadman Upham *(Polities and Power.* New York: Academic Press, 1982).

28. Sarah K. Campbell, *Post-Columbian Culture History in the Northern Columbia Plateau.* New York: Garland Pub., 1990.

29. Dobyns, "Sixteenth-Century Tusayan," 187-89.

30. Dobyns, "Sixteenth-Century Tusayan," 191.

31. *Across the Wide Missouri.* Boston: Houghton Mifflin Co., 1947, 139.







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