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DEMOGRAPHIC ANTECEDENTS OF TRIBAL PARTICIPATION IN THE 1870 GHOST DANCE MOVEMENT*

RUSSELL THORNTON

Recently (Thornton 1981) differential participation of American Indian tribes in the 1890 Ghost Dance was analyzed. Viewing the movement as an attempted *demographic revitalization* in response to population decimations, tribal participation was predicted to be related positively to preceding population declines and negatively to absolute population size. A strong negative relationship between size and participation was found, with smaller tribes participating almost always. Population changes were found to have also influenced participation but very differently for tribes of different sizes.

The 1890 Ghost Dance was actually a separate, later manifestation of an earlier Ghost Dance of 1870. The two movements had the same central objective of restoring to life deceased American Indian populations by the performance of prescribed dances (Kroeber, 1904:34-35; 1925:868). Both also emanated from the same locaton in western Nevada. They spread in basically different directions, however. The 1890 movement spread primarily into the great plains, the Southwest and what is now

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western Oklahoma. The 1870 one, in contrast, was limited primarily to western Nevada and portions of Oregon and California (Kroeber, 1925:868-73; Mooney, 1896:Plate LXXXV).

The similarity of the two separate social movements provides an opportunity for replication not often present in the phenomena of the social sciences. This paper reports the replication of the 1890 Ghost Dance analysis using data on the tribes of the 1870 movement.¹

SOME CONSIDERATIONS OF METHOD

Two initial tasks here, as well as in the earlier study, were to establish which American Indian peoples had knowledge of the 1870 Ghost Dance and then to distinguish participants from non-participants. These were accomplished using Cora DuBois (1939), Anna Gayton (1930), W. W. Hill (1944), Joseph Jorgenson (1972), Alfred Kroeber (1904; 1925), Philleo Nash (1955) and Leslie Spier (1927). Chapters on individual tribes as well as the chapter on cults found in Robert Heizer (1978) were also consulted. From these sources a list of one hundred three American Indian peoples having knowledge of the 1870 Ghost Dance movement was obtained.² Using these same sources it was then determined that eighty-two of these peoples participated in the movement and twenty-one did not. (Participation was defined as having performed the Ghost Dance ceremony at least once.) These are listed in the Appendix.

The third task was the obtainment of data which corresponded with those used earlier. These were tribal size at time of the Ghost Dance, at some fifteen to twenty years prior to the Ghost Dance, and at the point of first³ European contact (along with this date). Size at Ghost Dance (*circa* 1870) and at initial European contact (and this date) were fairly readily available. The volume on California Indians of the *Handbook of North American Indians* (Heizer 1978) was recently published containing these population data for many of the Ghost Dance tribes. It was necessary, however, to also utilize various other sources of data. Population size for the period fifteen to twenty years prior to the Ghost Dance were less readily available. In addition to utilizing several sources, various population estimates were required. Resulting population figures (and dates) for the tribes and the source of each are also found in the Appendix.

POPULATION CHANGE AND SIZE
AND TRIBAL PARTICIPATION IN THE GHOST DANCE
MOVEMENT OF 1870

Population Decline

Decline in population size from the 1850s to the time of the 1870 Ghost Dance was examined first. To do so, population declines were dichotomized into those of 50 percent and over and those of less than 50 percent.⁴ As shown in Table 1 there is a relationship of + .58 (significant at the .02 level) between amount of population decline and whether an American Indian tribe participated in the 1870 Ghost Dance movement. Relationship of + .63 (significant at the .01 level) was found between these variables in the study of the 1890 movement.

Decline in population size from initial European contact (whatever that date may have been) until the time of the 1870 Ghost Dance was examined next. In order to do so, declines in population were dichotomized into those of 80 percent and over and those of less than 80 percent.⁵ As indicated in Table 2 there was no relationship between the population declines and whether an American Indian tribe participated in the 1870 Ghost Dance. No relationship between these variables was found in the study of the 1890 movement either.

Table 1. Relationship between Participation in 1870 Ghost Dance and Population Decline from the 1850s to the 1870s^a

Ghost Dance Participation	Population Decline	
	50% & Over	Below 50%
Yes	33	12
No	8	11

^aQ = +.58, X² = 5.66; P < .02.

Table 2. Relationship between Participation in 1870 Ghost Dance and Population Decline from First European Contact to the 1870s^a

Ghost Dance Participation	Population Decline	
	80% & Over	Below 80%
Yes	30	23
No	11	8

^aQ = .03; X² = .01; P > .10.

Population Size

Next, the relationship between population size and participation in the 1870 Ghost Dance was examined. To accomplish this, population size was dichotomized at the median: "large" tribes were those of more than 200 members; "small" tribes were those of 200 members and fewer.⁶ As shown in Table 3 there is a large, negative relationship of $-.72$ (significant at the .001 level) between size and participation.

A large, negative relationship between population size and participation was also demonstrated in the study of the 1890 Ghost Dance. (The relationship is $-.84$, and it is significant at the .001 level.) In both instances, moreover, small tribes participated over-whelmingly: only four of thirty-five small tribes knowing of the 1890 Ghost Dance did not participate; only four of fifty-four small tribes aware of the 1870 Ghost Dance did not participate.

Influence of Size

In the initial study the relationships between these population declines and participation in the 1890 Ghost Dance movement were then reassessed for large and small tribes separately. In the instance of population declines from European contact there was a positive relationship of $+.85$ (significant at the .02 level) for small tribes and an unexpected negative relationship of $-.80$ (significant at the .05 level) for large tribes. (Only one of ten large tribes with large population declines participated in the movement.) In the instance of twenty year population changes the original relationship of $+.63$ was reduced to a non-significant one for large tribes and increased to a significant one of $+.88$ (significant at the .01 level) for small tribes. Thus small

Table 3. Relationship between Participation in 1870 Ghost Dance and 1870s' Population Size^a

Ghost Dance Participation	1870s' Population	
	Large	Small
Yes	32	50
No	17	4

^a $Q = -.72$; $\chi^2 = 10.84$; $P < .001$.

tribes in both instances were more likely to have participated than were the larger tribes. This was as expected since these tribes would have been the ones more threatened by population declines. Suggested as important in explaining the unexpected large, significant negative relationship for large tribes in the case of population decline since European contact was the length of time of this population decline. It was argued that large population losses over a long period *not* resulting in relatively small populations may have not threatened tribal survival, and may have even reaffirmed it. To examine this possibility, participation was related to date of first (extensive) European contact, controlling for tribal size. The reasoning suggested that there should be a positive relationship between participation and recency of contact for large tribes. This was, in fact, the case. There is a relationship of +1.00 (significant at the .001 level) between these variables among large tribes of the 1890 Dance (but no relationship among small tribes).⁷

This same analysis was undertaken for tribes of the 1870 Ghost Dance. Reassessing the original relationship between twenty year population decline and participation in the 1870 Ghost Dance produced no relationship for large tribes and an increased relationship of +.82 (significant at the .05 level) for small tribes. (See Table 4.) This is congruent with the findings in the study of the 1890 Ghost Dance. The relationship between participation and population decline from European contact was then reassessed for large and small tribes. As indicated in Table 5, findings of the 1890 Ghost Dance analysis are only partially replicated. A negative relationship of -.54 (significant at the .10

Table 4. Relationship between Participation in 1870 Ghost Dance and Population Decline from the 1850s to the 1870s by 1870s' Population Size

Ghost Dance Participation	Population Decline	
	50% & Over	Below 50%
Large tribes ^a		
Yes	13	10
No	6	9
Small tribes ^a		
Yes	20	2
No	2	2

^aQ = +.32; X² = .99; P > .10.

^bQ = +.82; X² = 4.35; P < .05.

Table 5. Relationship between Participation in 1870 Ghost Dance and Population Decline from First European Contact to the 1870s by 1870s' Population Size

Ghost Dance Participation	Population Decline	
	80% & Over	Below 80%
Large tribes ^a		
Yes	8	20
No	8	6
Small tribes ^b		
Yes	22	3
No	3	1

^aQ = -.54; $\chi^2 = 3.23$; P < .10.

^bQ = +.57; $\chi^2 = .74$; P > .10.

level) exists between participation and population decline for large tribes of the 1870 Ghost Dance as well as for those of the 1890 one. Although the "relationship" of +.57 for small tribes compares favorably with the positive relationship found in the earlier study, it is not significant. As shown in the table, however, twenty-two of twenty-five small tribes with population decreases of 80 percent and over did participate.

Since the negative relationship for large tribes was replicated, the same analysis regarding dates of European contact was then conducted on 1870 Ghost Dance tribes. The dates of this first contact were dichotomized into 1800 and after and prior to 1800, and then related to participation, controlling for size.⁸ These data are shown in Table 6. The finding of the study of the 1890 Dance is replicated. As is indicated in the Table there is a positive relationship of +.70 (significant at the .01 level) between date

Table 6. Relationship between Participation in 1870 Ghost Dance and Date of First European Contact by 1870s' Population Size

Ghost Dance Participation	First European Contact	
	1800 & After	Before 1800
Large tribes ^a		
Yes	23	9
No	5	11
Small tribes ^b		
Yes	31	19
No	1	3

^aQ = +.70; $\chi^2 = 7.24$; P < .01.

^bQ = +.65; $\chi^2 = 2.10$; P > .10.

of European contact and participation for large tribes (and no relationship for small tribes).⁹

CONCLUSION

The unique opportunity to replicate a demographic study of the 1890 Ghost Dance movement has produced support for the original findings. It has now been demonstrated that demographic processes influenced differential tribal participation in the 1870 Ghost Dance as well as in the 1890 one.

NOTES

1. As the 1870 Ghost Dance spread among Indian peoples, it developed three more or less distinct manifestations: the Earth Lodge Cult, the Bole-Marú and the Big Head Cult. All are here considered as part of the movement.

2. As was the case with the study of the 1890 Dance, sub-tribal distinctions and close geographical designations were avoided generally so as not to impose any artificial "smallness." However, authorities such as DuBois and Gayton were followed generally when they indicated distinct tribal or geographical differences (e.g., for the Pomo, in the former instance; for the Paviotso, in the latter instance) and/or differences in Ghost Dance participation (e.g., for the Alseas).

3. In the earlier study first *extensive* European contact was used, not just European contact *per se*; however, this is likely only a minor difference.

4. In the study of the 1890 Ghost Dance this variable was population-decrease or population-increase.

5. In the study of the 1890 Ghost Dance the dichotomy was made between population declines of 50 percent and over and less than 50 percent. This difference is because of the distribution on the variable; the tribes of the 1870 dance had more severe declines from European contact than did those of the 1890 Dance.

6. Size was also dichotomized at the median for the tribes of the 1890 Dance. However, in that instance, "large" tribes were those of 829 members or more and "small" tribes were those of 822 or fewer members.

7. The overall relationship is +.68, and it is significant at the .01 level.

8. For tribes of the 1890 movement first extensive European contact was dichotomized into before and after 1800.

9. The overall relationship is +.64, and it is significant at the .01 level.

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Appendix

Tribe	Ghost Dance ^a	Population Size			
		Contact	(Date ^m)	1850s	1870s
Achumawi	yes	3,000 ^b	(1800?)	2,000? ^{g,h}	1,100 ^{g,j}
Alseas		2,000? ^{c,d}	(1780)	1,000? ^h	
Alsea Sub.	yes	(1,000?)		. .	108 ^P
Other	no	(1,000?)		. .	422 ^{P,q}
Atsugewi	yes	850 ^e	(1827)	600? ^{g,h}	450? ^b
Bannock		1,000 ^d	(1845 ^c)	1,000? ^h	
Ft. Hall	yes	. .		. .	575 ^{P,r}
Lemhi	yes?	. .		. .	190 ^{P,r}
Malheur	yes?	. .		. .	87 ^{s,r}
Cahto	yes	1,000 ^e	(1800?)	500	225? ^j
Cahuilla	no?	6,000 ^e	(1774)	3,500?	1,181 ^e
Calapuya		3,000? ^e	(1780 ^d)	200? ^h	
Grande Ronde	yes	. .		. .	30 ^k
Chilula	yes?	550 ^e	(1800?)	500 ^g	50? ^h
Chumash	no	20,000 ^f	(1542)	1,200? ^g	659 ^e

Tribe	Ghost Dance ^a	Population Size			
		Contact	(Date ^m)	1850s	1870s
Clackamas		2,500 ^d	(1780 ^d)	150 ^{h,n}	
Grande Ronde	no?	. .		. .	100 ^{t,n}
Columbia River	no	?	(1780 ^d)	?	2,000 ^P
Coos		2,000 ^c	(1780 ^d)		
Alesea Sub.	yes	. .		450 ^h	135 ^t
Costanoan	yes	11,000 ^g	(1602)	1,000 ^g	281 ^e
Cupeno	no	625 ^{e,h}	(1795)	300 ^h	75 ^h
Gabrielino	no	5,000 ^e	(1770)	700 ^h	150 ^h
Gosiute	yes?	?	(1845 ^d)	300 ^h	256 ^P
Huchnom	yes	2,100 ^e	(1850)	(2,100 ^e)	79 ^e
Hupa	no	1,475 ⁱ	(1850)	(1,475 ⁱ)	641 ^e
Karok	yes	2,700 ⁱ	(1810?)	1,050?	1,300 ^e
Klamath		800 ^d	(1780 ^d)	?	
Klamath Res.					
Lower End	yes	. .		. .	547 ^{P,u}
Upper End	yes	. .		. .	120 ^u
Siletz Res.	yes	. .		. .	45 ^P
Klickitat	no	1,000 ^d	(1780 ^d)	400 ^b	300 ^h
Konkow	yes	3,000 ^e	(1808)	2,500 ^b	159. ^k
Lassik	yes?	(1,411 ^e)	(1850?)	(1,411 ^e)	175 ^e
Luiseno	no	10,000 ^e	(1776)	2,650	1,299 ^h
Maidu	no	3,000 ^e	(1825?)	2,000 ^h	1,550 ^g
Mattole	no	2,476 ⁱ	(1853)	(2,476 ⁱ)	195 ^h
Miwok					
Coast	yes	2,000 ^e	(1579)	250 ^g	60 ^e
Eastern	yes	19,000 ^e	(1775?)	5,000	1,000 ^{P,h}
Lake	yes	900 ⁱ	(1821)	100 ^g	50 ^{e,h}
Modoc			(1770 ^d)	?	
California	yes	350 ^b			159 ^u
Oregon		350 ^b			
Klamath Res.					
Lower End	yes?	. .			81 ^u
Upper End	yes?	. .			130 ^u
Monache	yes	1,000 ^e	(1770)	800 ^h	550 ^e
Navaho	yes	8,000 ^d	(1680 ^d)	10,000 ^o	11,868 ^P
Nisenan	yes	3,000 ^e	(1790?)	900 ^h	850 ^e
Nomlaki	yes	2,000 ^e	(1808)	1,000 ^b	190 ^{t,h}
Paiute		1,500 ^c	(1845 ^d)	(1,500 ^c)	
California	yes	. .		. .	184 ^P
So. Nevada	yes	. .		. .	631 ^P

Tribe	Ghost Dance ^a	Population Size			
		Contact	(Date ^m)	1850s	1870s
Patwin	yes	5,000 ^b	(1800)	1,000? ^h	250? ^{g,h}
Paviotso		3,500? ^c	(1845 ^d)	?	
California					
Surprise Val.	yes	. . .			150? ^h
Other	yes	. . .			175? ^{p,h}
Nevada					
Pyramid Lake	yes	. . .			500 ^p
Walker River	yes	. . .			600 ^p
Central	yes	. . .			195? ^{p,h}
Oregon					
Klamath Res.					
Silver-Sum.	yes	. . .			128 ^u
Warner Val.	yes	. . .			150 ^u
Pomo					
Eastern	yes	1,260 ^e	(1776?)	800? ^{g,h}	300? ^t
Northeastern	yes?	350 ^e	(1776?)	250? ^{g,h}	100 ^t
Southeastern	yes	750 ^e	(1776?)	450? ^{g,h}	100 ^t
Western	yes	9,475 ^e	(1776?)	3,000? ^{g,h}	900? ^t
Santiam		500? ^{d,h}	(1780 ^d)	250? ^h	
Grande Ronde	yes	. . .		. . .	75 ^k
Serrano	no	2,000? ^h	(1771)	400? ^h	390 ^t
Shastan					
Shasta		2,000? ^j	(1820)	2,000? ^{g,h}	
California	yes	. . .		. . .	300? ^{t,h}
Oregon					
Grande Ronde	yes	. . .			
Siletz Res.	yes	. . .		. . .	50? ^{t,h}
Other	no	1,000 ^e	(1820)	900? ^h	800? ^e
Shoshone		4,500 ^d	(1845 ^d)		
Idaho					
Ft. Hall	yes	. . .		1,000? ^h	932 ^p
Lemhi	yes?	. . .		500? ^h	200 ^k
Wyoming					
Bridger Basin	yes	. . .		. . .	200? ^h
Other					
Sheepsteater	yes?	. . .		. . .	200 ^k
Snakes	yes?	. . .		. . .	86 ^s
Weber	yes?	. . .		. . .	300? ^s
Sinkyone					
Lolangkok	no	2,145 ^e	(1853)	(2,145 ^e)	300? ^e
Shelter Cove	no	2,076	(1853)	(2,076 ^e)	275? ^e
Siuslaw		2,000? ^{d,h}	(1780 ^d)	500? ^h	
Siletz Res.	yes	. . .		. . .	68 ^k

Population Size

Tribe	Ghost Dance ^a	Contact	(Date ^m)	1850s	1870s
The Dallas	no	1,600 ^k	(1780 ^d)	1,200? ^h	1,070 ^q
Tipai-Ipai	no	6,000? ^{e,h}	(1769)	2,250? ^h	1,086 ⁿ
Tolowa	yes	2,400 ^d	(1828)	316 ^g	200 ^g
Tubatulabal	no	750? ^h	(1776)	250	195? ^h
Tututni		550? ^d	(1780 ^d)	700? ^h	
Grande Ronde	yes	. .		. .	85 ^k
Siletz Res.	yes	. .		. .	189 ^p
Umpqua		1,000? ^{d,h}	(1780)	250? ^h	
Alesa Sub.	yes	. .		. .	44 ^k
Grande Ronde	yes	. .		. .	135 ^k
Ute		4,500 ^{d,1}	(1845 ^d)		
Capote, Moache					
Wiminuchi					
Capote	yes	. .		. .	147 ^l
Moache	yes	. .		. .	512 ^l
Wiminuchi	yes	. .		. .	250 ^l
Pahvant	yes?	. .		. .	134 ^q
Uncompahgre	yes?	. .		. .	2,290 ^q
Unitah and					
White River					
Unitah Res.	yes	. .		. .	185? ^{h,r}
Other	yes	. .		. .	371? ^{h,r}
White River					
Parsanveh	yes	. .		. .	220? ^h
Yampa	yes	. .		. .	250? ^h
Wailaki	yes	2,760 ^e	(1853?)	(2,760 ^e)	150 ^g
Wappa	yes	4,600	(1800?)	800 ^g	92 ^h
Washo		1,000 ^d	(1845 ^d)	(1,000 ^d)	
Reno	yes	. .		. .	100 ⁿ
Other	yes	. .		. .	450 ^{n,u}
Whilkut	yes	500 ^h	(1850?)	(500 ^h)	100? ^{t,h}
Wintu	yes?	14,250 ^e	(1826)	6,850 ^g	1,000 ^e
Wiyot	no	3,300 ^e	(1775)	900 ^g	625 ^q
Yana			(1821)		
Central	yes	500? ^h		350? ^b	100 ^q
North	yes	500? ^h		350? ^b	100 ^q
Yoncalla		500? ^{d,h}	(1780 ^d)	. .	
Grande Ronde	yes	. .		. .	80? ^{t,h}
Yuki					
Coast	yes	750 ^g	(1850)	(750 ^g)	50 ^e
Proper	yes	(2,000? ^h)	(1856)	(2,000? ^h)	238 ^e

Population Size

Tribe	Ghost Dance ^a	Contact	(Date ^m)	1850s	1870s
Yokuts					
Foothill	yes	9,600 ⁱ	(1825?)	5,000? ^{g,h}	266? ^q
Northern Valley	yes	28,252 ^e	(1769)	2,500? ^{g,h}	200? ^q
Southern Valley	yes	15,700 ^e	(1772)	2,500? ^{g,h}	254? ^q
Yurok	yes	3,100? ^h	(1775)	2,450 ^g	1,125 ^g

^a Information in this column is from Dubois (1939), Gayton (1930), Heizer (1978), Hill (1944), Jorgenson (1972), Kroeber (1925) and Spier (1927).

^b From Cook (1976a).

^c From Kroeber (1939).

^d From Mooney (1928).

^e From the individual tribal chapter in Heizer (1978).

^f From Cook and Heizer (1965).

^g From Cook (1976b).

^h Estimated.

ⁱ From Baumhoff (1963).

^j From Kroeber (1925).

^k From U.S. Board of Indian Commissioners (1874).

^l From U.S. Commissioner of Indian Affairs (1873).

^m Unless indicated otherwise, information in this column is from the individual tribal chapter in Heizer (1978).

ⁿ From Du Bois (1939).

^o From Johnston (1966).

^p From U.S. Commissioner of Indian Affairs (1877).

^q From U.S. Bureau of the Census (1894).

^r From Jorgenson (1972).

^s From U.S. Commissioner of Indian Affairs (1875).

^t From U.S. Bureau of the Census (1915).

^u From Nash (1955)