



MARITAL DISUNION AND FERTILITY OF BOLIVIAN AYMARA WOMEN
IN THE PROCESS OF CULTURAL CHANGE

by

Benjamin Franco-Suarez

This thesis/dissertation document has been electronically approved by the
following individuals:

Strang, David(Chairperson)
Swedberg, Richard (Minor Member)
Lichter, Daniel T. (Minor Member)

MARITAL DISUNION AND FERTILITY OF BOLIVIAN AYMARA WOMEN
IN THE PROCESS OF CULTURAL CHANGE

A Thesis

Presented to the Faculty of the Graduate School
of Cornell University in Partial Fulfillment for the Degree of
Doctor of Philosophy

By

Benjamin Franco-Suarez

August 2015

© Benjamin Franco-Suarez

ALL RIGHTS RESERVED

VITA

Benjamín Franco-Suarez was born on March 31, 1925, in Vallegrande, Bolivia, and became a United States citizen in 1980. His studies include: Economics, U.M. San Andres, La Paz, 1957-62. Statistics-Sampling, Minnesota U. 1948-49; Michigan U. 1951-52. Demography, CELADE, Chile, 1958-59. His employment history is: Direccion General Estadistica-Censos, La Paz, Bolivia, 1945-52; Caja Nacional Seguridad Social, La Paz, Bolivia, 1953-63; UN POPULATION DIVISION, New York, NY, USA, 1963; Inter American statistical Institute (IASI), Washington, D.C., 1964; Pan American Health Organization (PAHO), Washington, D.C., 1965-67; United Nations Development Programme (UNDP) at Facultad Medicina, UNAN, Nicaragua, 1972-74; UNDP at Consejo Nacional Planificacion Economica, Guatemala, 1975; Clerk, Justice Department, Washington D.C., USA, 1977; UNDP, Team Leader/Demographer Analyst, State Planning Comission, Mogadishu, Somalia, 1978-79; Consultant, US Census Bureau, 1979-80. Unemployed since 1981. He pursued graduate studies, Sociology, Cornell University, 1967-1972. He was member, IASI, PAA, SID. His writings include: Probability Sample, Empresas Cotizantes, Seguro Social Obligatorio, Bolivia, 1954; Politica de Poblacion, Guatemala, 1974; Fecundidad, Mortalidad, Guatemala, 1973; Chapters II-III, publication entitled Alcohol Problems and Programs in the Fairfax Area, A Needs Assessment, 1977-78.

He married Gloria Ayoroa in 1953 and has two children, Benjamin and Monica.

For Gloria, Ben, and Monique

ACKNOWLEDGMENTS

I am deeply grateful to Professor J. Mayone Stycos for opening the door to pursue graduate studies at Cornell University. He was, is and will always be a source of inspiration for his devoted contribution to studies and research on population.

I owe special gratitude to Professor Parker G. Marden for his proficient guidance in my learning and research.

I gratefully acknowledge the financial support of Cornell University through the Humanities and Social Sciences Program, of the Ford Foundation through the International Population Program of Cornell University and of the Population Council, New York, Institution which graciously financed, in addition to the survey research in Bolivia, to the honorariums and fees of Cornell University, and for providing for living expenses of my family during from September 1970 through March 1972.

Others who deserve my gratitude are: Professor Donald K. Freebairn, Alcides Aliaga Encinas (translation into Aymara), Mario Meave Angulo, Celestino Castro (Director, Santiago de Huata Escuela Normal), my wife, Yoyi, for her accurate typing of many drafts, Barbara Stevens, for her patient and careful editing of a foreigner's English language, Angelina Guerini, my son, Ben, for his immense filial love and help in myriad ways without any reservation, including retyping the thesis and computer drawing of graphs.

My wife and children deserve special mention and deepest gratitude for their understanding, patience, and love during countless hours of graduate work.

TABLE OF CONTENTS

Chapter		Page
I	INTRODUCTION	1
	Bolivian Peasantry: Preliminaries	
	Peasantry	5
	Cultural Change: Interpretation and method	8
	Fertility of Peasantry in Process of Cultural Change	9
II	THE PROBLEM	11
	Some basic ideas	11
	Empirical antecedents	18
	Hypotheses	63
III	THE DATA	64
	Design: The ideal and the Practice	65
	Data Collection in the City of La Paz	67
	Data Collection in the Rural Areas	71
	The Questionnaire	78
IV	FERTILITY	82
	Restrictions and Supporting Features	82
	Evaluation by Comparison	90
	Differential Fertility	100
	Validation of differential fertility	105
Chapter		Page
V	CULTURAL CHANGE – Method	119
	Indicators	120

	Some Demographic Characteristics	121
	Language, Dress, Diet, and Artifacts as signs of Cultural Change	127
	Universalism – Particularism	133
	Rationality	134
	Submissiveness	138
	Aspirations	141
	Summary	143
VI	THE TESTING OF THE HYPOTHESES	145
	The Statistical Method	146
	Trial Marriage and Premarital Sexual Intercourse	147
	Age at First Sexual Union	160
	Marital Disunion	164
	Formal Unions	170
	Bivariate and Multivariate Correlation Analysis	175
VII	CONCLUSIONS	184
	The Central Hypothesis	199
	APPENDIX I - Cuestionario (Spanish)	206
	APPENDIX II – Questionnaire (Aymara Version)	219
	BIBLIOGRAPHY	229

LIST OF TABLES

Table		Page
1.	Economically active population in agricultural, forestry, hunting and fishing; Latin America, 1950-64	2
2.	Some characteristics of the Bolivian population in 1950	7
3.	Some characteristics in the 1961 census of Population of Peru. A comparison among Departments differentiated by the Spanish speaking proportions	20
4.	Knowledge and use of contraception, Bolivia, 1968	39
5.	Cumulative percent at age at marriage, Bolivia, 1968	41
6.	Percent declaring single status, and sample bias by age, Bolivia, 1968	42
7.	Crude and age-standardized total fertility, Bolivia, 1968	43
8.	Area and number of respondents in the city of La Paz	68
9.	Reliability of respondents (in percent) according to interviewers evaluation, by area and age-generation, 1970	85
10.	Understanding of questions by respondents (in percent), by area and age-generation, 1970	87
11.	Respondents' trust (in percent), by area and age-generation, 1970	88
12.	Percent of respondents helped or interfered with by others during the interview, by area and age-generation, 1970	89
13.	A comparison of the age distribution of respondents (in percent), by areas, 1942 Census of City of La Paz (Indian women), CEP's investigation, 1968, and this study's data, 1970	93
14.	A comparison of the civil status distribution of respondents (in percent), by areas, CEP's investigation, 1968, and this study's data, 1970	99

Table		Page
15.	Mean number of live births (per woman), by age and area	101
16.	Mean number of live births, by type of interviewers (city area and subareas of the <u>Altiplano</u>) and generation	108
17.	Mean number of live births per woman at risk of conception by type of interviewers (city area and subareas of the <u>Altiplano</u>) and by generation	109
18.	Mean number of children dead per woman at risk of conception, by type of interviewers (city area and subareas of the <u>Altiplano</u>) and by generation	112
19.	Mean number of pregnancies per woman at risk of conception, by type of interviewers (city area and subareas of the <u>Altiplano</u>) and by generation	113
20.	Mean number of stillbirths per woman and at risk of conception, by type of interviewers (city area and subareas of the <u>Altiplano</u>) and by generation	114
21.	Mean number of abortions per woman at risk of conception, by type of interviewers (city area and subareas of the <u>Altiplano</u>) and by generation	115
22.	Mean number of current pregnancies per woman at risk of conception, by type of interviewers (city area and subareas of the <u>Altiplano</u>) and by generation	116
23.	Highest educational level achieved by respondent women (in percent), by area and generation	125
24.	Percent of women speaking <u>Aymara</u> to children and in answer to Spanish, by area and generation	127
25.	Type of dress worn by women (in percent), by area and generation	129
26.	Preferred diet of women (in percent), who selected five or six foods from a list of paired foods (traditional-against modern), by area and generation.	130

Table		Page
27.	Preferred artifacts by women (in percent) who chose a number of artifacts from a list of nine paired artifacts (traditional against modern) by area and generation	131
28.	Preference of women (in percent) when seeking advice to buy a house or when electing a Mayor, by area and generation	134
29.	Ideal and material help sought by women (in percent) in cases of illness or lack of rain, by area and generation	136
30.	Mate deciding on the number of children and the place of residence according to respondents (in percent), by area and generation	140
31.	Skill or job, farm or city work preferences for herself and first son of peasant women (in percent), by area and generation	142
32.	Current civil status of all women (in percent) by area and generation	148
33.	Type of the first sexual union of all women (in percent), by area and generation	149
34.	Number of live births per 100 women at risk of conception, by area and generation: a comparative fertility outcome by type of the first sexual union	152
35.	Type of outcome of sexual unions(in percent) begun as trial marriage, by area and generation	154
36.	Percent of all women having had or not sexual intercourse before a sexual union, by area and generation	156
37.	Mean number of live births per 100 women at risk of conception, by area and generation: a comparative fertility outcome by having had or not sexual intercourse before a sexual union	158
38.	Age at first sexual union of women (in percent) at risk of conception, by area and generation	162
39.	Mean length of separations (in years), by current civil status, area, and generation	172

Table		Page
40.	Mean net length of conjugal life (in years), by current civil status, area, and generation	174
41.	<p>Number of cases (#) and arithmetic means (\bar{x}) for the dependent:</p> <p>(1) Live Births (LBs, per 1000 women),</p> <p>and independent variables:</p> <p>(2) Respondent's current age (RCUAGE),</p> <p>(3) Length living (LENLIV),</p> <p>(4) Age at first sexual union (AGEFSU),</p> <p>(5) Length of separation (LENSEP), and</p> <p>(6) Sex intercourse before sexual union (SIBSU), in percent,</p> <p>La Paz city (LPC), Santiago de Huata, rural (SHR), and Caquiaviri-Copacabana, rural (CCR)</p> <p>Bolivian Aymara women in sexual union and women in marriage, 1970.</p>	176
42.	Partial correlation coefficients ($r_{1-2,3,4,5,6}$) for the dependent variable (1) Live Births (LBs) with five independent variables for Bolivian <u>Aymara</u> women in Sexual union and Marriage in La Paz city (LPc), Santiago de Huata rural (SHr), and Caquiaviri-Copacabana rural (CCr), 1970	179
43.	Multiple correlation coefficients ($R_{1-2,3,4,5,6}$) for the dependent variable (1) Live Births (LBs) and the stated independent variables (2,3,4,5,6) for Bolivian <u>Aymara</u> women in sexual union and, marriage in La Paz city (LPc), Santiago de Huata rural (SHr), and Caquiaviri-Copacabana rural (CCr), 1970	181
44.	R-square and R-square change in the multiple regression coefficients computer calculations for the dependent variable of Live Births (1. LBs) and the independent variables stated*, for Bolivian Aymara women in sexual union and marriage, in La Paz city, Santiago de Huata rural, and Caquiaviri-Copacabana rural, 1970	182
45.	R-square change	183

LIST OF GRAPHS

Graphs		Page
1.	Voluntary-involuntary categorization of marital disunion	14
2.	Estimated fertility rates per woman by five-year age intervals, Peru, 1940: Piura, Puno	23
3.	Estimated fertility rates per woman by five-year age intervals, Peru, 1940: Lambayeque, Ayacucho	24
4.	Estimated fertility rates per woman by five-year age intervals, Peru, 1940: Cusco, La Libertad	25
5.	Estimated fertility rates per woman by five-year age intervals, Peru, 1940: "Indian"	26
6.	Estimated fertility rates per woman by five-year age intervals, Peru, 1940: "Spanish"	27
7.	Estimated age-specific birth rates, Bolivia, 1968: Rural (Spanish) Santa Cruz; Rural (<u>Aymara</u>), La Paz; Urban, La Paz	36
8.	A tentative scheme for the dependency relationship of fertility through the intermediate variables in a society in process of cultural change	57
9.	Estimated age-specific birth rates, Bolivia, 1970: Rural La Paz (CEP), Peasant at City, <u>Altiplano</u> Peasant	95
H1.	Cultural Rank and Incidence (Percent) of Trial Marriages. La Paz City (LPC), Santiago Huata Rural (SHR), and Caquiaviri-Copacabana Rural (CCR), 1970	185
H2.	Cultural Rank and Incidence (Percent) of Women having had Sexual Intercourse before a Sexual Union. LPC, SHR, CCR, 1970	187
H3.	Cultural Rank and Incidence (Percent) of the first Sexual Union of Women 13 – 19 years old at risk of Conception (a). LPC, SHR, CCR, 1970	188

Graphs		Page
H4a.	Cultural Rank and Incidences (Percents) of Young Women's Marital Disunion (a) and of Young Women having had Sexual Intercourse before Sexual Union. LPC, SHR, CCR, 1970	190
H4b.	Cultural Rank and Incidences (Percents) of older Women's Marital Disolution (a) and of older Women having had Sexual Intercourse before a Sexual Union. LPC, SHR, CCR, 1970	191
H5a.	Cultural Rank, Mean Length (Years) of Older Women's Separations and Ratio of Formal / Informal of their Unions. LPC, SHR, CCR, 1970	192
6C.	Cultural Rank and Incidences of Fertility of Young Women in Consensual Union and in Trial Marriage, and their Incidence (%) of Trial Marriages. LPC, SHR, CCR, 1970	194
7C.	Cultural Rank and Incidence of Fertility for Women having had or not Sexual Intercourse before Sexual Union. LPC and SHR, 1970	195
8C.	Cultural Rank and Incidences (Percents) of Women's Marital Disunion (a) and Fertility. LPC and SHR, 1970	197
9C.	Cultural Rank, Incidence of Fertility of Young Women and their Formal Union / Informal Union Ratios. LPC and CCR, 1970	200

Chapter I

INTRODUCTION

Bolivian Peasantry: Preliminaries

From the demographic and economic point of view, a striking feature of the Bolivian population is that the economically active population in agricultural occupation constituted a substantially large substratum of Bolivian society in 1950¹ and probably also in 1970. If the economically active population in agriculture were equated with peasantry², then it can be inferred from Table 1, that the Bolivian peasantry³ was one of the largest of Latin America⁴ in 1950 (and possibly also in 1970). About 72 percent of Bolivia's economically active population was engaged in agricultural and related activities, as compared to a mean percent of about 67 percent from the I group of eight countries in Table 1.

Within that realm of economic development, the importance and significance of the past and future roles of the peasantry as large as Bolivia's

-
- 1 The last Bolivian census of population was taken on 3 September 1950.
 - 2 An attempt is made later to link the two concepts, peasantry and agricultural population of Bolivia.
 - 3 Adjustments, for example, by addition of the economically dependent population (aged 0 to 9, and over 64 years) and by subtraction of the agricultural population not strictly peasant would not, presumably, change substantially the order of magnitude shown in Table 1, at least as far as Bolivia is concerned.
 - 4 Incidentally, it is interesting to note in Table 1 that in 15 out of 20 Latin American countries the agricultural population (economically active) was 46 percent or a larger proportion of the total economically active population. If the assumption of a one-to-one correspondence between peasantry and agricultural population of other countries is correct, then the study of social and cultural change of peasantry in those countries might also be of interest.

Table 1. Economically active population in agriculture, forestry, hunting, and fishing; Latin America, 1950-64.

Country	Census Year	Age-span of Econ. Act. Population	Total Econ. Active Population (000's) (a)	Population in Agriculture	
				Absolute (000's) (a)	Percent
Haiti	1950	14 +	1,747	1,454	83.2
Bolivia	1950	10 +	1,361	974	71.6
Honduras	1961	10 +	568	379	66.7
Guatemala (b)	1964	7 +	1,317	861	65.4
Dominican Republic (b)	1960	15 +	821	504	61.4
El Salvador	1961	10 +	807	486	60.2
Nicaragua	1963	10 +	477	283	59.4
Ecuador	1962	12 +	1,443	802	55.6
Subtotals I	(8 countries)		8,541	5,743	67
Paraguay	1962	12 +	586	321	54.7
Mexico	1960	8 +	11,332	6,144	54.2
Brazil (b)	1960	10 +	22,651	11,698	51.6
Peru	1961	6 +	3,125	1,556	49.8
Costa Rica	1963	12 +	395	194	49.2
Colombia	1960	12 +	5,134	2,427	47.3
Panama	1960	10 +	337	156	46.2
Subtotals II	(7 countries)		43,560	22,496	51
Cuba	1953	14 +	1,972	819	41.5
Venezuela	1961	10 +	2,351	760	32.3
Chile (b)	1960	15 +	2,356	648	27.5
Argentina	1960	14 +	7,524	1,352	18.0
Uruguay	1963	10 +	1,016	182	17.9
Subtotals III	(5 countries)		15,219	3,761	25

Source: Statistical Compendium of the Americas, IASI, Pan American Union, Washington, D.C. (Table 50).

Notes: (a) Rounded to the nearest thousand.
(b) Estimate based on a sample.

have long been recognized ⁵. As stated ⁶ in the United Nations publication entitled Economic Development of Bolivia (1958: 8):

The persistence of ancient social and economic relations within the agricultural sector has been one of the main causes for the general retardation of the Bolivian economic development.

And, it is added (ibid., 250):

All efforts (for general economic development) in the future must assign a high priority to the agricultural development of the Altiplano in order to achieve an increase in the peasantry's (campesinado) income.

The land reform decreed and implemented in 1953 undoubtedly was a step forward affecting change of peasantry within the domains of economics and economic development.

At the sociological level of analysis, the post-revolutionary action taken by the Bolivian government beginning 1952 can be thought to have had at least some impact for social and cultural change. Greater integration of the peasant within the larger society, for example, by converting him from serf to land owner, can be assumed to have resulted from the 1953 Bolivian land reform. Similarly, social and cultural change may be hypothesized to have occurred as an outcome stimulated by the 1952 decree of universal suffrage and by the 1953 education

5 For general treatment of the problem, see, for example: W. Arthur Lewis, Economic Development with Unlimited Supplies of Labor; United Nations, Land Reform: Defects in Agrarian Structure and Obstacles to Economic Development; and John W. Mellor, The Economics of Agricultural Development, chapters 8, 14. For a specific treatment, see, for example, United Nations, Economic Development of Bolivia, chapters I and IV; H. Osborne, Indians of the Andes: Aymaras and Quechuas; M. Bonifaz, El Problema Agrario-Indigena en Bolivia; R.A. Reyerros, Historia Social del Indio Boliviano; and R.W. Patch, Social Implications of the Bolivian Agricultural Reform.

6 Author's free translation from the Spanish original.

reform, both actions aimed at benefiting the peasantry or campesinos.⁷

In spite of a predictable significant change by the stimuli mentioned, the study of social and cultural change among the Bolivian peasantry in general, and among the Aymara peasantry in particular, apparently has not been given the attention it deserves. Works by Patch (1956), Walker (1968), and Heath et al. (1969) focus on social change among the peasants and give some but not great emphasis to cultural change. Other contributions⁸ either are not centered on peasantry or treat social change only and in limited scope, or are pre-revolutionary. Of the post-revolutionary work treating cultural change explicitly, the study by the Centro para el Desarrollo Social y Economico (DESEC) (1968), entitled Cambio y Tradicionalismo is worth mentioning as an exception to the rule. But this study and that by Heyduk (1971) refer to the Quechua peasant inhabiting the valleys of Cochabamba and of “Highland Chuquisaca”, respectively. Recent similar work, even if only studying culture and not cultural change as Heyduk does, is absent for the Altiplano Aymara peasant.

The preliminaries in the foregoing paragraphs place the Bolivian peasantry as a substratum that first, and in terms of its population, its weight is very heavy within the global society, and economically was a factor responsible for the past economic retardation and probably is a key factor for the future economic

7 In Patch's words: “The preliterate population, comprising some 60 percent of the nation, is the principal object of the government's reforms” (U.S. Assistance in a Revolutionary Setting 1961:111).

8 See, for example, O.E. Leonard (1966), El Cambio Economico y Social; R.W. Patch (1961), U.S. Assistance in a Revolutionary Setting; M. Bonifaz (1948), El Problema Agrario-Indigena en Bolivia; R.A. Reyeros, Historia Social del Indio Boliviano; and H. Osborne (1952), Indians of the Andes, Aymaras and Quechuas; and (1954), Bolivia, A Land Divided.

development. And while social change has been a matter of concern of social scientists interested in the results of governmental action after the 1952 National Revolution, evidence to support or negate cultural change among the peasantry, particularly Altiplano Aymara peasantry, is lacking.

Peasantry

Since the study of this research effort is peasantry, it is necessary to define the term and see if the Bolivian Aymara population conforms to the characteristics agreed upon for peasantry in general.

In a discussion of "What is a Peasant?" Foster (1967: 2) quotes Kroeber (1948:284) in the following terms:

Peasants...constitute part-societies with part-cultures. (They are) definitely rural -- yet live in relation to market towns; they form a class segment of a larger population which usually contains also urban centers... They lack the isolation, the political autonomy, and the self-sufficiency of tribal populations; but their local units retain much of their old identity, integration, and attachment to soil and cults.

In identifying some economic characteristics of peasants, Foster again cites Firth (1946:22) saying that:

Like the European peasantry the Oriental peasantry are communities of producers on a small scale, with simple equipment and market organization, often relying on what they produce for their subsistence.

A more precise economic characterization of the peasant is given by Keesing and Keesing (1971:234 – 235) at time of stating that:

Most writers agree that an agricultural mode of life, with an emphasis on subsistence farming but a dependence on the products and markets of the wider society, is a dominant feature of peasant life everywhere. The peasant lives at once in a world of his own and a wider one. The center of that wider world on whose margins the peasant lives on is the city.

Finally, Redfield's (1967:25 – 34) distinction between "Great Tradition" (non-peasant, elite substratum) and "Little Tradition" (peasant, dependent substratum) would seem to fit well in an attempt to understand the Bolivian case. In Foster's (1967:6) words it is elite dependent idea that:

carries what Redfield called the "Great Tradition" which gives continuity and substance to the sequences of advanced culture, and which lies in contradistinction to the "Little Tradition" --- which characterizes villagers themselves.

Without hesitation it may be stated that before the 1952 Bolivian Revolution, the Bolivian Indians constituted a substratum with all the characteristics of peasantry. The bulk of them lived partly isolated in the Altiplano or Valleys (rural) and residing for the most part on land owned by Bolivian elites who lived in the cities. Politically, the land owners held the power and used it to maintain the Indians in their ancestral occupation of agricultural serfs and, consequently, ignored the Indians education and hindered their integration within the larger society. In Patch's words: "The institutions and customs of rural Bolivia placed political and economic power in the hands of small groups who were primarily interested in preserving the static social system" (Patch, 1961: 139-140). Of the traits that made, or at least help, to retain the campesinos' "identity, integration, and attachment to soil and cults," (Kroeber, 1948:284, as quoted by Foster, 1967:2) three seem to be outstanding: occupation, language, and illiteracy. As has been seen a great majority of the Bolivian campesinos work in agricultural and related activities ⁹. As for language and illiteracy, it is not a

9 In the 1950 Census of Population (table 60) it is shown that of 1,360,782 persons economically active, 952,876 were in agricultural activities proper, and only 21,083 persons were in other related activities, such as cattle, forestry, hunting, and fishing. The rest, of course, were classified in non-agricultural activities (376,823 persons).

coincidence but a sign of close association that in 1950 the population classified as speaking Aymara and Quechua was nearly as high as the population classified as illiterate. This close association is readily noticeable in Table 2, together with other characteristics on rurality and aboriginal descent.

Furthermore, as is pointed out by Mortara (1963:3) in reference to populations of Mexico, Guatemala, Ecuador, Peru, and Bolivia:

The population of large areas is mostly of aboriginal – – pure or mixed – – descent... (and) the apparently ethnic census classification is rather based on social than on anthropological characters (sic) being partly determined by status and culture more than by descent.

Table 2. Some characteristics of the Bolivian population in 1950 ¹

Characteristics	Population		%	Population		%
Urban – Rural	U.	947	35	R.	1,757	65
Non-Indian – Indian	N.I.	1,001	37	I.	1,703	63
Spanish – Aymara-Quechua	S.	972	37	A.Q.	1,652	63
Literate – Illiterate ²	L.	709	31	Ill.	1,570	69
Non-Agriculture – Agriculture ³	N.A.	377	28	A.	974	72

1. Figures rounded to nearest thousand

2. Population five years of age and older.

3. Population ten years of age and older, and economically active.

Source: Direccion general de Estadistica y Censos, Censo Demografico 1950, Editorial Argote, La Paz, Bolivia, 1955.

Unfortunately, Bolivia has not taken a population census after 1950.

Limited information gathered by sample procedures in 1963, however, ¹⁰ suggest that change may have occurred. In effect, the illiteracy proportion changed from

¹⁰ Caution in the interpretation of the data is recommended by the Departamento Nacional de Muestreo, La Paz, Bolivia.

about 63% ¹¹ in 1950 to about 47% in the sample enumeration of 1963; and the economically active population in agriculture apparently has changed from about 72% in 1950 to about 67% in 1963.

The signs of change just mentioned need confirmation. This research effort is an attempt to do so.

Cultural Change: Interpretation and Method

To examine the Bolivian peasants' cultural change, a definition of "culture" as used for the purposes of this study is in order.

Following Valentine (1970:1 – 12), culture will be understood as the "organization of experience" by Bolivian peasants as a collectivity. In an attempt to place them within the larger Bolivian society, some indicators for their shared "knowledge, belief, art, morals, laws, (and) customs" will be examined. Thus, an attempt will be made to elucidate some of the "rules which generate and guide behavior."

In order to study the Bolivian peasants cultural change, peasantry will be seen as an "open system" (Harding 1970:46 – 47) in which, when its members are given an opportunity, they collectively are capable of being influenced by cultural traits found in the other substrata of Bolivian Society. Cultural change will be viewed as an "adaptive process" (ibid., 48) by which traits are collectively digested, accepted, and practiced by the peasantry.

To examine cultural change two methods of analysis are intended. First,

¹¹ Modification made of the 1950 figures to cover population 10 years of age and older, thus making it roughly comparable to the 1963 sample.

traits of campesinos at their rural aboriginal and ancestral place of birth and dwelling will be compared to traits of campesinos' daughters born and living their entire lives in an urban center (space dimension). Second, it is hoped that the cross-analysis of the young against the older generations (time dimension) will throw light on cultural change probably taking place in the younger generation.

Fertility of Peasantry in Process of Cultural Change

The preceding discussion on peasantry and cultural change can now be used to link these concepts to that of fertility so that the concern of this study can be stated.

In this thesis, peasantry is examined as the target population. Cultural change is viewed as the conditioning factor for peasantry's change in reproductive performance. Fertility is taken as the outcome. Of the "eleven intermediate variables" (Davis and Blake, 1956) that may influence fertility, the main concern of this study centers on marital disunion.

Fertility of developing countries with (1) a high proportion of peasantry, and (2) with the peasantry that is undergoing cultural change, as the Bolivian case may prove to be, is a matter of importance. It is important because the rates of population growth may be affected by the increase in fertility. Cultural change may increase total fertility (the how is discussed subsequently) and, therefore, aggravate the population problem which is generally agreed as already serious and which jeopardizes economic and social development of developing countries.

Acculturation or the change in the value matrix within the peasantry should eventually lead to the adoption of new rules governing behavior. If these new rules had to do with the formation of the family, then the proportion of women

who begin their sexual union as a legal marriage, or the proportion of women legalizing their sexual unions, would probably be higher than before the adoption of legal marriage as the norm socially sanctioned. Higher proportions of women legally married would imply longer time at risk for sexual intercourse under the assumption that, in contrast to informal unions which are brittle, the legal bond commits a man and a woman to a firm and lasting union, at least more so than the informal union. In marriage there exists less chance of breaking the union and the number of separations is less than in and between informal sexual unions. As a consequence, there is longer time at risk for sexual intercourse which leads to an increase in total fertility. Therefore, under the condition that informal sexual unions are more frequent within the non-acculturated than the acculturated peasantry, marital disunion will be higher in the former than in the latter. In other words, acculturation brings about fewer incidences of marital disunion and therefore, an increase in total fertility.

Cultural change, of course, may determine parallel, previous, or delayed adoption of new rules related to, for example, age at marriage, use of efficient and modern contraception, etc. In other words, the Davis and Blake (1956) eleven intervening variables should be expected to be influenced by cultural change. This study, however, concentrates its attention on marital disunion.

Chapter II

THE PROBLEM

Briefly stated, this study is concerned with the effect of marital disunion upon fertility of Aymara women in the process of cultural change. Now that some notions on culture have been reviewed and initial steps have been taken for studying peasantry's cultural change, some basic ideas will be examined on the intervening variables of marital disunion and on its relationship with the dependent variable of human fertility, or reproductive performance. Thereafter, the simple ideas discussed are used as instruments for the interpretation of the few empirical antecedents related to the problem. Finally in this chapter, the theoretical focus is set by way of advancing a few hypotheses.

Some Basic Ideas

It is obvious that, conceptually, marital disunion is intimately related to, and intrinsically dependent upon the meaning of "marital union". Defining marital union, however, is a complex task, since, in addition to formal marriage, other known types of unions do exist and, furthermore, may coexist within the societal stratum or even a substratum.

If marital union were looked upon as a state in which two persons of the opposite sex have agreed to perform the two main functions of reproduction and parenthood, then no restriction would have been placed either on the duration while in the state of marital union or on a ritual (legal, religious, custom) which may accompany the beginning of a union. So described, the marital union

includes marriage, the formal social institution, and also the informal sexual unions of the consensual and common-law types. It does exclude, however, premarital¹ and extramarital relations in which, even though reproduction may take place, the parenthood prerequisite for marital union is generally not only unfulfilled but severely obstructed by social stigma. For example, children from incestuous, adulterous, and even from premarital unions may not ever have a social father.

Although excluded from the notion described as marital union, premarital and extramarital relations of course may influence fertility. This effect, it may be argued, can be more profitably be studied from the viewpoint that premarital and extramarital relations may influence reproductive performance by conditioning the success or failure of the marital union rather than as direct influences upon fertility.

As described, furthermore, marital union should cover the so-called “forced” marriage (for example, when parents exercise pressure once pregnancy is known to have occurred in an adolescent) and unions “arranged” by other than the parties concerned. The assumption, in these two cases, is that, at one point in time before the actual execution of the union’s ritual, the partners have come to realize the purpose of the union. Knowledge of the two marital functions, reproduction and parenthood, would then enable and predispose either party to accept or reject the partnership, thus implying the parties’ agreement when the state of marital union is chosen.

1. Premarital in both circumstances, before and between marital unions.

Finally, the “visiting relationship”, so common in Jamaica ² but presumably uncommon outside the Caribbean area, would seem to be classifiable as a type of marital union.

Its characteristic of a “non-cohabiting sexual relation” (Stycos and Back, 1964:85), does not seem to interfere with fulfillment of the reproduction and parenthood functions. In fact, and put in the author’s words (*ibid.*, 85 – 86)

... the visiting relationship entails serious responsibilities for the male and in eight out of 10 such relationships, the female reports receiving economic support from her boyfriend.

It must be admitted that all parental male duties are not complied with in a visiting union. However, that also may be the case in other types of marital unions. The point is that a visiting relationship is not as casual as a premarital sexual relationship, and parenthood may be expected to be exercised in much greater degree in the visiting than in the premarital relationship. Hence, the former should be included as a marital union.

Once marital union has been circumscribed, marital disunion may be identified as a state following the termination of marital union.

A scheme to categorize the causes of marital disunion should be helpful. Two arbitrary types of broken heterosexual unions may be recognized, namely, voluntary and involuntary. This distinction, therefore, is based on the presence or absence of at least one of the partners’ active participation in the dissolution of the marital arrangement. The argument is that this primary classification

2. See J.M. Stycos and K. Back, The Control of Human Fertility in Jamaica, Cornell University Press, Ithaca, N.Y. 1964.

(voluntary –involuntary) may fruitfully enhance the traditional categorization of marital disunion into divorce, separation, and widowhood.

In the following diagram (Graph 1), under the main division of voluntary – involuntary, certain subtypes of marital disunion are submitted and compared to those extracted from the Davis' and Blake's Analytical Framework (1956:212) which, obviously, has served as a point of departure.

Graph 1. Voluntary-involuntary categorization of marital disunion

MARITAL DISUNION
(Broken Union)

Voluntary		Involuntary
DIVORCE (Divorce)		
SEPARATION (Separation)	Short Term: Less than 1 year (e.g. Military Service) Long Term: 1 year or more	
DESERTION (Desertion)		
Death of Husband	By: Suicide, Homicide by Wife	DEATH OF HUSBAND By: Disease, Accident, Homicide by other than Wife
Death of Wife	By: Suicide, Homicide by Husband	By: Disease, Accident, Homicide by other than Husband

Note. Categories in upper case letters were extracted from the Davis' and Blake's Analytical Framework (1956: 212)

Divorce, which is theoretically a simple subtype of marital disunion, is not free of complexities at the empirical level. In the abstract, divorce is understood as the legal termination of marital union begun as, or that at one point in time was, a legal marriage. However, at the empirical research level, when, for example a couple has been married both by civil law and Church law, and the partners may consider themselves divorced for all civil purposes, they may “declare” their state of marital disunion only in terms of religious separation.

Separation, as shown in Graph 1, has been subcategorized into long and short-term separation. Separation is taken as applicable to both formal and informal marital unions. Contrary to divorce, the distinguishing character of the separation subcategory is – at least for the purposes of this study – that the partners had not explicitly broken the marital union. The marital union may be resumed at any time.

The reasoning behind the sub classification made of separation into long and short term should be noted. Since the risk of conception is dependent on the frequency of sexual intercourse, and this, in turn, may be influenced by the length of the separation, it may prove worthwhile to classify separation at the outset. Furthermore and more important, it may be argued that time lost for sexual intercourse by short term separations – if not at the single couple’s level, cumulatively at a larger group’s level – may affect fertility in perhaps more significant degree than by long-term separations. The impact upon fertility by short-term separations may be particularly important where non-legal or informal marital unions are prevalent. Detection of the importance of the short-term separation at the outset may facilitate analysis of the causes of separation.

Desertion may be looked at as a definitive long-term separation. It is made a separate subcategory, as in the Davis' and Blake's Analytical Framework, because it is presumably an unalterable situation, at least in most cases.

Widowhood, as a type of marital dissolution determining fertility, undoubtedly can best be approached in terms of the "institutional position of the widow" (Davis and Blake, 1956:224). The greater the proportion of widows remarrying, or consensually re-mating, or the faster they remarry, the greater the chance for enhanced fertility.

Since in this study the interest is placed on the causes of the marital dissolution, the death of the wife, in addition to the death of the husband, seems a necessary inclusion as a cause that terminates a marital union. Furthermore, the voluntary – involuntary classification of marital disunion allows consideration of the four distinct subcategories (Graph 1) by which the marital union may be affected by death of either husband or wife.

It is beyond the modest scope of this study to argue the sociological importance of discriminating "voluntary" from "involuntary" widowhood – originating in the husband's death by suicide or homicide by the wife in contrast to the husband's death by disease, accident, or homicide by other than the female partner. The rarity of the event (voluntary widowhood) and the inherent difficulties in gathering reliable and meaningful information may have caused the apparent lack of interest and research on the subject. For voluntary widowhood's impact on marital dissolution to remain unknown is challenging. And this lack of knowledge may possibly justify the suggestion for discriminating voluntary from involuntary widowhood.

Death of the wife does seem to be an important single factor for examination within the overall study of marital dissolution. It would be relevant to fertility, however, only in the presence of a changing pattern of mortality. Declining mortality, particularly of maternal mortality at gestation, parturition, and puerperium, should lead eventually to an increasing proportion of women alive at the reproductive ages. Fertility, then, other things kept equal, may be assumed to be affected toward an increasing trend.

The consideration of a declining maternal mortality – particularly in developing nations, and within these nations among the peasantry³ – would suggest the sub categorization of involuntary death of the wife into: a. death of the wife by maternal causes; b. death of the wife by other than maternal causes, including accidents and homicide by other than the husband.

A word on research seems mandatory. Gathering information from surviving relatives, if any, is recognized as a great but not insurmountable task. Better coverage, both quantitatively and qualitatively, should be achieved by making the household – instead of the individual man or woman – as the survey's unit. By using the household as the survey's unit, questions can be asked from multiple sources such as surviving children, other relatives, or friends, in addition to the widow or widower.

3. It is interesting to note that the Bolivian government, as of September 1971, created the extension of health, maternity, and work disability insurance for the peasant ("campesino") population. Previous to this governmental action, Social Security benefits covered only workers in the cities and mining industries.
Source: El Diario Newspaper, La Paz, Bolivia, 18 September 1971.

Empirical Antecedents

The study of Bolivian fertility in particular and the Andean ⁴ fertility in general has been the object of unresolved controversy. ⁵

Bradshaw (1969), the last of a series of researchers ⁶ examining fertility in Peru on the basis of the 1940 census, would seem to have shown that the “actual fertility rates prevailing in highland, rural, predominantly Indian areas of Peru may well have been higher than those in coastal and eastern Spanish areas.”

However, as table 3 shows, higher mortality alone cannot “explain” 1940 differential fertility, still visible in 1961, between the 2 sectors of the Peruvian population, those being Spanish speaking and with a lower proportion of economically active population in agriculture on the one hand (Piura, La Libertad, and Lambayeque Departments), and native language speaking and with higher proportion of “peasantry” on the other hand (Puno, Cusco, and Ayacucho).

Before examining data in Table 3, however, a word on the pertinence of differential fertility in Peru to the object of this study is in order. First, the rural population of Ayacucho, Cusco, and Puno, historically, socially, economically,

-
4. Bolivia, Ecuador, and Peru, countries where peasantry constitutes a significant proportion of the population. See quote from Mortara (1963:3), chapter 1, page 7 of this thesis.
 5. Hawthorn (1970:69) describes the scholarly debate as a “fascinating exchange of data and arguments.”
 6. As will be seen later, J. M. Stycos’ (1963) findings on fertility patterns in Peru were extended to Bolivia and Ecuador by David Heer (1964), but the former’s hypotheses and implications were disputed by the latter. Heer and James (1966) seemed to provide new explanations, but Whitehead (1968), again, claimed that still different causes than previously thought by Stycos, Heer, and James would have been responsible for the differential fertility in question.

and demographically may be argued to be characteristically similar ⁷ to the Aymara sector of the Bolivian population of the Altiplano. That is, the two populations in question, those of Bolivia and Peru, may well fit into the definition of peasantry, the target population of this study. Second, since Bolivia lacks a recent population census, and since Heer's (1964) and James' (1966) analysis showed congruency of the Bolivian and Peruvian fertility differentials, a look at Peruvian demography 1961 should aid the study of Bolivian fertility. Third, since mortality patterns within the peasantry populations of Bolivia and Peru may be similar, as implied by some evidence supplied by Whitehead (1968:343), ⁸ the major argument of Bradshaw's paper (centered on mortality level prevalent in 1935 – 40) may be extended to or questioned for the Bolivian fertility differentials.

In table 3, comparisons are made of the Peruvian departments having a high proportion of their population in agricultural activities (Puno, 71%; Cusco, 61%; Ayacucho, 77%), and with a low proportion of Spanish-speaking population (1 or 2%), against the departments with relatively lower agricultural population (Piura, 56%; La Libertad, 57%; Lambayeque, 49%), and with a very high proportion of Spanish-speaking populations ⁹ (99%, 98%, and 93%, respectively in Piura, La Libertad, and Lambayeque).

-
7. See H. Osborne, Indians of the Andes, Aymaras and Quechuas, Harvard U. Press, Cambridge, Mass., 1952.
 8. "The conditions of the Indian inhabitants of Peru and Ecuador are probably not significantly different" with respect to higher infant mortality in Bolivia; L. Whitehead, "Altitude, Fertility and Mortality in Andean Countries", in Population Studies, 22, November 1968.
 9. As rightly pointed out by Fernando Bertoli, a colleague and PhD candidate at Cornell University, the Spanish-speaking (only) as an indicator for culture is a poor indicator, due to the fact that bilingual persons (Aymara – Spanish, Quechua – Spanish) are in that way completely excluded from the analysis. Since all previous writers have used this indicator, Bradshaw's figures (1969) are here borrowed.

Table 3. Some characteristics in the 1961 Peru Population Census. A comparison among departments differentiated by Spanish speaking proportions.

Characteristics	Piura	Puno	La Libertad	Cusco	Lambayeque	Ayacucho
Percent Spanish speaking (a)	99	1	98	2	93	1
Percent in Agriculture (b)	56	71	57	61	49	77
1961 Census: Tot. Popul. (c)	669	686	582	612	342	411
Child/woman Ratio (d): Urban	83	69	71	68	81	90
Rural	91	76	83	73	100	80
Sex Ratio (e): Urban 15-19	101	128	100	111	103	105
20-24	102	118	97	112	98	76
25-29	90	100	92	95	92	79
30-34	95	107	97	101	101	85
35-39	94	94	88	87	90	78
40-44	102	107	94	96	106	81
45-49	99	100	84	94	100	73
Rural 15-19	107	87	108	105	119	90
20-24	92	76	90	93	106	76
25-29	92	78	95	90	102	76
30-34	104	84	99	98	112	83
35-39	96	78	95	92	101	79
40-44	101	86	98	97	120	79
45-49	103	86	98	101	110	81
Male Deficit (f):						
Single	134	95	114	118	137	88
Married	95	93	96	98	97	92
Consensual Union	78	84	84	91	84	76
Separated	40	46	42	49	54	38
Divorced	65	46	76	63	90	78
Widowed	38	44	32	45	43	21
Percent of women by Civil Status (g):						
Single	35	30	38	31	35	27
Married	45	47	33	41	34	52
Consensual Union	12	11	21	17	25	5
Widowed	6	11	7	10	5	15
Other (h)	2	1	1	1	1	1
Annual Grwth. Rate (i): Urban	3.5	2.7	3.4	2.3	3.7	0.9
Rural	1.6	0.8	1.2	0.6	1.6	0.6
Percent 1961 Census error (j)	3.4	5.5	4.4	5.2	3.2	4.1

Note: See next page for sources and table notes.

Sources and notes for table 3.

- (a) Extracted from Bradshaw (1969:14). Rounded figures.
- (b) Percent in agriculture, forestry, hunting, and fishing, within the total economically active population 6 years old and over. Source: Table 11, p. 230 of Sexto Censo (op.cit.) in note (c).
- (c) Peru, Direccion Nacional de Estadistica y Censos, Sexto Censo Nacional de Poblacion. Resultados de Primera Prioridad, March, 1964: Table 4, pp. 30; 42; 62; 66; 82; 86.
- (d) Children 5-9 / Female population 20 – 54 years of age. Children per 100 women. Child / woman ratios relating children 0 – 4 years old to women 15 – 49 years old are, in all cases, smaller than those presented in table 3, probably due to under enumeration of children 0 – 4 years old. The exception is rural Cusco, where the two types of ratios were equal. Source: Sexto Censo (op.cit.), Table 6, pages 104; 106; 109; 110; 114; 115.
- (e) Sex ratios calculated relating males/females in the same age group: 15 – 19 males/15 – 19 females; etc. Males per 100 females. Relationships on different ages, e.g.: 20/24 males/15 – 19 females, are assumed not to alter general pattern shown in Table 3. Source: Sexto Censo (op.cit.), table 6, pages as in note (d).
- (f) Population 14 years of age and over. Except for persons declaring single status in the Department of Cusco, La Libertad, Lambayeque, and Piura, the sex ratios by Civil Status show a deficit of males in relation to 100 females. Source, Sexto Censo (op.cit.), table 7, pages 120; 122; 124; 126.
- (g) Female population 14 years old and over. Minimum legal age for marriage is: men, 16 years; women, 14 years of age. Source: Table 7, pages 120; 122; 124; 126.
- (h) Other category comprises: Separated, Divorced, and Unknown Civil Status. The inter-Departmental differences in these 3 categories are very small.
- (i) Geometric annual increase between 1940 and 1961, extracted from Peru, Censo Nacional de Poblacion, Volumen 1, Tomo 1, Lima, Peru, March, 1965, table 11, page 29. In table 3, rounded figures, and annual growth rate per 100 population are given.
- (j) Percent omission in 1961 Census as estimated by the Direccion Nacional de Estadistica y Censos. Source: Sexto Censo (op.cit.), table 1, page 1.

If the question was asked as to why the mostly peasant sector of the Peruvian population has grown at a slower rate ¹⁰ than the mostly “Spanish area”, the past, but not necessarily the present answers, might be the following:

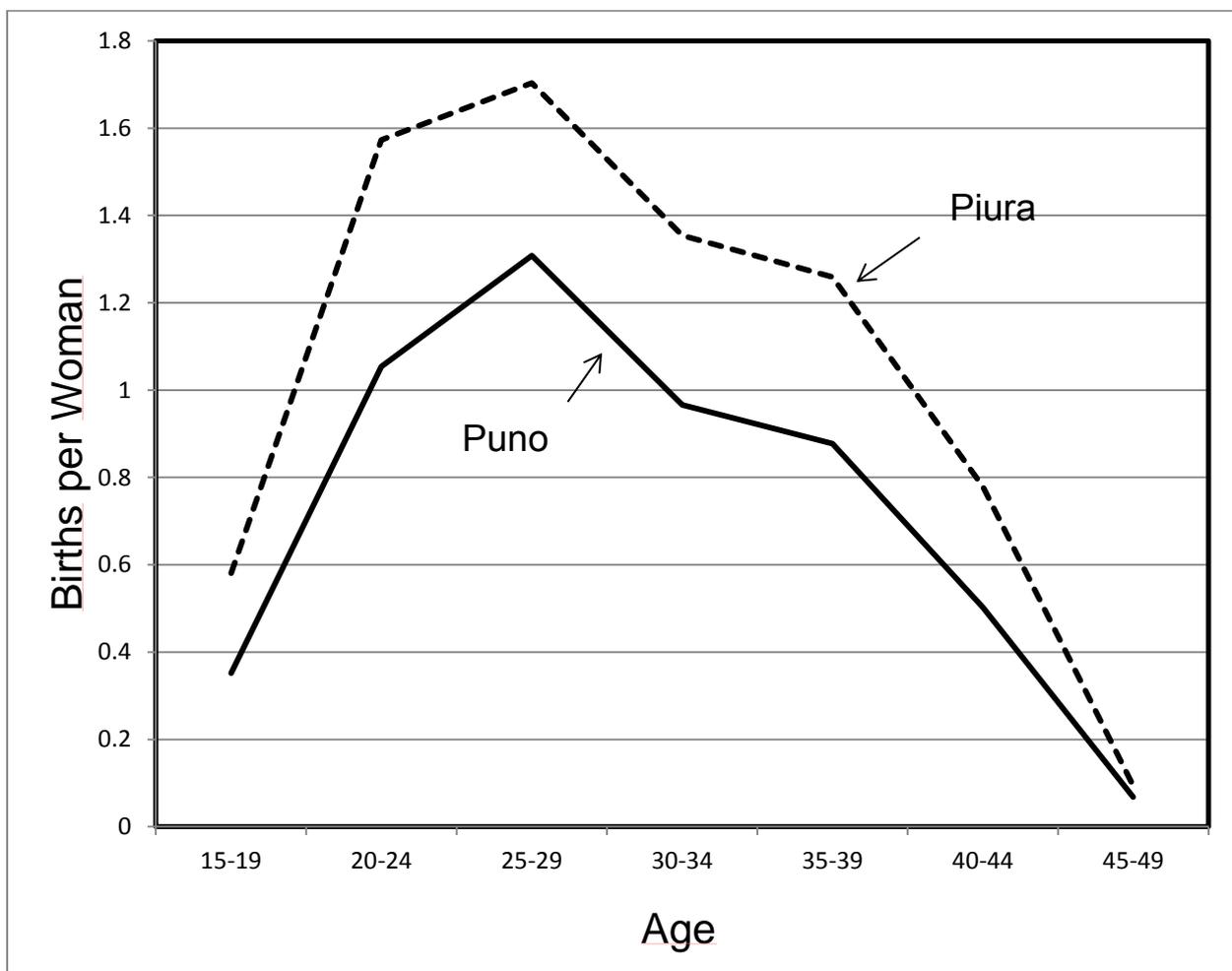
First, according to Bradshaw, perhaps high mortality incidence (between 1940 and 1961) particularly at infant and child ages should be held responsible for the Indian slower growth. The hypothesis – not entertained explicitly by Bradshaw – that peasant women not only tend to forget that children died but are strongly reluctant to speak about them, and more so to strangers, may be found plausible. Some credibility for this hypothesis possibly can be assigned if in 1961 the patterns shown by the age specific fertility rates ¹¹ prevalent in 1940 would be similar to those from the 1961 census of population. In other words, as it can be seen in graphs 2 and 3 – but not so strongly in graph 4 – the lower fertility at ages 15 to 39 years of the highland in comparison to the coastal areas of Peru could be interpreted (but not solely) as having origin in biased declarations of women about their dead children. If this hypothesis were true, Peruvian women may constitute a unique case since generally the assumption is that (U.N., Manual IV, 1967:31):

... *older* women tend to omit offspring who died especially many years earlier (italics added)

10. As can be seen in table 3, bottom part, the Indian areas, particularly rural Indian areas, show rates of 1940 – 61 growth consistently lower than the most Spanish areas.

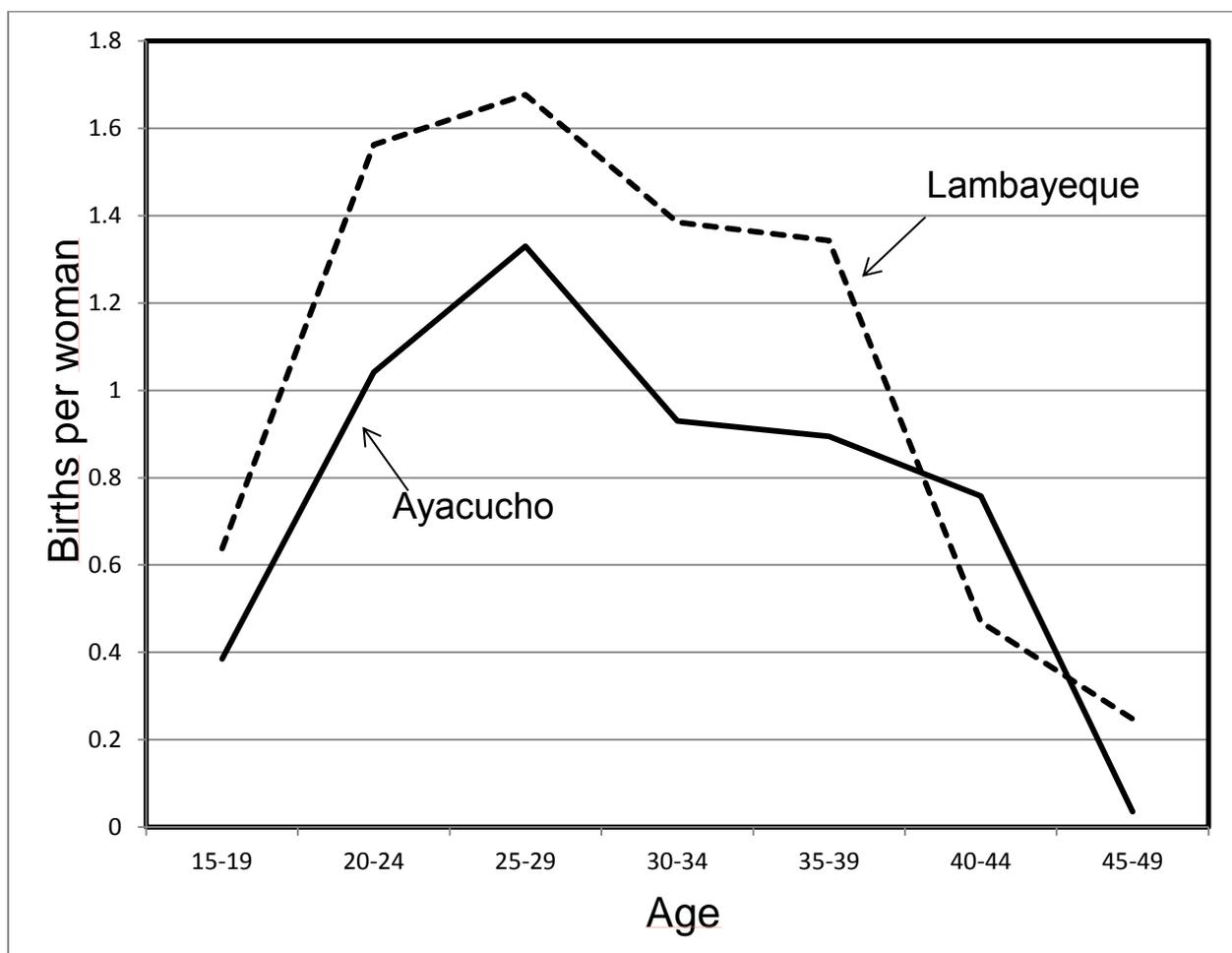
11. Borrowed from Bradshaw’s estimates in “Fertility Differences in Peru: A Reconsideration”, Population Studies, 23, 1969, Table 3, page 13. Time, space and scope of this study do not permit to estimate at this time the age specific fertility rates, if at all feasible, from the 1961 census of Peru.

Graph 2. Estimated Fertility Rates per Woman by five-year age intervals, Peru, 1940: Piura, Puno



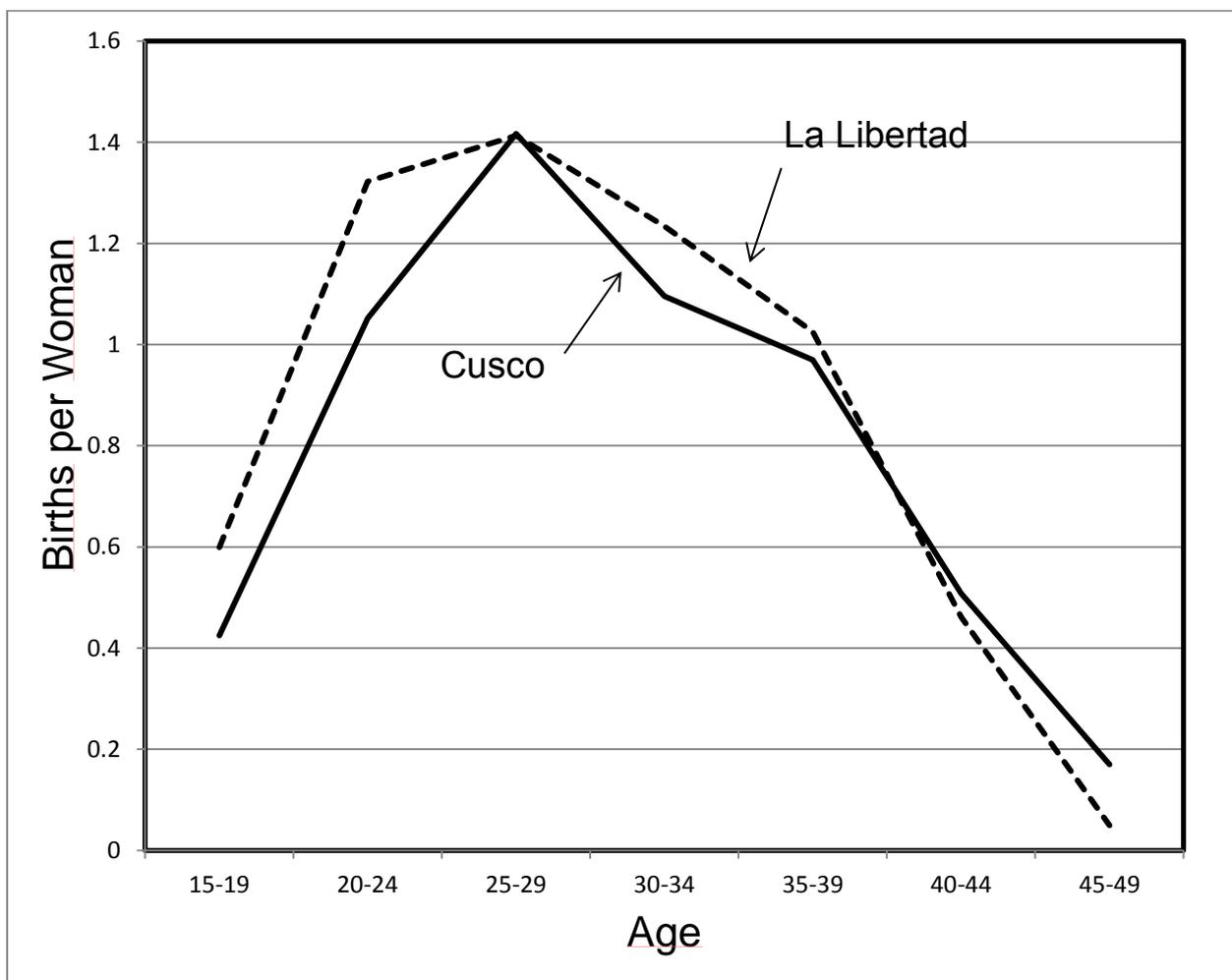
Source: Bradshaw, 1969, Table 3

Graph 3. Estimated Fertility Rates per Woman by five-year age intervals, Peru, 1940: Lambayeque, Ayacucho



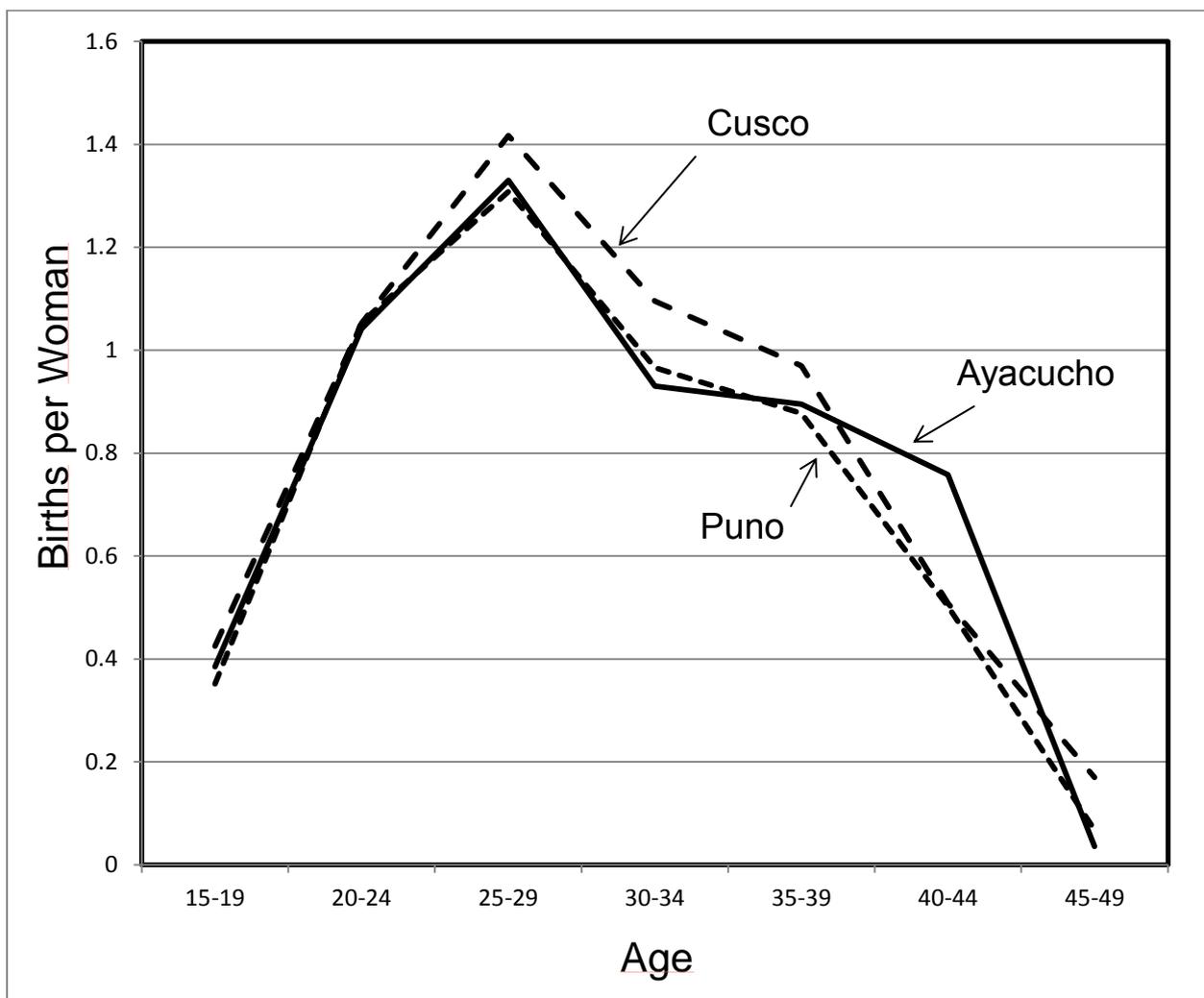
Source: Bradshaw, 1969, Table 3

Graph 4. Estimated Fertility Rates per Woman by five-year age intervals, Peru, 1940: Cusco, La Libertad



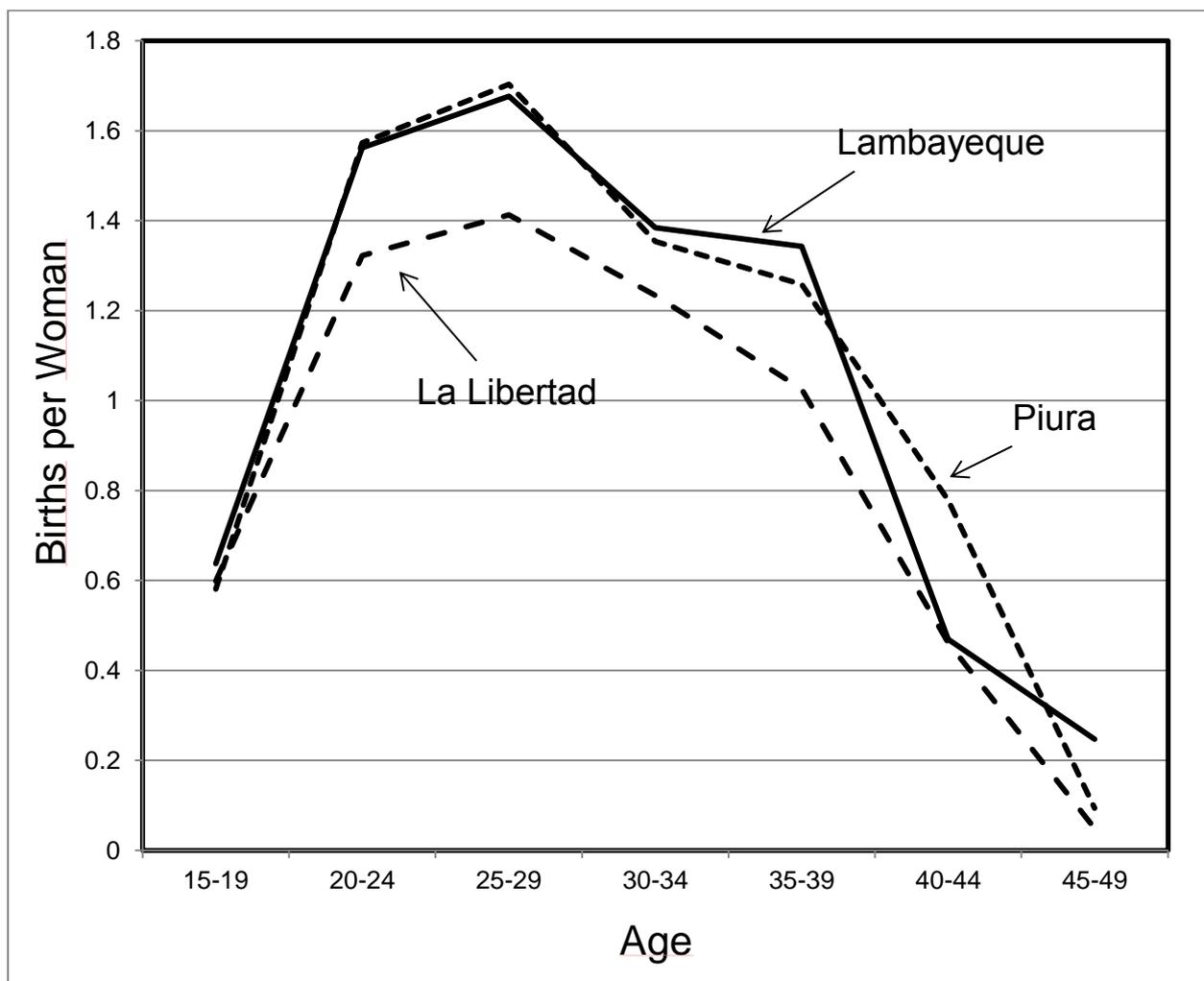
Source: Bradshaw, 1969, Table 3

Graph 5. Estimated Fertility Rates per Woman by five-year age intervals, Peru, 1940: "Indian"



Source: Bradshaw, 1969, Table 3

Graph 6. Estimated Fertility Rates per Woman by five-year age intervals, Peru, 1940: "Spanish"



Source: Bradshaw, 1969, Table 3

Furthermore, the apparent consistent fertility patterns at ages 15 – 39 years in Graphs 2 and 3 do not permit the assumption that “the proportion (not) reported as dead (children) rises with the age of woman” (ibid., U.N. 1967).

It should be stated here that a possible main limitation of the age specific fertility rates calculated by Bradshaw is that the method suggested by Coale and Demeny is useful only “when older women under-report the number of children they have borne, and younger women report parity accurately” (ibid., U.N., p. 33) (italics added). This does not seem to be the case in Peru if mortality is assumed to be the main factor for the apparent differential fertility and if the actual age-specific fertility rates were in 1940 as those estimated by Bradshaw and shown in graphs 2 and 3.

Second, James’ (1966) suggestion of neo-natal mortality being “less likely to be reported in the census” may perhaps fit into the shape portrayed by the age-specific fertility rates of Puno and Ayacucho calculated by Bradshaw. But the proof is lacking of an incidence of neo-natal mortality so high as to offset the difference, for example, between the Piura and Puno curves (Graph 2). Equally no known evidence is available to measure the approximate contribution of spontaneous abortion in highland Indian areas, incidence that may explain at least in part the differential shown in Graph 2. The point is that ascertaining the incidence of both neo-natal and spontaneous abortion is one thing, perhaps the first, and investigating the causes of that incidence is another. Altitude as determinant of differential fertility has already been discarded by Prof. Stycos ¹²

12. “There would appear to be little if any relation between altitude and fertility when ethnic composition is controlled” (Stycos 1968:227).

and severely questioned by Whitehead¹³ and Bradshaw¹⁴.

Third, Whitehead and Bradshaw seem to agree that the apparent differential fertility should be corrected to a more realistic picture by including the effect of mortality.

Whitehead seems to place main importance on infant mortality, while Bradshaw seems to extend the effect of child mortality. Whitehead's work is based on an analysis of the accuracy and degree of completeness of the census figures and on scattered evidence, mostly of speculative nature for example, from Bolivian officials. Bradshaw's methodologically sophisticated analysis a fortiori carries with it assumptions that may be subject to criticism, particularly when he himself points to the weakness inherent in his calculations (Bradshaw 1969:10):

Coale and Demeny warn that in instances where the projected value is substantially less than the census value for ages 45 to 49, the wisest course is not to attempt an estimate of current fertility by manipulation of the data on children ever born.

The assumption of nearly equality between the ratios¹⁵ TF/P3 and P3/P2, does not seem to hold in view of the persistence of estimated total fertility values in 20 out of 23 departments (and Peru as a whole) lower than the "average parity" reported at ages 45 – 49 years.

13. "Not all inhabitants living at high altitude suffer such (high) death rates – only the depressed rural population. The cause is therefore social rather than physiological (Whitehead 1968:346).

14. "We can reject James and Heer's analysis of fertility and altitude because they did not adequately demonstrate nor cite evidence that altitude alone actually adversely affects average fertility in a resident high altitude population" (Bradshaw 1969:9).

15. Where TF is the estimated total ("projected") fertility; P3 and P2 are the number of children reported ever born to women 25-29, and 20-24 years old, respectively.

As will be seen when widowhood proportions in 1961 census of Peru are considered ¹⁶, perhaps the weakest assumption for applying the method in question at the department level in Peru is (U.N. 1967:34):

... that widowhood, divorce, and other forms of dissolution of sexual unions do not have an unusual age incidence from age thirty to forty-five in (each) (of) the population(s) in question.

Finally, the estimated five-year “average” probabilities of dying (Bradshaw, Table 4, p. 14) seem, in close analysis, to leave much more uncertainty about their validity than anything else. For example, why so great a difference between 0.21893 and 0.17692 in the five-year average mortality levels of Lima and Callao, respectively, particularly if one considers that the May 1940 earthquake affected Callao to a greater extent, at least in terms of property damage, than Lima? ¹⁷ Equally puzzling would seem the difference in the values estimated for Piura (0.30974) and Tumbes (0.19134), 2 coastal departments similar to most Peruvians by several measures.

Overall, the Bradshaw work seems to leave more questions unanswered than it provides definite proof that understatement of fertility in highland areas should explain the 1940 apparent differentials. ¹⁸

True, comparison of urban – rural child/woman ratios (Table 3), as stated by Bradshaw (1969:17) shows urban fertility lower than rural fertility. ¹⁹ However,

16. In table 3, widowed women in the highland departments show consistently higher proportions than in the Spanish-speaking departments. Incidence by age, however, cannot be ascertained.

17. This writer, at the time of the 1940 earthquake, was studying in a Lima secondary school.

18. The above criticism has origin in the preliminary evidence supplied by the 1961 census of Peru.

19. Except in Ayacucho among the six departments shown in Table 3.

the most significant differences appear to be those that might “revive” the 1940 fertility controversy. Rural fertility in 1961 in Spanish-speaking areas is higher than in mostly “peasant” areas of highland Peru.

As shown by Marino (1970:159 – 172) a “persistent pattern of significant male shortages in the adult population of most British Caribbean areas” may have had considerable influence on the fertility of those populations.

A comparison of sex ratios by age (males per 100 females) between La Libertad and Cusco (Table 3) does not lead to any conclusion with respect to a possible influence on differential fertility at urban or rural levels. It is worth noting, that the fertility schedules in La Libertad and Cusco (Graph 4), drawn on Bradshaw’s estimates, were relatively similar to each other, though in 1940.

The most interesting comparisons would appear to be those where rural highland areas of Ayacucho and Puno show consistently a shortage of males at all ages (15 to 49 years), while the rural lowlands (Spanish-speaking) of Piura and Lambayeque show excess of males at all ages. At the urban level, however, no clear pattern seems to be present. While shortage of males in Ayacucho against surplus or lesser shortage in Lambayeque, the opposite seems to be true when comparing Puno against Piura: excess of males generally in Puno, and shortage of males generally in Piura. No wonder Heer’s findings (94:77 – 78) point out that “the sex ratio, taken by itself, explains approximately (only) 16% of the variance associated with fertility.”²⁰

20. Heer reports a 30% female labor participation and a 32% from Spanish-speaking as proportions of each variable explaining the variance associated with fertility.

In spite of this low level of association, the age-specific sex ratios just discussed would seem to lend support to the following statements made by Heer (ibid., 76):

Peru has a pattern of heavy seasonal migration from highland to coastal areas caused by the heavy demand for labor on the coastal plantations during harvest. ²¹

The significance of this “temporal male” migration upon fertility was, of course, already hypothesized by Heer (ibid.):

Thus, although Indian women in the Sierra are usually married, many of them may spend fairly long periods each year with their *husband absent* (italics added).

In summary, the highest child/woman differential at the intra-rural interdepartmental level occurs between Ayacucho – Lambayeque (80 against 100) and Puno – Piura (76 against 91), precisely where consistent excess of male exists (Piura and Lambayeque) in comparison to shortage of males in rural Puno and Ayacucho.

While it is difficult to link the previous findings on sex ratios and fertility with the sex ratios by civil status, it is interesting to note that surplus of single males in Piura (134) and Lambayeque (137) is contrasted with shortage of single males in Puno (95 males per 100 females) and Ayacucho (88). La Libertad and Cusco departments, it should be noted once again, form a world of their own.

21. The month difference in the census taken – June 1940 and July 1961 probably does not invalidate the truth of the statement for the 1961 case: “The 1940 census (was) taken on a de facto basis at the apex of the harvest” (Heer, ibid.).

The age selectivity of migration, when taken together with the two separate tabulations (sex ratios by age and sex ratios by civil status in Table 3), permits speculation that perhaps in rural Piura and Lambayeque excess single men at all ages really existed, if only by declared civil status. This, again only by speculation, could be linked with the “machismo” syndrome by which men away from home may be prone to pass as (and perhaps live actually as) if they were single.

An examination of the declared civil status of women (table 3) shows that while the proportion single (and also consensually – mated) may be somewhat larger in the Spanish than the “Indian” areas,²² the interdepartmental cultural differentials when mated women (those married plus those in consensual union) are compared may be said to be negligible. As stated previously, and with a direct bearing on the main object of this study, the widowhood differentials are most conspicuous. Persistently, “Indian” areas show greater, and perhaps significantly greater, proportions of widowed women than the Spanish areas: 6, 7, and 5 percent in Piura, La Libertad, and Lambayeque, respectively, as against 11 percent in Puno, 10 percent in Cusco, and 15 percent in Ayacucho.

In summary, the brief examination of the 1961 Peru census²³ evidence

22. The extremely large differential (25 as against 5 percent) in the Lambayeque – Ayacucho comparison of consensually mated women certainly is in favor of the observation by Bradshaw by which consensual “status means something to mestizos but not to Indians; ... Indians reported as married (may not have been really) legally married.”

23. Though highly critical of census data of Puno, Bradshaw (1969:17) believes that “the 1961 data on children ever born appeared to be superior to those for 1940, but whether they are reasonably correct for most departments is not yet known.”

leads us to make three points. First, assuming better overall quality of the 1961 census, the cultural differentials initially found by Prof. Stycos may still prevail in 1961; second, since by now the presence of the defects in this census data is well known, use of that information can only be made after a realistic estimate of the most probable values of, for example, the number of children ever born. Ascertaining the real levels of fertility and mortality by consulting all sources available, including birth and death registration, is a prerequisite sine qua non, valid conclusions could be made of the levels themselves and then of the differentials, if any.

Third, since no evidence has been presented against Prof. Stycos' original hypothesis, it should be worthwhile to test it by the "direct interviewing of the childbearing population", to use Hawthorn's words (1970:69). In other words, due to the fact that no proof has been given stating that Peruvian "Indians" do not begin their marital union later (on the average) than their connational people, mostly Spanish-speaking, and since no new evidence has been provided showing that marital unions within the "Indian" population are equally or more stable than among the Spanish Peruvians of the lowlands, the proper way to accept or reject the hypothesis is, as the controversy regarding Peruvian fertility seems to point out, to investigate at the field-survey level.

Bolivia provides some empirical evidence. The 1969 study of Bolivian women by Centro de Estudios de Poblacion (CEP) ²⁴ included direct interviewing of (a) 633 women in urban areas of the Department of La Paz – of which the

24. Centro de Estudios de Poblacion, DESEC, Condicionamientos Socio-culturales de la Fecundidad en Bolivia, La Paz, Bolivia, 1969.

great majority were in the city of La Paz (587 women); (b) 637 women in rural areas of the same department, and (c) 210 women in rural areas of the Department of Santa Cruz (CEP, page 42).

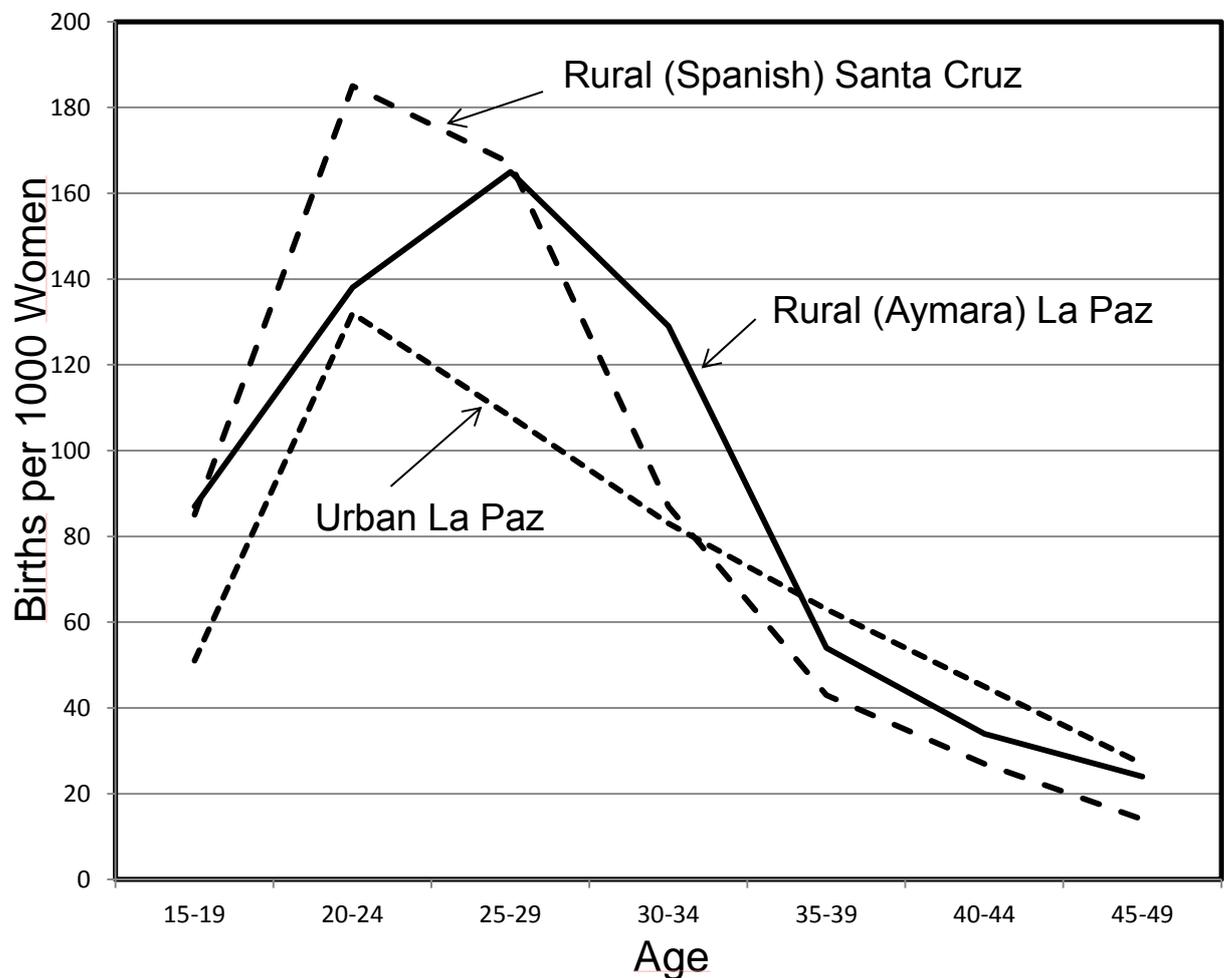
Although tabulations by ethnic origin are not available, some notion about the “Indian” composition of the population’s survey is given in a tabulation by “usual language spoken within the family” (CEP, page 76). In the urban area of La Paz some 18% of the women spoke the native language of Aymara, while in the rural area about 44% spoke Spanish. In the rural area of Santa Cruz about 98% of the women interviewed spoke Spanish (ibid., page 76). In consequence, although it is not possible to distinguish “Indian” from non-Indian fertility, the tabulations available can provide some limited answers as to the “Indian” fertility performance. The urban – rural differentials, if any, and the inter-rural comparison between La Paz and Santa Cruz departments should shed some light on the differences between the two populations.

In the following interpretation of the data, two limitations should be borne in mind. First, the available tabulations permit controlling for age only in a few cases: in general, the populations surveyed seem to be older than the populations at the 1950 census (ibid., 49 – 50; 53); and among the populations surveyed, the youngest is rural Santa Cruz, and in urban La Paz a heavy concentration is present in the 20 – 24 age bracket (about 17% as against 12% of rural La Paz) at the expense of the heavier representation of the age groups 25 to 34 years in rural La Paz (ibid.). The second limitation is that in the publication mentioned, only relative frequencies are given – percent distribution and arithmetic means – so that it is not possible to evaluate, even crudely, the

significance of each percent or mean in terms of the number (sample bias) to which such measures refer.

From graph 7, it is clear that rural women of La Paz Department have a delayed reproductive performance, in comparison to both rural women of Santa Cruz department and to urban women of La Paz. Although the “Indian” fertility

Graph 7. Estimated Age-Specific Birth Rates, Bolivia, 1968



Source: CEP, 1969

cannot be isolated for rural La Paz, the assumption that the Spanish – speaking population (44% of the rural) diminishes the delaying effect upon fertility would seem more plausible than the reverse. In other words, in view of the early fertility patterns shown by all-Spanish Santa Cruz and mostly Spanish (81%) urban La Paz, one would be inclined to think that if rural La Paz were an all “Indian” population, then the delay in reproductive performance would probably be greater than lesser.

Unless one assumes under-reporting²⁵ of fetal mortality by rural La Paz women, James’ spontaneous abortion hypothesis and Heer’s voluntary abortion hypothesis may be rejected, at least as an explanation for fertility at age 20 – 24 years among Aymara rural women whose fertility in graph 7 is shown to be lower than that of the Spanish rural Santa Cruz. The rejection of both hypotheses would be supported by the following data: among all pregnancies, while women in urban La Paz reported 0.7% stillbirths, and 8.4% abortions,²⁶ the corresponding proportions for rural La Paz were 0.9 % and 3.5%, respectively; and those of rural Santa Cruz were 1.9% and 5.2% respectively (CEP, page 82). In other words, fetal mortality reported in urban La Paz (about 11%, including no response) was larger than in rural Santa Cruz (about 7%), and both were larger than in rural La Paz (about 5.5%, including no response). Thus, some evidence, though possibly

25. Admittedly, a possible assumption. Plausibility may be found particularly by those who believe in “the impenetrable and cloistered personality of the Indian” (A free translation from M.C.V. Jaimes Freyre, Costumbres y Curiosidades de los Aymaras, La Paz, 1964, page 5). Available tabulations not permit further investigation on this matter.

26. Probably including both types, spontaneous and voluntary abortions, but presumably under-reporting in greater extent the latter. No response amounted to 2% of all the pregnancies reported in urban La Paz; to 1.2% in rural La Paz, and to none in rural Santa Cruz.

brittle, is provided by the Bolivian survey that the delayed reproductive performance of the “Indian” population perhaps may not be ascribed to fetal mortality.

A second main factor, among those that may be responsible for a “late peak” in reproductive performance, deals with widowhood, in terms of its incidence, and in terms of the rules governing remarriage of widowed women. While only some ethnographic evidence is available suggesting for example that “a widow with children has little difficulty in marrying again” (Osborne 1952:208), the incidence of widowhood does not seem to account for the early–late peak fertility differential. It is reported that, among all women interviewed, about 3% in urban La Paz, about 2.5% in rural La Paz, and less than 1% in rural Santa Cruz where widowed (CEP, page 54). The small number of sample cases involved (19, 16, and 1, respectively in urban La Paz, rural La Paz, and rural Santa Cruz), perhaps would not be a serious obstacle against the inference that at least at the early ages, between 15 and 30 years, widowhood is not responsible for a late peak fertility among rural women in the Department of La Paz.

A third factor, knowledge or use of contraception, does not seem to explain the Aymara delayed fertility either. Although at first examination it may appear that contraception seems to have at least some influence, on grounds of effectiveness of use, however, the first impression probably can be changed. Admittedly, the proportion of all women declaring knowledge of contraception in rural La Paz (about 38%)²⁷ should be considered large enough to cause delayed

27. CEP, page 114: the proportions reporting knowledge of contraception in urban La Paz and rural Santa Cruz were, respectively, 63 and 71% in round figures.

fertility, though under two conditions; (a) most of these women were 30 years of age or younger, and (b) these relatively young women use effective methods of contraception. Because information on use of contraception was gathered only from women in marital union (married and in consensual union, CEP, page 117), the extent of use of contraception by single women, will remain unknown.

However it can be seen in table 4 that a comparatively lower proportion of single rural La Paz women (40%) declared knowing one or more methods of contraception and that none at age 15 – 19 years, and relatively smaller proportions (8.2% and 4.0%) of rural La Paz women in marital union declared using contraception. Furthermore what refers to effective methods used (e.g. the pill), the evidence apparently shows that rural La Paz women rank low also in

Table 4. Knowledge and use of contraception, Bolivia, 1968. (in percent)

	Urban La Paz	Rural La Paz	Rural Santa Cruz
KNOWLEDGE			
All women	63.3	37.7	71.3
Single women	60.0	39.6	63.2
USE			
All women	23.0	5.7	25.0
Age 15-19	13.3	0.0	6.7
20-24	16.4	8.2	25.8
25-29	19.6	4.0	15.0
METHODS			
Douche	3.3	0.4	1.7
Rhythm	6.7	1.8	4.1
Condom	1.9	0.2	0.6
Withdrawal	1.9	0.6	2.1
Pill	3.6	0.8	4.7
Other	0.7	0.2	0.0

Note. Information on USE and METHODS refers to women married and in consensual union only. Source: CEP, Tables 2.62; 2.64; 2.66; 2.67; and 2.69

comparison to women in urban La Paz and rural Santa Cruz.²⁸

In summary, none of the 3 main factors reviewed (fetal mortality, widowhood, contraception) would seem to account, separately or even perhaps jointly, for the delayed fertility performance of rural La Paz women. A plausible conclusion would seem to be, therefore, that a relatively older age of marital union to a great extent, if not entirely, should be held responsible for this delayed reproductive performance.

In spite of the fact that the CEP's publication provide several tables dealing with age-related to fertility, because of the form of presentation (percentages) and because the number of cases involved in the relative distributions is not given, it is difficult to sense the actual effect of age on fertility. This difficulty arises, as stated previously, because of sample under-representation of certain age groups if compared with the percentage distribution of females in the 1950 census. For example, the age group 15 – 19 years is about 5 percentage points too low in rural La Paz and about 2 percentage points too low in rural Santa Cruz. And while about 6 percentage points too low in rural La Paz, the age group 20 – 24 years is about 2 percentage points too high in rural Santa Cruz. If attempted, a standardization would be cumbersome and force many assumptions about the

28. It may be argued that the "Indian" women defined as those speaking native languages or 56% of rural La Paz – have knowledge of contraception and use it in lesser extent than those Spanish-speaking (44%) of rural La Paz. Separate distributions, however, are not available to investigate this point.

actual age distributions since only proportions are supplied in almost all of CEP's tabulations.

Bearing in mind this sample under-representation within the 2 crucial age-groups of 15–19 years and 20–24 years, the evidence provided is the following:

First, in spite of the fact that the overall mean age at consensual union in marriage is given as 20.9 years for both women of rural La Paz and women of rural Santa Cruz (CEP, page 97),²⁹ the cumulative percentage distribution³⁰ by age at marriage indicates that up to age 23 women of rural Santa Cruz (Spanish-speaking) marry earlier than women of rural La Paz (where 44% are Spanish speaking and 56% are native language speaking):

Table 5. Cumulative percent³¹ at age at marriage, Bolivia, 1968.

Age at Marriage	Urban La Paz	Rural La Paz	Rural Santa Cruz	
			%	Excess ³¹
18 and less	35.4	44.0	53.0	9.0
19	46.4	56.6	63.4	6.8
20	59.3	63.9	70.7	6.8
21	66.3	70.0	75.6	5.6
22	72.6	74.3	78.0	3.7
23	76.4	80.4	81.7	1.3
24	81.7	84.3	84.1	
26-29	92.0	94.6	92.7	

Source: CEP 1969: 61.

29. Older age (21.2 years) is reported for women in urban La Paz.

30. Since in the CEP's text (p. 60) these cumulative percentages are referred to as for "non-single" (no solteras), the assumption is that the figures refer to women in consensual union, separated, and widowed.

31. Excess (cumulative) percent at each age in respect to women marrying in rural La Paz.

It is clear from table 5 that the initial excess of women marrying earlier in rural Santa Cruz than in rural La Paz, tends to decrease with advancing age, from age 18 – 23 years; and at age 26 – 29 years there is a larger proportion married (or in a consensual union, 94.6%) in rural La Paz than in rural Santa Cruz (92.7%). Second, the proposition that women of rural La Paz married or engaged in a consensual union later than women of rural Santa Cruz seems to be confirmed by the proportions of women who declared single status.

Table 6. Percent declaring single status, and sample bias³² by age, Bolivia, 1968.

Age group	Urban La Paz		Rural La Paz		Rural Santa Cruz	
	Sample bias	%	Sample bias	%	Sample bias	%
15-19	-3.8	83.7	-4.8	73.4	-1.7	59.0
20-24	-5.3	37.1	-6.5	15.6	+2.0	20.4
25-29	-0.3	10.1	+4.1	4.4	+4.7	2.3

From table 6 it is apparent that from all women (100%) age 15 – 19 years, a large proportion, or 73.4% declared single status in rural La Paz, as compared to a relatively low percent (59.0) in rural Santa Cruz. Since there is a sample under-representation in this age group (15 – 19 years) of about 3 percentage points larger in rural La Paz than in rural Santa Cruz, if only at the speculative level, the effect of correcting this bias would probably be in the direction of lowering the proportion of single women in rural La Paz ³². The question is to what extent? Perhaps the proportion would not be lowered so much as to offset the difference between 73 and 59%. However, for an effect on fertility

32. Sample bias is called here the under-representation (-) or over-representation, in percentage points, of women in the sample with respect to the percentage age distribution in the 1950 Census.

performance, this differential by single status is not crucial at age 15 – 19 years as it should be at age 20 – 24 years.

In graph 7, raising the ordinate at the quinquennial fertility rate (age group 20 – 24 years) of rural women of La Paz would change the picture, if not completely, certainly to a great extent. Or possibly the same effect could be achieved by lowering the ordinate (fertility) at the mid–point of age group 20 – 24 years of rural Santa Cruz.

Admittedly, it is a difficult and risky matter to speculate what the effect on fertility would be if correction could be made for the under–representation of rural women of La Paz at age 20 – 24 years, and the over–representation of rural women of Santa Cruz at the same age.

Since standardization by age and civil status is not possible at this time ³³, an indication of what the effect on fertility by standardization by age – but not by civil status – might be is given by standardizing age-specific fertility rates. Using the 1950 age distribution (15 – 19; ... 45 – 49) ³⁴ of females as a standard population, the age-specific (quinquennial) rates of fertility in urban and rural La Paz, and in rural Santa Cruz were standardized by age. The following results were obtained:

Table 7. Crude and age-standardized total fertility, Bolivia, 1968.

Areas	Total Fertility	
	Crude	Standardized by age
Urban La Paz	5.14	4.02
Rural La Paz	6.31	5.09
Rural Santa Cruz	6.14	5.13

33. Neither the Bolivian census of 1950 nor the CEP publication provide suitable information for this purpose. Supplementary tabulations possibly made at CEP, La Paz, Bolivia, are not available at this time.

34. Direccion General de Estadistica y Censos, 1955, page 57.

It is clear that the effect of the standardization by age lowers total fertility. The reason for this is also clear for the 2 areas of La Paz but apparently not so for rural Santa Cruz. As stated before, the samples in the urban and rural areas of La Paz represent populations older than in the 1950's census but younger in the case of rural Santa Cruz, the mean age being ³⁵:

Areas	Sample	1950
Urban La Paz	30.8	29.0
Rural La Paz	30.9	29.7
Rural Santa Cruz	28.4	29.3

While in the case of the two areas of La Paz a lower fertility may be expected due to the standardization by a younger standard population, would a larger total fertility be expected by standardizing with an older population for rural Santa Cruz?

The apparent contradiction seems resolved by the following line of reasoning: since in effect women in La Paz, both urban and rural, marry later in life, the standardization by a younger population must lower total fertility. And, since in effect women of rural Santa Cruz marry early in life, standardization by an older population must also lower fertility.

The standardization, therefore, leads to the belief, supported now by more reliable indicators, that Spanish rural women of Santa Cruz probably are more fertile than rural "Indian" women of La Paz, but only early in their sexual life. The risk at intercourse, due to an early marriage, is greater for Spanish rural women of Santa Cruz up to a certain age (see graph 7), at which time other factors intervene – perhaps contraception (see table 4).

35. Source: CEP, page 53.

As for rural “Indian” women of La Paz, the situation is almost reversed. They start marriage (or consensual union) probably later and the risk at intercourse would not seem affected by contraception (see table 4 and graph 7), at least not as much as for Spanish rural Santa Cruz.³⁶

There are reasons to believe that “Indian” women of rural La Paz actually delay entering into a sexual union, so the immediate question is why.

Unfortunately, the CEP publication does not provide information suitable to test the Blake’s hypothesis³⁷, for example, whereby an arranged marriage would take place at an earlier rather than at a later age as compared to a marriage by free choice.

Information is not available either to investigate the influence of nuclear as against joint family systems prevailing in rural Bolivia. Although some economic indicators, such as monthly income, have been gathered for the CEP study, the usefulness of relating resources to age at marriage (Coale 1967)³⁸ seems very limited in the case of Bolivia in view of two facts: (a) information on income collected from illiterate and distrustful respondents may be of little value; and (b) information on income at a point in time cannot be fruitfully related to an event (marriage) assumed to vary dynamically over a more or less long period of time.

36. Incidentally, this steepness of the fertility curve for urban La Paz, beginning early at age 20 – 24 years may suggest an otherwise unsuspected family limitation being in effect (see graph 7).

37. J. Blake, “Parental Control, Delayed Marriage and Population Policy”, United Nations Population Conference 1965, II, New York, 1967.

38. A.J. Coale, “Factors associated with the development of low fertility: an historic summary”, United Nations Population Conference 1965, II, New York, 1967.

Therefore, as Prof. Stycos³⁹ points out, “trial marriage” as a factor in delaying sexual union among the Aymara people is worth consideration. In addition to Prof. Stycos’ report⁴⁰ among Price’s (1961) findings in the “Indian” community of Vicos:

Since the average duration of their trial marriage (watanaki) was reported to be fifteen months, we deduce that cohabiting relations begin between the ages of 22 and 23 for the female. (Emphasis added)

The following ethnographic evidence is considered supporting argumentation to the view that, because trial marriage has a “built – in” condition similar to an easy divorce for ending the marital union, Aymara “Indian” women start consensual or married life – declared as such – after a trial with one or perhaps with more than one man.

For example, Bouroncle Carreon (1964: 236) states:

The union is brought about in two stages: at first the lovers begin their conjugal life, but by simple and mutual consent; this is considered as a trial marriage or servinacuy. Approximately two years later they proceed to define their situation; they can separate and do it with mutual respect and harmony; she takes the children and they divide their goods justly. The women, after this trial, may again join in servinacuy or marriage; her first experience is not looked upon as bad and the children may even be an advantage.

39. J.M. Stycos, “Culture and Differential Fertility” in his book *Human Fertility in Latin America*, Cornell University Press, Ithaca, New York, 1968, page 229.

40. This point is purposely emphasized since Bradshaw (1969:7 – 8) erroneously, at least in part, states: “Neither Stycos nor Heer appear to have been aware of the prevailing pattern of trial marriage in the Andes, nor of the large proportion of trial marriages which culminate in permanent marital unions.”

The following quotation, from a footnote in Bandelier's book ⁴¹ although long and written in 1910, is interesting for several reasons. It shows that this type of family organization is ancient and that it was recognized by the first Spanish settlers of High (Bolivia) and Low (Peru) Peruvian lands. It also shows the attempts by the Roman Catholic Church to curtail, apparently with no success, the trial marriage practice. Finally, it shows that at least some men, certainly in the past, if not today, would rather have had as a wife a "tried" woman than one who did not have previous experience:

Today there exists among the Aymara the custom of what might be named a "trial year" before marriage. That this is an ancient habit is proven by it being mentioned anterior to its prohibition by Spanish decrees. Pedro Pizarro, who wrote about 1570, asserts that, previous to marriage, indiscriminate intercourse was permitted with the girls (*Relacion*, pages 347 and 379). The decree promulgated by Toledo is conclusive (*Ordenanzas del Peru*, fol. 128, et seq.): "Iten, por quanto ay costumbre e entre los Indios casi generalment, no casare sin primero averse conocido, tratado, o conversado algun tiempo, y hecho vida maridable entre si, como si verdaderamente lo fuesen, y les parece, que si el marido no conoce primero a la mujer, y por el contrario, que después de casados no pueden tener pas, contento y amistad entresi." It might be that this trial year is preceded by some provisional ceremony, but the marriage after primitive custom takes place at the expiration of twelve months. That the trial here is what I have called it, remains proven by the fact that, at its close, the parties may yet separate and the fact of temporary union is not binding upon either party. If they continue however, to live together as man and wife, without having their primitive and the church ceremonials perform, they are looked upon as transgressors. The *Constituciones Synodales del Arzobispado de los Reyes, en el Peru, 1613, reprint of 1722, page 79, Lib. III, Cap. Vi, fol 79, ordain*: "Porque el Demonio ha introducido entre los Yndios, q quando tratan de casarse con alguna India se amanceban primero con ella, viviendo en ofensa,...; Mandamos: que los Curas, muy de ordinario en sus sermones, les exorten y amonesten ser abuso y grave pecadolo que hacen y que averiguen quienes son culpados en ello, y la tal averiguación la remitan al Uicario para que los castigue." Arriaga: *Extirpacion de la Ydolatria, etc.*, p. 34: "Otro abuso es muy común entre todos los Yndios oy en dia, que antes de casarse, se an de conocer primero y juntarse algunas vezes, y assi es caso muy raro, al casarse,

41. A.F Bandelier, *The Islands of Titicaca and Koati*, The Hispanic Society of America, New York, 1910, page 147.

sino es, primero, Tincunacuspa, como ellos dizen, y estar tan assentados en este engaño, que pidiéndome en vn pueblo, por donde passava, vn Yndio, que le casase cun vna Yndia con quien estaba concertado de casarse, vn hermano de ella lo contradecía grandemente, y no dava otra causa, sino que nunca se auian conocido, ni juntadose, y de otro Yndia se yo que aviendose casado no podía ver a su mujer, y le dava mala vida, por que dixo que era de mala condición, pues nadie le avia querido ni conocido antes que se casase.”

And finally writing in 1964, James Freyre ⁴² has to say:

The lover-to-be starts throwing small stones to the girl ... absconds himself so as not to be seen by adults ... if she wanted him, she will let him know by piercing in the ground, time at which he has come close to her and is able to take her hat and run away with it ... she is supposed to follow him after her hat ... this is the beginning of their life as lovers and stay in this kind of sexual union, in general, for a period of a month during which the couple plans their marriage including the wedding “fiesta:” but if, for any reason, they do not agree to get married, they separate; for a woman to have a child is not an obstacle to get married to another man.

Theory and Focus

The intention of this section is to integrate the pieces discussed so far: peasantry, cultural change, and fertility. An abstract model is proposed at the end as a framework within which testing of some hypotheses – detailed in the next section – will be made.

Although at the international level of analysis, the following views of the United Nations ⁴³ show the importance of studying the interrelationships among the peasantry, cultural change, and fertility:

Ethnic composition and cultural heritage of the people need to be considered in studying causes of the differing fertility levels among countries in this (Middle and South America) region. For example, if it is true, as the estimates indicate, that fertility is much higher in Guatemala

42. A free translation of an excerpt from her book in Spanish (1964:59).

43. United Nations, Population Bulletin, No. 7 – 1963, Chapter V, “Levels and Trends of Fertility in Middle and South America”, p. 72, New York, 1965.

than in Bolivia, Ecuador or Peru, the difference may well be explained wholly or partly in terms of traditional cultural traits of the aboriginal peoples who constitute large majorities of the inhabitants of these countries (emphasis added).

The Bolivian “peasant”⁴⁴, elsewhere called “Indian” or “aboriginal”, has been described as from ultraconservative to revolutionary. For example, Osborne (1952:210) writing in 1952, the year of the Bolivian revolution, has to say:

The key to the Indian character is his traditionalism, a form of self–preservation which causes him to reject and repudiate everything alien to his traditional way of life ... The Indian has not more tendency now than he had before the coming of the Incas to accumulate material or monetary wealth, which means nothing to him.

More detailed is Osborne viewpoint when he writes (pages 32 – 33):

The Indians are considered conservative and incapable of improvement. They have been quite remarkably tenacious of such elements of their ancient culture as have been allowed to survive and have no desire to change their traditional way of life for the “better” civilization of the whites. Against all attempts to break up what is left of their way of life, they oppose a passive but stubborn resistance and are not tempted by the allurements of prosperity or comfort. Inherently conservative they are not, as is shown by their power to adapt what is suitable to their inherited culture, to amalgamate the Christian religion of their conquerors with their own, to make their own innovations of dress, music and so on ... And the Quechua and Aymara remain that historic anomaly, a people unconverted to the superior merits of the “economic man” and the “industrial state”.

Osborne again, but now after 2 years of the Bolivian revolutionary process and after one year of the Bolivian land reform, does not seem to have changed his original viewpoint, in spite of ending his 1952 book by saying that the peasants’ “economic status could be raised at little cost by increasing their lands from

44. The term peasant is preferred not only because this study deals with peasantry as defined for example, by Keesing and Keesing (1971), but because in Bolivia, after the 1952 Revolution, the official term has become “campesino” so as to avoid the apparent racial inferiority (pre – revolutionary) connotation of the term “Indian”. Nevertheless, by governmental decree, a holiday commemorating the “Day of the Indian” is still enforced.

unused lands of Bolivia and Peru” (1952:236). His 1954, post – revolutionary⁴⁵ view (1954:95 – 96) reads as follows:

It is fashionable to regard the Indian in Bolivia as backward, stupid, and depraved with coca and alcoholism, inherently incapable of education and advancement, incurably wedded to his outmoded traditional ways of life and an economic deadweight in the life of the country. Such a view is not entirely without excuse. The majority of the Indians are still living entirely outside the monetary economy on a self-sufficing agricultural basis. They have been accustomed for generations to an extremely low standard of material living and cannot easily be induced to produce more than is necessary to satisfy their own basic requirements ... They have little or no ambition to better the basic pattern of their existence or to share in the amenities of modern urban civilization ... They are fanatically traditional and highly resistant to acculturation – which in the past has always meant for them exploitation. Any attempt therefore to integrate the Indian population into the economic life of the community must reckon with obstinate resistance from the Indian himself.

While Osborne’s “purpose” was “to trace history and ecology of ... the Aymaras and Quechuas, so far as can be known or conjectured by the scanty evidences which survive” (1952: xiii), Patch’s (1961) views are expressed from direct examination, including interview survey. As most investigators do, however, Patch studies the peasants at their community level and compares his findings to those of the mestizo sector of the population.

In opposition to Osborne’s views, Patch finds change but characterizes it as an “amalgamation” of bi-cultural traits rather than an exclusively total and definitive adoption of mestizo culture. He also finds change taking place at the community rather than at the peasant’s level. In Patch’s words (1961: 143-149):

The Indians of the Andes ... cannot be accurately classed simply as “conservative” or “progressive”, or assigned along a continuous spectrum between folkways and urban ways.

45. In fairness to Osborne, whose contribution to the understanding of the Bolivian Indian is invaluable, it must be stated that his book Bolivia, A Land Divided is said to have been already “in press” at the time (August 2, 1953) of the Bolivian land reform (1954:134).

... In the Bolivian villages the individual villagers do not simply borrow one mestizo characteristic after another, in a continuous movement from Indian to mestizo status. On the contrary, in the Bolivian communities the adoption of mestizo trait does not usually displace or destroy a corresponding Indian trait. The campesinos continue to exhibit both Indian and mestizo traits, treating each as an alternative rather than a mutually exclusive choice.

In the campesinos communities surveyed, certain mestizo characteristics, of course, become norms of the village as a whole, and to that extent older, Indian traits have been displaced.

In Bolivia, the process is one of gradual amalgamation ... the process is a communal rather than an individualistic one, and it is based upon complementary rather than an antagonistic relation between the traits of the two subcultures (Indian and mestizo). (Emphasis added)

A representative of a third point of view is Zondag (1966) who seems to complement rather than oppose Patch's cultural analysis of the peasant, but who (Zondag) sees the "Indian", in contrast to Osborne's view, as having been considerably influenced by the revolutionary process. From the economic and political perspectives, Zondag affirms that the "Indians" of the Andean mountain range:

No longer content to live in a state of semi-slavery, they are prepared to resort to violence to obtain a part of the land which they have worked too long for others. (1966:6).

The old time subservience, stooped posture and the whining voice of supplication are no longer characteristic of the Indian. Gradually he is beginning to show an interest in the education of his children and is becoming more interested in the outside world. (p. 41).

In some areas, the peasant has become increasingly interested in the use of agricultural credit and has already built up a reputation as a good credit risk. As a result, the Indians are now losing their old-age servility and taking more interest in their work and their property. (pp. 147 – 148).

On many occasions Indian peasants have loyally supported the MNR (political party) both at the election box and in the armed combat with opposite elements. The Indian is now beginning to grow in stature ... (p. 244).

Why two contemporary writers should disagree in their assessment of the peasant, one (Osborne) seeing him as "conservative and incapable of improvement, and unconverted to the superior merits of the economic man", and

the other (Zondag) seeing him as “interested in the education of his children ... in work and ... property”, is not clear. Is there any reason to believe that change had really taken place, at least within the political and economic realms? If so, would change in the economic and political domains necessarily imply also cultural change?

Politicizing of the peasant by the MNR party and induced conversion from subsistence agriculture toward a more market-oriented system, most will agree, requires change to take place or be followed by change within the value system. As Barraclough and Domike (1969:95) put it:

Changes in values and changes in social structure (e.g. Bolivian land reform) occur together and are mutually supporting; it is perhaps fruitless to speculate which, if either, is the primary cause of social change.

In the end, then, the Osborne-Zondag opposite views of the post-revolutionary peasant possibly indicate a difference of thought within both the socio-cultural and economic domains.

Because Patch and Zondag seem to support each other's point of view on the peasants cultural and economic change, the inclination perhaps will be to accept Patch's assessment as the most moderate of the three, keep “in reserve” Zondag's view as perhaps too optimistic, and finally, at least put in doubt Osborne's view if only because of his negativism.

Once Patch's point of view – cultural change has been taking place if only at the communal level – is accepted, the method used to arrive at this conclusion is crucial, for the purposes of this study.

Patch's conclusions are based on the study of the peasants in their communities. His findings, then, are related to mestizo characteristics. The mestizo traits, therefore, enter into the analysis as a given, as a well known, or as an accepted assumption. The mestizo norm ruling family formation by which sexual life is begun with the religious or civil ceremony, for example, is contrasted to the peasants custom of trial marriage. It is within this context, of mestizo – Indian comparison, that Heer (1964:74 – 75) sustains that “Stycos has a more difficult time proving that sexual permissiveness exists in lesser degree among the Spanish-speaking population”. Should Heer's criticism perhaps be taken as based upon or suggestive of the general difficulty of identifying mestizo characteristics? At any rate, the ascription of certain traits as belonging to the mestizo population will depend on how mestizo is defined.

General consensus probably will be found in the definition of mestizo suggested by Holmberg (1961:68):

A person, who speaks an Indian language, wears homespun dress, and chews coca will be classed as an Indian. If the same person speaks Spanish, wears Western dress and does not chew coca he may be classed – depending on other characteristics such as family name, occupation, education, and wealth – as either mestizo or white. (Emphasis added)

From Holmberg's definition of Indian and mestizo, it follows that an assumption of a two – category cultural distribution of the Bolivian population is weaker than one resembling a multiple – category distribution. Although more than one trait could and should be used as indicators for measuring culture or cultural change, for illustrative purposes it may suffice to use one – language spoken, for example. Of course, even language, may measure shades of acculturation: a person who speaks his native language to his parents and

Spanish to his children, for example, may be placed higher on a scale of acculturation than one who speaks only in his native language. The point is that culturally, a continuum may exist from pure Indian to non-Indian.

Patch (1961:143 – 144) has already shown that this holds true for the Indian – mestizo part of the scale at the community but not at the individual level.

In his words:

Each community as a whole could be ranked, by the proportion of Indian or mestizo characteristics, somewhere on a spectrum between a purely Indian and a purely mestizo culture. But, strikingly enough, within each community, the individual members could not be ranked meaningfully on any similar scale.

Because Patch studied the peasants at their communities ⁴⁶ and limited his analysis to the Indian – mestizo scale, given that culturally by mestizo is understood a representative having partly Indian and partly non-Indian traits, it may be argued that within Bolivia's population representatives may be found of purely on Indian traits. The cultural scale from Indian to non-Indian would then be complete. Although probably more on racial data than on cultural terms, the 1942 Census of La Paz ⁴⁷ gives an idea of what the complete Indian to non-Indian scale might include:

White (2 percent); Latin American White (39.8 percent);

Mestizo (34.9 percent); Indian (23.2 percent).

Of course, the Spanish-speaking departments of Santa Cruz and Beni should be expected to rank higher than the City of La Paz in terms of their white

46. Patch reports interviewing "five hundred heads of families (in) seven widely scattered communities in the Department of Cochabamba."

47. Direccion General de Estadistica, Censo, Ciudad La Paz, 1942: 21.

and Latin American white composition.

Since, admittedly, the peasant (Indian) culture should be studied within the framework of the larger society of which the peasant is only a part; the finding of the continuum Indian to non-Indian is facilitated. In Redfield's words (1967):

Seen as a "synchronic" system, the peasant culture cannot be fully understood from what goes on in the minds of the villagers alone. (p. 26). And we shall move outside of that community to study institutions and groups that connect Little (peasants) and Great Tradition (city civilization) in single structures of several distinguishable kinds". (p. 30).

Given that one of the purposes of this study is to examine cultural change, if any, of the peasant, where can greater influence upon the peasant be found than in the center itself of Redfield's Great Tradition?

Peasants viewed from the occupational perspective only cannot be found, at least in sufficient number, in the city. The question is, therefore, if daughters of migrating peasants represent peasantry subject to acculturation. A quick positive answer can probably be given if, instead of peasant and peasantry, the terms Indian and Indianness are used. Goode (1961:925) solves the problem by mixing the two concepts, Indian and peasant, in one when he states that: "It is in the city that the Indian peasant may become not only culturally but also socially assimilated". Because most of Bolivian Indians are peasants ⁴⁸ the terms can perhaps be used interchangeably. At any rate, the immediate change occurring to the peasant (or Indian) because of his move to the city is in terms of his occupational status and not in terms of his racial or, as Holmberg puts it, his

48. But not all peasants are Indians; for example in the areas of Santa Cruz and Beni, peasants may be found who are not of Aymara or Quechua origin.

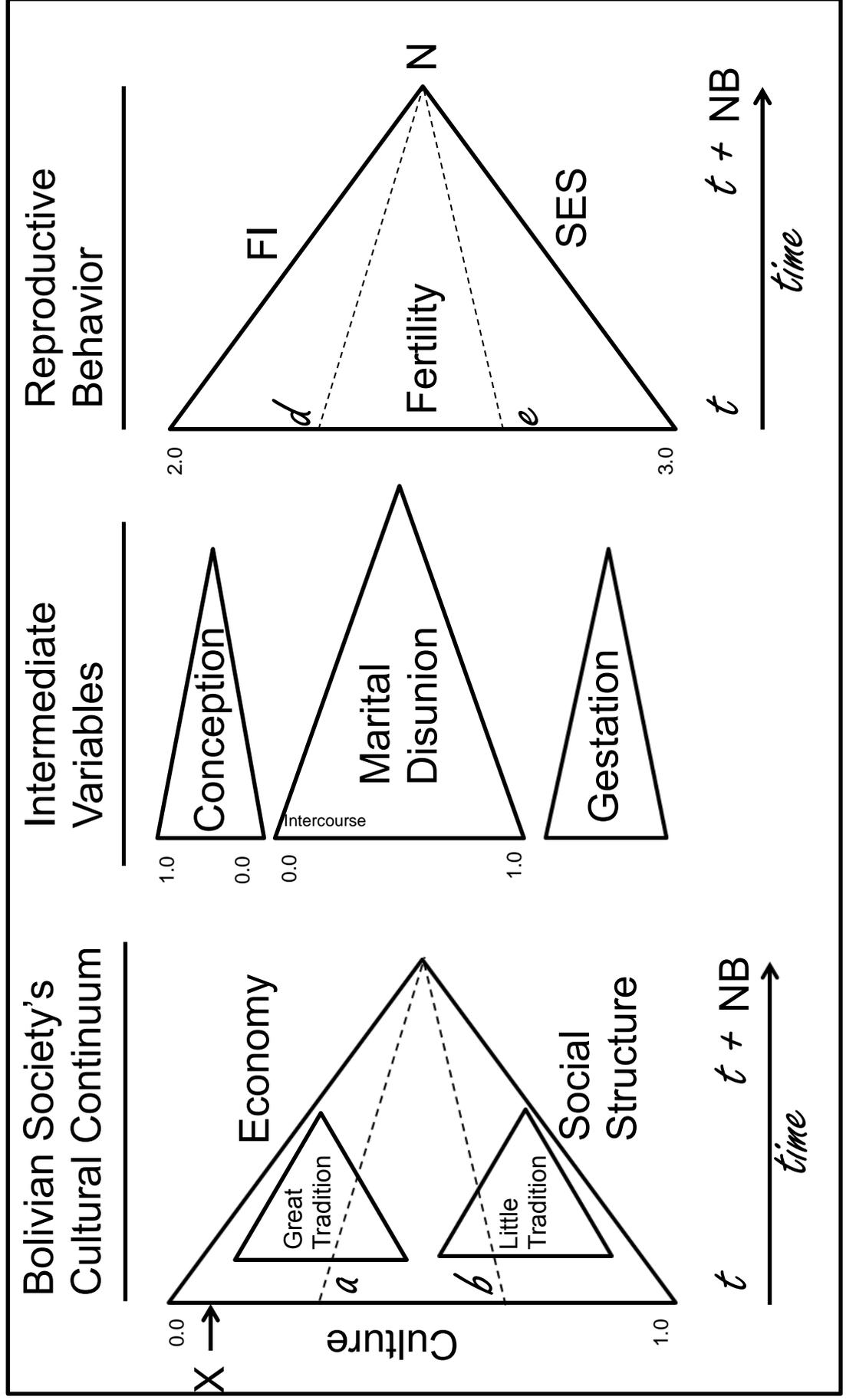
“class” status. This immediate change, of course, points to the acceptance of the migrant peasant and the migrant peasant’s daughter as representing peasantry subject to acculturation when examined at the city of migration.

At the abstract or theoretical level, then, the ideas so far discussed – cultural change of Bolivian Aymara peasants, the intermediate variable of marital disunion, and the dependant variable of fertility – can be put together as shown in graph 8.

In Graph 8, Bolivian Society is seen in triangular form tending toward vertex NB (New Bolivia). Along time t , Bolivian Society develops culturally, socially, and economically toward time $t + NB$. Culturally, for example, development may be achieved by shortening the distance between the Great and Little Traditions: the transformed society may then take the form of the triangle α, β, NB in broken lines. One aspect of the development or transformation of the Bolivian Society from the cultural point of reference is the reduction of the peasantry by the “enlightenment” originated in the Great Tradition: in Goode’s terms peasants become “assimilated, integrated” by their interaction with other members in the society. External influence on Bolivian society’s development is symbolized by the arrow, indicating influence in greater degree and more directly on the Great than the Little Tradition.

Bolivian society, in terms of her peasantry or Indianness, may constitute a continuum from, say, 0.0 to 1.0.

Graph 8. A Tentative Scheme for the Dependency Relationship of Fertility through the Intermediate Variables



The Great and Little Traditions are also represented on the graph by triangles. Since “the peasant society is a half–society”, (Redfield 1967:25 – 26) ⁴⁹, the Little Tradition may be looked at as the bottom part of the triangle, and in consequence the Great Tradition would be placed at the top of the triangle. In this manner, the Bolivian Society may be viewed as a type of a “segmented” society resembling Yinger’s model. ⁵⁰

However, since as a result of the 1952 revolution the Bolivian peasantry has been participating in the political life and in the decision-making of governmental acts, even if in varying degrees, it would seem proper to place the Little Tradition as a triangle within but not as the lowest segment of the whole society. Thus, although at a lower level than the Great Tradition, the Bolivian peasantry, as if “floating” within the whole society, is freer to develop or become assimilated, integrated.

The communal homogeneity found by Patch (1961) may be incorporated into the model portrayed by Graph 8 by representing homogeneous communities by small triangles within the Little Tradition.

Within the Bolivian society represented by the triangle in which the Great and Little Traditions are circumscribed, the rest of the area may be assumed to constitute the mestizo population. The mestizo population, in a varying degree of acculturation, is not generally a part either of the Great or the Little Traditions, but its contribution to development is recognizable. In Osborne’s words (1952:176):

49. Redfield citing A.L. Kroeber’s thinking in the latter’s book Anthropology, New York, 1948:284.

50. J.M. Yinger, The Scientific Study of religion, The MacMillan Co., New York, 1970, p426

While still excluded from the higher offices of government, the mestizo class, called cholos in Bolivia and Peru, has become in many ways the backbone of the social and economic life of these countries.

Finally, to complete the description of the triangular model of the Bolivian society, the pointing of the triangle toward Davis' and Blake's "intermediate" variables is meant to symbolize the direction of the dependent relationship: culture or cultural change affects fertility through the intervening variables.

Although the main interest of this study is placed on the intermediate variable of marital disunion, in addition to the largest ⁵¹ triangle symbolizing the intercourse variables, of which marital disunion is a part, the conception and gestation and parturition variables have been drawn in Graph 8.

The placing of values from 1.0 to 0.0 on the triangle symbolizing the conception variables is meant for interpreting the available evidence supplied by CEP. As such, the evidence includes the use or non-use of contraception but excludes fecundity or infecundity, both voluntary and involuntary. According to the CEP study, the use of contraception is for the Great Tradition (urban La Paz) greater than for the Little Tradition (Table 4). This greater usage of contraception is symbolized by placing the value 1.0 at the top of the conception triangle in correspondence to the higher position within the societal triangle of the Great Tradition.

No attempt is made either to register the CEP evidence or hypothesize the values corresponding to the gestation variables. No values are given because of possible fragility of the CEP evidence on fetal mortality. However, a hypothesis

51. The greater magnitude of the triangle is not meant for greater effect on fertility.

worth testing should be concerned with learning the most approximate effect of the gestation variables on the fertility of both the Great Tradition⁵² and the Little Tradition of Bolivian society.

The central hypothesis of this study has to do with the effect of marital disunion on the fertility of Bolivian peasantry in process of cultural change. The placing of values from 0.0 to 1.0 on the intercourse-MARITAL DISUNION triangle symbolizes the hypothesized differential effect of marital disunion: at time t , incidence of marital disunion, greater for the Little than for the Great Tradition, is determinant for a lower fertility of peasantry at the Little Tradition than if incidence of marital disunion were less. Furthermore, cultural change from time t to time $t+NB$, other things kept equal, determines an increasing fertility of peasantry at the Little Tradition by lessening of the incidence of marital disunion.

The last triangle in Graph 8 represents the fertility performance. Fertility, measured for example by the gross reproduction rate (GRR), may be illustrated to range from about 2.0 female births per woman in the Great Tradition (top part in both the societal and fertility triangles), to about 3.0 female births per woman in the Little Tradition⁵³. The GRR, of course refers to women in the reproductive age (15 to 49 years old), and it is a measure that does not take into account the mortality effect on said women.

52. Results of the CEP 1970 study on abortion in certain cities of Bolivia are not yet available.

53. The CEP's evidence has shown that rural Santa Cruz fertility is higher than urban La Paz fertility. Rural Santa Cruz is nearly all Spanish-speaking and, of course, it's composition includes peasantry. However, these peasants may be thought of as distinct from the cultural point of view from Aymara and the Quechua peasants.

Tentatively and in the preliminary version, this scheme in Graph 8 may be complemented by two forces acting on the fertility triangle. These forces may be synthesized by the Fertility Ideals (side FI of the triangle) and by the socio-economic–status pressures on the other side (SES). It may be hypothesized that through time – from t to $t+NB$ - under cultural, social, and economic development, change toward low fertility ideals and toward higher SES is in motion. Along time, realization of too high fertility performance gains in depth, urge, and mass coverage according to the pace of peasant cultural assimilation, social improvement, and economic advance. The overall societal fertility, then, would tend toward fertility performance depicted by the new triangle δ, ϵ, NB . In the new situation, at time $t+NB$, the Fertility Ideals (side FI) and the SES pressures are, relative to the fertility performance (side $\delta\epsilon$), of such an intensity as to force lower fertility than at time t : triangle δ, ϵ, NB is smaller than the primitive, and the range δ, ϵ is lesser than from 2.0 to 3.0 GRR.

The final hypothesis, not to be tested here, complements rather than contradicts the central hypothesis of this study. Acculturation of the peasant, Aymara and the Quechua, is hypothesized to tend to force higher fertility by decreasing marital disunion among peasants if other things were kept equal. Increasing acculturation, in conjunction with social and economic improvement, however, means that other things are not kept equal. It may be that acculturation, by diminishing the incidence of marital disunion, will increase fertility up to a point, and then other forces more powerful than a given degree of acculturation, will counteract the initial effect so that fertility will tend to decline. Providing the necessary and sufficient conditions (acculturation and social and economic advance) to shorten the threshold from tendency to high to tendency to low

fertility is a challenge to governments, economists, sociologists, and demographers.

Hypotheses

Complex and undeveloped as the preliminary model suggested may appear, this study's concern is much more modest.

The central hypothesis may be stated in the following terms: under the condition that acculturation of the peasant implies decline in the incidence of premarital intercourse, trial marriage, and consensual union, the adoption of the legal or legalized marriage as part of the normative system of family formation provides a formal means conducive to longer periods spent at risk for intercourse (less incidence of marital disunion) and for this reason is determinant for an increasing fertility of the peasant in process of cultural change.

The working sub-hypotheses leading to the testing of the central hypothesis are:

1. The greater the cultural change of the peasant, the lesser the incidence of premarital intercourse and trial marriage.
2. The greater the cultural change of the peasant women, the lower the incidence of sexual unions of women at risk of conception.
3. The lesser the incidence of premarital intercourse and trial marriage, the lesser the incidence of marital disunion.
4. The higher the incidence of formal (legal and religious) unions or the higher the incidence of formalization of consensually unions, the lesser of the amount of time lost at risk for sexual intercourse.
5. To the extent that hypotheses 1 to 4 are validated, and other things kept equal, acculturation of the peasant implies a tendency toward higher fertility.

Chapter III

THE DATA

At least some of the problems discussed by Back and Stycos in the Survey under Unusual Conditions (1959) were foreseen and solutions were prepared for this study's field research in Bolivia. Interviewers, for example, were given instructions on how to handle a situation when faced with interference from relatives or friends.

The field survey, however, presented problems for which no ready or easy solutions were available. The following problems are worthy to mention here:

- 1) Uncertainty of the financing of a broader project¹ submitted to Bolivian officials a year before this study survey took place. Fortunately, during the month of discussions on the financing of such a project, time was also dedicated to the preparation of this thesis' smaller project. The limited size of this study is due to a smaller sample size, because of the exclusion of the Quechua peasantry, and the exclusion of the peasant hypothesized to be in a state of cultural transition² between the Altiplano peasants and the peasants' daughters of La Paz city.
- 2) Social upheaval caused by general political tension culminating in two coups d'état, one after another.
- 3) Esprit de corps of the student interviewers in Santiago de Huata, a fact that did

1. Details of this project are given in Footnote 4.

2. Details of the peasant in cultural transition are given in Footnote 4.

not allow selecting the best qualified candidates for interviewing.

The net result of these unexpected³ problems was to pursue the objective of gathering the information with the flexibility in mind and compromise in practice. Since the greatest care was taken – under the circumstances – to gather useful information, the realization is clear that, although the data do not provide definitive results, they are strongly suggestive and add significantly to our knowledge in a situation where little else has been done.

Design: The Ideal and the Practice

To investigate cultural change and its hypothesized effects on the fertility of Aymara Bolivian women, the survey design aimed at two assumed distinct subsets of the Bolivian Aymara population: (a) Aymara women whose place of birth and permanent residence since birth was the rural, peasant, community or sparsely settled Altiplano area; and (b) Aymara women whose place of birth and permanent residence since birth was the city of La Paz⁴.

-
3. The language problem discussed later was not unexpected, and for this reason is not included above.
 4. A research proposal, of which this study is a modified part, submitted in August 1969 to the Centro Nacional de Familia (CENAFa), Bolivia, called for a third subset, hypothesized to be subject to cultural transition: (c) Aymara female population born in the rural, peasant Altiplano but whose place of permanent residence, for at least 3 consecutive years (1967 to 1970), was the city of La Paz. The project's main interest was to study the fetal mortality–fertility and infant mortality–fertility relationships. It aimed at interviewing 1000 women 15 to 34 years old in each of the 3 subsets of the Aymara population. CENAFa's decision – either rejection or commitment – was never made explicit. In spite of “great” interest on the project expressed by CENAFa's executives, from August 1969 to August 1970, the study, unfortunately, was neither carried out as initially planned nor was it financed by CENAFa.

Therefore, while the universe⁵ for the first subset is a population scattered within an area about “500 miles long and 80 miles wide”, (Encyclopedia Britannica, 1965, volume 3, page 875) the sub universe for the second subset is a population concentrated within the urban area of the city of La Paz.

From the start, factors such as cost, availability and travel problems of female interviewers, and lack of suitable predesign information, prohibited a probability sample survey of the rural Aymara subset. Instead, the human and material resources thought to be available were predisposed to aim at assumed typical, but not statistically representative target Aymara populations of the Altiplano outside of the city of La Paz.

On the other hand, because problems as complex as those in the rural area were not foreseen for the survey in the city of La Paz, a three – stage probability sample was planned for this subsample. It was to include selecting relatively small census units, listing all women 15 to 34 years of age in those units, and interviewing a random sample of 400 of those women. In stage I, relatively small census units (e.g., city blocks) would have been selected with probability according to size. In stage two, a census type listing would have been made of all women 15 to 34 years old in a certain number of city blocks drawn in the first stage. It was estimated that the census type listing should have aimed at between 4,000 and 5,000 women for whom the following information would have been gathered: (1) address, (2) name, (3) age, (4) civil status, (5) place of birth,

5. Since hypothetically the 2 subsets of the Aymara population are at priori distinct populations, it does seem proper to say that each subset has its own sub universe from which a sample may be drawn.

(6) father's place of birth, (7) mother's place of birth, (8) number of consecutive years living in the city of La Paz, if born elsewhere. In stage three, the simple random sample of 400 women would have been drawn from the second stage list. These 400 women would, then, have been interviewed for the substantive subject matter of this study.

Due to the fact that neither updated information⁶ from the 1950 census of the city of La Paz nor the 1970 census figures (at least preliminary) were available in a suitable form to draw a sample of census units, the survey design in the city of La Paz was modified to aim at presumed typical, but not statistically representative, population⁷.

Data Collection in the City of La Paz

Information in the city of La Paz was collected by seventeen students of the Facultad de Servicio Social Universidad Mayor de San Andres. Of these female students, five were in the fourth and last grade of the Facultad, nine were in the third grade, and three in the second grade. All of them had previous experience in survey work. They received intensive one week (15 hours) instruction on the objectives of the survey, on the questionnaire, and on the interviewing method. After filling out the practice questionnaire, each interviewer was examined in detail as to comprehension of the questionnaire and quality and accuracy of the procedures followed.

6. Even only approximate data were not available at the main and perhaps the only one source: Direccion Nacional de Estadistica y Censos.

7. The census type listing, however, was retained in the final design.

Because of their previous experience, the interviewers seem to be fairly well acquainted with the areas of the city of La Paz where the Aymara population is relatively concentrated. A list of the districts where the interviewers preferred to work and where they had worked in the past showed a comprehensive coverage of all areas of the city of La Paz, emphasizing the neighborhoods called barrios marginales. It was decided, therefore, to let the interviewers look for eligible respondents in areas of their choice, at least for the first two weeks, and then make adjustments of area covered if necessary. No area adjustments were made. Fairly wide coverage of La Paz resulted as shown by Table 8.

Table 8. Area and Number of Respondents in the city of La Paz.

Area of the City	No. Respondents
La Paz (city) total	248
Villa Fatima	22
Vino Tinto	20
S. Juan Lazareto	15
Alto Miraflores	14
Max Paredes – Buenos Aires	13
Alto Lima	12
La Portada	11
Villa San Antonio	10
El Tejar	10
Los Andes	9
Villa Victoria	9
Central – Montes – Peru	8
Entre Rios	7
Villa Copacabana	6
Villa 18 de Mayo	6
Chamoco Chico	6
Garita Lima	6
Achachicala	5
Puente Negro; Villa Delicias; S. Pedro Alto; Calvario; Tembladerani; Villa Zarzuela (4 cases, each)	24
Miraflores; Alto Chijini; Villa Armonia; Villa Pabon; Purapura	15
Estacion Central; M. Kapac; Av. Arce; Sopocachi; V.N. Potosi; Virrey Toledo; Munaypata; Alto Obrajes; Seguencoma; Aranjuez (2 cases, each)	20

Eligibility of respondents was determined by the following criteria: (1) age had to be between 15 and 34 years; (2) birthplace had to be the city of La Paz; (3) father and mother had to have been born in the rural, peasant Aymara area of the Altiplano. This last criterion was modified after the second week of the survey, allowing that one instead of both parents should have been born in the rural Altiplano area. Rural Altiplano area was defined as all of the high plateau area of the Department of La Paz. As such, it excludes all towns, capitals of the province or county, and all the Valley (Yungas) and the low flat northeast areas of the Department of La Paz.

In order to ensure that the information collected will not over-represent single and young women, interviewers were given instructions to interview a fixed quota of the age distribution of prospective respondents. The proportion by age of women to be interviewed by each interviewer and the percent of respondents actually interviewed in the city of La Paz are as follows:

<u>Age Group</u>	<u>Quota (%)</u>	<u>Actual Percent</u>
15 -19	20	28
20 – 24	20	19
25 – 29	30	27
30 – 34	<u>30</u>	<u>26</u>
Total	100	100 (N = 248)

As shown in this table, particularly by the larger than requested percent of women in the age group 15 to 19 years, the quota was not fulfilled exactly as

requested. In addition, 15 questionnaires from women 35 to 37 years old were received. However, the information contained in these 15 questionnaires is excluded from all tabulations on which the analysis is based. Of a total of 274 questionnaires filled out in the city of La Paz, questionnaires for women over 34 years old constitute 6 percent. The number of questionnaires rejected for other reasons amount to 11 percent⁸.

Interviewers reported only 2 refusals. This low refusal rate may have had its origin, at least in part, in a promised payment to the respondent of 5 pesos bolivianos (about US\$ 0.42) at the completion of the interview. This monetary reward may have also helped to cut down revisits, which in most cases were made to complete or correct some inconsistencies but not because the respondent did not complete the interview. Only a few cases were reported in which the interviewer had to make a second or third visit, in spite of the fact that the interview took an average of 1 hour and fifty-five minutes, with a range from 45 minutes to three hours.

Begun in the second week of September 1970, the interviewing in the city of La Paz lasted 10 weeks. Interviewers reported that about one-third of the respondents were interviewed during weekdays and working hours. The other two-thirds of the interviews were made during the late afternoon or early evening,

8. Of these questionnaires, 4 (or 1%) were rejected because of incompleteness of information, 3 because the information corresponded to women not born in the city of La Paz, and 4 because of inconsistencies found within the information recorded. Incompleteness or inconsistency in most cases was found within the histories of pregnancy or sexual unions.

but most of the interviews were done on Saturdays, Sundays, holidays, and other days when the irregularity or complete stoppage of administrative, commercial and other such activities, because of political unrest, seemed to allow freer time to both interviewers and respondents. It is believed, however, that the political unrest interfered with a normal development of the survey, the net result having been felt in a number of interviews (274) less than the goal of 400. The objective was not met in La Paz due to interviewer dispersal. As a field practice, the students of Facultad de Servicio Social who served as interviewers traveled to Altiplano communities. Although this dispersal interrupted interviews in the city of La Paz, it allowed the interviewers to gather information from the rural Aymara peasant population in the Altiplano, in addition to that from Santiago de Huata.

Data Collection in the Rural Areas

After considering several areas⁹ where typical Aymara populations could be found, communities around Santiago de Huata were chosen because of the availability of potential interviewers at the Bautista Saavedra School of Rural Teachers in that town. Although willingness to collaborate in this study was also found at the School of Rural Teachers of Huarisata in nearby Achacachi, the Santiago de Huata area was preferred because, according to impartial sources, the Santiago de Huata School (both teachers and students) seemed to be more highly regarded by the peasant communities than the Huarisata School.

9. Areas around Pucarani, Batallas, Huarina, Achacachi, and Santiago de Huata were visited.

The principal and the sociology teacher at the school in Santiago de Huata gave their full cooperation to the survey, both acting as supervisors. Their supervision, however, was at the administrative rather than the technical level. In addition to seeing that the student interviewers performed their function of collecting the information in the field, the principal and the sociology teacher graciously permitted the use of part of their class time for instruction on the survey research. Two other teachers in the school also granted permission to use about four hours of their class time. Instruction on census¹⁰ and the subject matter of the study was given to all third grade female students during two weeks for a total of twenty hours.

In spite of the instruction time dedicated to interviewers in Santiago de Huata, more than to interviewers in the city of La Paz, the former found more difficulties than the latter in collecting the information. In comparison to the student interviewers of La Paz, the shortcomings of the students of Santiago de Huata were: 1) their level of education was lower; 2) for all of them this was their first experience at formal interviewing; 3) in general, their attitude toward the survey seemed apathetic, and even though they needed the money, the monetary reward did not overcome their lack of motivation; 4) although they spoke the native Aymara language, some of them were unfamiliar with native words for premarital intercourse, sexual union, live birth, etc.; and 5) it was difficult for them, at least at the initial stage of instruction, to speak of sexual union instead of marriage, and more than one student blushed or looked

10. Both male and female students of third and second grade received instruction on census. They took a de jure census of Santiago de Huata (475 inhabitants, September 10, 1970).

surprised at the instruction on matters such as abortion and sexual intercourse before sexual union.

On the other hand and to a greater extent than the La Paz interviewers, the interviewers of Santiago de Huata were familiar with the area and the population to be interviewed. This familiarity was based on their participation in the government's Literacy Campaign. Most, if not all, of the peasants participating in these courses were adult women, many of them attending accompanied by their small children, who would also benefit from a free breakfast served by the future rural teachers. The interviewers, therefore, had relatively no difficulty in "gaining entry to the community and household" (Back and Stycos 1959: 5). In addition, because of their valued social (educational) work among the peasants, they were able to obtain from the peasant women not only their time to answer the questions, but also their trust and their willingness to follow instructions, particularly in reference to maintaining privacy during the interview.

The selection of interviewers in Santiago de Huata was especially difficult. Since all third grade female students had received instruction on the survey's objectives, questionnaire, and method of interviewing, and since they seem to have a strong esprit de corps, all female students were given the opportunity to perform at least one interview in spite of the fact that some of them had already encountered difficulties in taking the census of Santiago de Huata.

The pretest of the questionnaire satisfied what seemed a group attitude that all or none of the students would have to be hired, and it made them understand their own interviewing capabilities. A review of the questionnaire, item

by item, by this survey director with each of the potential interviewers discouraged more than one of the students. The esprit de corps seemed to break and discouragement was followed by apathy among most of them.

A self-selection process was soon in effect after a week of distributing the pretested questionnaire to all of the students who knew the native language of Aymara. Of twenty-seven female students¹¹ who participated in the initial distribution of questionnaires, only six tacitly agreed to continue interviewing¹².

After a two-month (September and October) period of gathering reliable¹³ information under rather close administrative supervision by the school principal and the sociology teacher, a student's strike at the Santiago de Huata School visibly affected the teacher – student relationships, and as a consequence the normal progress of the survey interviewing¹⁴. After the strike, three of the six regular interviewers seem to be falsifying questionnaires. Since twenty-four

-
11. The age of the students ranged from 21 to 26 years. Two of the students were from the second grade. One of these second graders was married and had with her a son. She became one of the best interviewers.
 12. Of twenty-seven potential interviewers, seven students never handed in their first trial; five students handed in one or two questionnaires which, for incomplete or for inconsistent information recorded, were rejected and never were completed or corrected; nine students filled out three questionnaires or less after completing or correcting some of them with information gathered in re-visits, but did not ask for any more questionnaires to continue interviewing.
 13. Eight of the seventy-four interviews completed during the first 2 months of interviewing were checked by this survey director in a visit paid to each household. All eight were found correct in terms of the number of household members, children alive and children dead.
 14. In addition to the strike, the unexpected delay in the gathering of information may also be attributed to: 1) several holidays: 21 September, Day of the Student; 1 November, Day of Saints; 2 November, Day of Defunct; 12 October, Day of the Americas; 20 October, Foundation of the city of La Paz, also commemorated at the School of Santiago de Huata; and 2) the national political tension.

questionnaires were thus in doubt, a decision was made not to distribute any more questionnaires to these three interviewers¹⁵. This action seemed to affect the other three interviewers' production, which decreased considerably.

The unexpected necessity of having to reject twenty-four questionnaires and the noticeable impact on the diminished production of the remaining three student interviewers would have caused the research to fall short of the set goal of at least 300 interviews¹⁶. Fortunately, the goodwill and conscientious assistance of two teachers of Santiago de Huata allowed gathering reliable information, additional to the seventy-four questionnaires filled out by the six student interviewers. The cooperation of these teachers and college students of La Paz saved the research survey from representing too small a sample¹⁷.

-
15. Data on these 24 interviews are excluded from the tabulations and, consequently, do not enter into the analysis.
 16. It should be noted here that, in addition, twenty-one questionnaires had already been rejected during the "normal" two-month period of interviewing. The reason for rejecting these questionnaires, in great part constituting the first trial of an interviewer, was incompleteness of information recorded in at least one of the four main parts of the questionnaire.
 17. The students' strike and the Government's decision to hold exams at an earlier rather than the normal date allowed the teachers to work as interviewers.

At the end then, 198 reliable interviews¹⁸ were made in the Altiplano, the area distribution of which is as follows:

Area	Latitude ¹⁹	Longitude	Interviewer(s)	# Interviews
Altiplano				198
Santiago de Huata	16°00' - 16°10'	68°45' - 68°53'	Students Teachers	82 48
Copacabana	16°10'	69°05'	College Students	25
Tiahuanacu	16°35'	68°40'	College Student	4
Jesus Machaca	16°45'	68°50'	College Student	10
Caquiaviri	17°00'	68°30'	Teacher	29

It is important to note that although the names of the areas in the table (above) correspond to towns, the respondents were women living in peasant communities (comunidades campesinas) or in sparsely settled households away from the said towns.

The areas of the Altiplano²⁰ are all west of La Paz. The southernmost Altiplano area is the Caquiaviri area at a distance of about 70 km from La Paz,

18. Of the 198 interviews, 11 are excluded from the analysis because they refer to women over 34 years of age. These 11 interviews were made by the student interviewers of the Santiago de Huata area.

19. Latitude, south of the equator, and longitude west of Greenwich, are approximate figures.

20. A description of the Altiplano area may be found in H. Osborne, 1954, Chapter 1.

and the northernmost areas are Santiago de Huata and Copacabana at about 95 and hundred and 10 km respectively, from La Paz.

Interviewing in the rural peasant Altiplano began a week before interviewing in La Paz and lasted eighteen weeks, eight weeks longer than in the city. The Altiplano interviewers were instructed to gather information for the same quota and age groupings as in La Paz. As shown in the following table and on page 67, while in the city of La Paz women of age 15 to 19 years are over-represented with respect to the quota, in the Altiplano women of age group 20 to 24 years are over-represented at the price of an under-representation of the older (30 – 34 years) age group.

<u>Age Group</u>	<u>Quota (%)</u>	<u>Actual Percent</u>
15 – 19	20	23
20 – 24	20	28
25 – 29	30	29
30 – 34	<u>30</u>	<u>20</u>
TOTAL	100	100 (N = 198)

Other than age, no criterion of eligibility of respondents were imposed in the Altiplano. The instructions, however, require that only one woman had to be interviewed per household and that the households must be away from and not in the towns.

No refusal was reported to have occurred in any area of the Altiplano except Santiago de Huata, and there only when the interviewers were students.

Refusals were not direct, however. Some women²¹ excused themselves temporarily because they were at work or occupied with important business. Unfortunately, no record was kept of how many of the women actually interviewed were approached more than once. A second approach could possibly have diminished an estimated refusal rate of 7 percent among 243 women approached at least once.

The Questionnaire

Before filling out the main questionnaire, a census-type listing of all members belonging to the household of the prospective respondent was required.

The purpose of this list²² was, in addition to gathering some information on household composition, to help in the identification of the eligibility of the respondents, particularly in La Paz. In the rural peasant area of the Altiplano, besides facilitating the adherence by the interviewers to the age and quota requirements set for the respondents to be interviewed, data on place of birth and on migration from La Paz was collected in order to help the interviewer in eliminating women who were not born in the place of research or who had previous residence of 3 or more months in La Paz.

-
21. Seventeen cases were reported of women initially refusing to be interviewed. If none of them were actually interviewed subsequently, then about 10 percent refusal rate in the Santiago de Huata area, and about 7 percent of all interviews (including those rejected) should be considered.
 22. As stated earlier (page 66), the list would have been used as the sampling frame in the La Paz survey, but for the reasons explained it only served the purpose here described. The list was printed on a sheet separate from the main questionnaire.

The survey questionnaire covered three main topics: 1) cultural change and attitudes, 2) pregnancy history and 3) history of sexual unions²³.

Important subheadings of the questionnaire may be summarized as follows:

- I. A. Language, dress, diet, artifacts
- B. Rationality, particularism - universalism
- C. Reference groups' influence
- D. Functional literacy, education, occupation, occupational status
- E. Submissiveness, aspirations
- F. Ideal family size
- II. A. Premarital experience
- B. History of pregnancies²⁴
- III. A. History of four unions, beginning with the current or last sexual union.
- B. Attitudes toward marriage and legitimation of unions.
- IV. A. Interviewer's evaluation

23. A copy of the complete questionnaire is included in Appendix I.

24. The part on the history of pregnancies was heavily borrowed from a questionnaire used by Dr. Ian D. Pool, of Cornell University in his research in Accra.

The questionnaire was constructed so as to make it easy for the interviewer to administer and to make it clear and comprehensible to the respondent.

First, the format, in small pages (6 ¼" by 8 ¼"), with printing of the questions on only one side of the booklet (except the central page on which the history of pregnancy, with space for 15 pregnancies, was to be recorded), and second, a mostly structured questionnaire in which the interviewer was instructed to circle, underline or check (x) most of the respondents' answers are features which should have helped the interviewers to perform their task.

An important aim was to gain the respondent's cooperation and maintain it through the end of the interview. Toward this end, the introduction emphasized the possible benefits to Bolivian women and their children resulting from the knowledge to be acquired by the survey research. The succeeding parts of the questionnaire progressed carefully from general questions on everyday life to more complicated and intimate questions.

Crosschecks for age, for events such as first sexual intercourse and first pregnancy, and type of first sexual union are provided by asking the same question in different places and slightly different wording.

Under the impression that a means to discover the real incidence of sexual unions – as opposed to marriage – is to deal with life together of a woman with a man, the question on civil or religious marriage is left at the end of the history of the first, or second, or third sexual union. In other words, the history of sexual union is asked in terms, not of marriage, but in terms of fact (or not fact) of being or had been living (with a man) in a sexual union. A pre-coded slot (Married) is

provided, however, to record the respondent spontaneously affirming her civil status of married instead of in a sexual union.

The questionnaire, translated into Aymara, was distributed to each of the interviewers in both La Paz and the Altiplano area. However, the recording of the answers during the interviews was made in all cases on the Spanish version presented in Appendix I. In theory, the student interviewers in Santiago de Huata and the college interviewers in other areas of the Altiplano, and in some cases in La Paz, would have had to become so familiar with the translated questionnaire in Aymara that at the time of interviewing – using the Spanish questionnaire – they would have been able to make a simultaneous translation into the Aymara language with little need to consult the questionnaire translated into Aymara. In practice, it is not known to what extent these interviewers who seemed to know sufficient Aymara in fact may not have known enough. Without consulting the translation and by using the Spanish word that may have made the question incomprehensible to the respondent, the interviewers may, perhaps, have caused unmeasured biases. However, at least three of the original six student interviewers in Santiago de Huata and the two teacher interviewers had such excellent command of the Aymara language that the simultaneous translation may have become easy and natural after their first few interviews.

In order to have some notion a posteriori of the influence, if any, of the language on the data collected at the interviews, the intention was to tape – record every interview in its entirety. However a limited budget and firm but unexplained opposition by one of the peasant leaders in the Santiago de Huata area made recording the interviews impossible.

Chapter IV

FERTILITY

In this chapter the dependent variable, or reproductive performance, is examined. Without regard, at this point, to the cause or causes of differential fertility, the task is to verify the hypothesis that the fertility level of peasant Altiplano Aymara women is lower than the fertility level of peasants' daughters born and living in an urban environment.

Restrictions and Supporting Features

Before considering the levels per se, however, the reliability and validity of this study's data as well as, in general, the statistics of other developing countries deserve close examination. Moreover, since the possibility of inaccuracies or biases exist, even after the researcher may have made use of tools for "controlling" his experiment, it is necessary to weigh the restrictions against the sustaining features of the data.

Most of the restricting features of the data collected have been mentioned in previous chapters. A summary of these limitations may take the following form:

1. The data have origin in a population assumed to be typical but not statistically representative. Since women or households were not selected on a probability basis, no inference for the universe of the peasant Aymara population of

the Altiplano area or of La Paz can be made. An estimation of the sampling error, of course, is not possible either.

To be typical, a population must meet certain conditions automatically built into a representative or probability sample. In other words, to draw valid conclusions from an assumed typical sample, the survey information must conform to certain essential features in the universe. Since the interest is placed on the dependent variable of fertility, essential features are defined as all or at least nearly all of the factors (independent variables) determining the reproductive performance. Attributes such as age, marital status, age at sexual union, dissolution of the sexual union – to name a few of the factors accounting for fertility behavior – should distribute proportionately in the sample so as to correspond to or at least be similar to the proportional distributions found in the universe. Because statistical information on the Aymara universe is lacking or in all probability outdated (1950 Population Census), an evaluation of this study's data in comparison to findings in the recent CEP's investigation should prove enlightening (see below).

2. Of the sources of error of the non-sampling type, interviewer bias would seem to occupy a prominent place in surveys taken in countries like Bolivia where research experience is limited. During the pretest of the questionnaire a measurement of interviewer influence was available. Unfortunately, it was the only objective test made. This test, a tape recording, revealed very heavy influence by the interviewers on the respondents' answers. It was so heavy, in fact, that perhaps the more appropriate descriptive word is "pressure". The emphasis placed on eradicating incorrect attitudes and procedure by talks to interviewers collectively and

individually is hoped to have “controlled” if not altogether stopped the interviewers’ zeal in probing for the answers wanted instead for what the respondents actually believed or had to report.

3. One important limitation is the relatively small size of the sample. The restriction is important because the smallness of the sample does not permit a cross-tabulation analysis that could hold more than one or two factors constant at a time. Furthermore, the importance of this limitation is significant not only because of its effects – controlling few variables – but because of the reasons explaining why a smaller sample was gathered than was planned in the design of the survey. As mentioned before, an apathetic attitude toward the survey interviewing was the initial but not the last or only cause for slowing down the production of the interviewers of the Altiplano peasant women. The several holidays may have been contributing factors, affecting probably the Altiplano survey in greater degree than the La Paz survey. Then too, the unstable political climate and social upheaval caused by two coups d’etat probably did much to interfere with a normal gathering of data.

The most pertinent of the supporting features of the study are the following:

1. Since the predisposition was to encounter deeply distrustful respondents, particularly in the Altiplano area, surprisingly the results point to relatively low rate of refusals (probably less than 7 percent) in the Altiplano area and a rather negligible one in La Paz (less than 1 percent).

2. Knowledgeable and experienced interviewers in the city of La Paz and socially well accepted interviewers in the Altiplano area contribute to building confidence in the results of the survey. The reliable and efficient work done by

the two teachers and by the college students in the Altiplano area, though it could not offset the rejection of a number of questionnaires of uncertain character, it is worthy of special mention.

Keeping in mind the natural tendency to overestimate one's own work or the work on which one is a participant, the interviewer's evaluations of each interview may be taken as clues to the respondents' openness (trust) and understanding of the questions, reliability of the answers, and help or interference from another person present during the interview.

As seen in Table 9 according to the interviewers' judgment, respondent women in La Paz were as reliable as those interviewed in the Altiplano area: about 95 percent of the respondents in La Paz and about 97 percent of the respondents in the Altiplano area were evaluated as reliable (and very reliable).

Table 9. Reliability of respondents (in percent) according to interviewers' evaluation by area and age-generation, 1970.

Reliability	La Paz			Altiplano		
	Total	Young (15-24)	Old (25-34)	Total	Young (15-24)	Old (25-34)
Total	100%	99 *	100%	100%	100%	100%
Very reliable	16	18	14	18	17	18
Reliable	79	75	81	79	79	80
Not reliable	5	6	5	2	3	1
Very unreliable	-	-	-	1	1	1
(N)	(243)	(114)	(129)	(182)	(93)	(89)
(UNKNOWN)	(5)			(5)		

* Because of rounding errors this column does not add to 100.

The percent of women evaluated as unreliable was somewhat greater in La Paz (about 5 percent) than in the Altiplano area (about 2 percent), a fact that may be indicative of a more mature judgment (because of their experience in interviewing) among the college interviewers. It is interesting to note that two Altiplano respondents, one of the young generation (15 to 24 years of age) and the other of the old generation (25 to 34 years of age), were evaluated as very unreliable. It is interesting, of course, because the qualification of very unreliable, refers to peasant “traditional” women whose “personality” according to Jaimes Freyre (1964: 5) is an “impenetrable and cloistered” one.

The consistency of the results in Table 9 would seem to indicate that the college and experienced interviewers agree with the less educated and less experienced interviewers of the Altiplano in their judgment of the reliability of the respondents’ answers. This may be taken as a sign that the findings in the Altiplano are as reliable (or not reliable) as the findings in La Paz.

Against the overall quality of the findings in the Altiplano area but in favor of a fair judgment of the Altiplano interviewers – without denigrating, however, the judgment of the La Paz interviewers – Table 10 indicates that Altiplano respondents understood the questions to a lesser degree than the La Paz respondents. While in La Paz 78 percent of the women understood the questions well, in the Altiplano area a relatively low number of respondents, about 62 percent, understood the questions well. The language difficulties, therefore, seem to have had serious implications, not only in the Altiplano where simultaneous translation from Spanish to Aymara was needed, but also in La Paz where daughters of peasants were interviewed.

The language problem seems to be reinforced by the following finding. In the Altiplano area the percent (40) of women of the old generation evaluated by the interviewers as having a fair understanding of the questions is greater than the percent (26) of La Paz women of the same generation with a fair understanding. The greater this percent (40) in the Altiplano, the fewer the number of women who understood the questions well (60 percent in the Altiplano against 73 percent of La Paz women).

Table 10. Understanding of questions by respondents (in percent), by area and age-generation, 1970.

Understanding of questions	La Paz			Altiplano		
	Total	Young	Old	Total	Young	Old
Total	100%	100%	100%	100%	100%	100%
Good	78	70	73	62	63	60
Fair	21	30	26	38	37	40
Bad	1	-	1	-	-	-
(N)	(241)	(112)	(129)	(178)	(92)	(86)
(UNKNOWN)	(7)			(9)		

The interviewers' evaluation depicted in Table 10 serves, then two purposes. First, because the results agree with the expectations – more problems in general and more problems of language in particular for the Altiplano area – the general quality of the interviewing process in the Altiplano area may be

said to be as fair as in the city of La Paz. Second, the information collected in the Altiplano should be viewed as meaningful but not free of restrictions.

As to the openness or trust placed by the respondents on the interviewers – as judged again by the interviewers – the results in Table 11 seem to confirm in general the previous findings.

Table 11. Respondents' trust (in percent), by area and age-generation, 1970.

Respondents' Trust	La Paz			Altiplano		
	Total	Young	Old	Total	Young	Old
Total	100%	100%	100%	100%	100%	100%
Very good	24	30	19	23	20	26
Good	60	53	66	72	74	71
Fair	16	17	15	5	6	3
Bad	-	-	-	-	-	-
(N)	(238)	(114)	(124)	(183)	(94)	(89)
(UNKNOWN)	(10)			(4)		

The more experienced college interviewers of La Paz would seem to have had greater ability to spread (in the statistical sense) their judgment.

Furthermore, the social contact of the student interviewers of the Altiplano with their respondents seems to be revealed and confirmed by the higher percent of women judged to have confided in them (about 95 percent, “good” combined with “very good”) than in the La Paz interviewers (about 84 percent). The absence of any “bad” evaluations in either La Paz or the Altiplano perhaps points to a general high quality survey.

Finally, the interviewers' evaluation included the help or interference of friends and relatives present at the interviews. In most cases, help or interference came from relatives. In Table 12 no distinction is made as to the identity of the outside party. Help or interference seems to have been greater in La Paz than in the Altiplano area. Interference in La Paz was reported by the interviewers to have come mostly from parents and spouses as well as from young children and customers (the latter occurring when the interview took place at the location of a family business). This fact may account for the greater percent of young women of La Paz (21 percent) suffering from interference than older women (8 percent). More young women of the Altiplano were also subject to interference (4 percent) than older women (0 percent). Help was reported to have been given in recalling ages and dates and in language translation.

Table 12. Percent of respondents helped or interfered with by others during the interview, by area and age-generation, 1970.

Characteristics	La Paz			Altiplano		
	Total	Young	Old	Total	Young	Old
Total	100%	99 *	100%	100%	99 *	100%
Help	9	5	12	6	4	7
Interference	14	21	8	2	4	-
Help-Interference	6	6	6	4	4	4
No help – no interference	71	67	74	88	87	89
(N)	(241)	(113)	(128)	(182)	(92)	(90)
(UNKNOWN)	(7)			(5)		

* Because of rounding errors these columns do not add to 100.

This fact also may be responsible for older women needing more help (12 percent in La Paz and 7 percent in the Altiplano area) than young women (5 percent and 4 percent, respectively, in each area).

In summary, the interviewers evaluation of some key points in the interview procedure seem to point out that: 1) assuming the La Paz college students had done a good job, and there are no signs to indicate they did not do so, the consistency of their interview evaluations with those of the students and teachers of the Altiplano lead to the conclusion that the quality of the survey in the Altiplano may be comparable to a certain extent to that of La Paz and 2) since about 41 percent of the interviews of the Altiplano were completed by the student interviewers, some of whom turned in questionnaires that had to be rejected because of dubious origin, great caution should be exercised in interpreting the Altiplano data.

Evaluation by Comparison

The age distribution. Since it is generally recognized that age is one of, if not the most important, determinants of fertility, the age distribution of a survey's respondents must be closely examined for certain requirements. These conditions will probably depend on the survey's objectives. If the interest, for example, is placed on the level of total fertility in the universe, then the age distribution of respondents in the sample survey must be equal percentagewise or similar to that of the universe or be capable of equalization with that of the universe. Capability of equalization is understood mainly in terms of sample size, which will permit modification of under- or over-represented age groups by means of predetermined weights. The larger the sample size, the smaller the

variation around the mean and the greater the confidence the weighting procedure will achieve desirable results.

If, on the other hand, the objective is to examine differential fertility between two populations, for example, then the condition of equality of the age distributions between sample and universe probably may be relaxed. Furthermore, it may be more efficient to study differential fertility in two populations if the age distribution is exactly equal (percentagewise) to the other. The procedure would be comparable to an automatic standardization by which the age factor is held constant.

Since the aim in this thesis is to examine differential fertility, the age-quota of respondents given to the interviewers was an attempt to age-standardize, from the start, the samples taken of peasants' daughters in La Paz and of peasants in the Altiplano area. Moreover, because the main concern was not the estimation of total fertility¹, and in order to increase (indirectly) the sample size, the survey design aimed at interviewing women only within ages of 15 to 34 years. The decision to ignore women 35 years of age and older was supported by some evidence² showing that the older the age the less reliable the information was from the illiterate population of Bolivia. In addition, since it is generally accepted that "older women

-
1. Estimation of total fertility may still be possible since the part of the fertility curve available (from 15 to 34 years of age) may be extended on the basis of CEP's findings (1968) under, for example, assumptions of high, medium, and low alternative patterns of fertility.
 2. Benjamin Franco-Suarez, Estimación de Tasas de Natalidad, de Crecimiento y de Mortalidad en la Republica de Bolivia, alrededor de 1950, CELADE, Santiago de Chile, Abril de 1962 (mimeo).
B. Franco-Suarez, A Reviewed Analysis of the age group 10-14 years old in the 1950 Census of Bolivia, unpublished paper, Cornell Univ., May 1969.

tend to omit offspring who died especially many years earlier” (U.N. Manual IV, 1967:31), the decision to limit the interviewing to women 15 to 34 years of age allowed simplification of the problem and concentrated efforts and resources available on the younger women.

For reasons explained earlier, however, the collection of data according to the age-quota was not entirely successful in either La Paz or the Altiplano area. The percent of age distribution of “Indian” women canvassed in the 1942 Census of the city of La Paz³ shown in Table 13 is to be used as a standard of comparison.

A comparison between the age distributions of this study’s data and that of the 1942 standard reveals first that the 20-24 age group of the City Peasant is under-represented (19 percent) in comparison to the “Indian” women canvassed in 1942 (25 percent). It seems clear, however, that counterbalancing the under-representation of the 20-24 age group, the 25-29 and 30-34 age groups of the City Peasant are over-represented (27 + 26 = 53 percent) in comparison to the 1942 “Indian” women (46 percent). Second, it is shown that this study’s Altiplano

-
3. Although earlier than the 1950 Census, the 1942 age distribution is presumed more reliable than the 1950 Census. The 1950 Census figures (when all women equaled 100 percent) for the Department of La Paz are the following:

15 - 19	9.89%
20 - 24	10.08%
25 - 29	8.82%
30 - 34	6.69%

women, while under-represented at both extreme age groups (15 – 19 and 30 – 34 years) with 23 percent and 20 percent respectively, the middle age groups may possibly be only slightly over-represented, again in comparison to the age distribution of “Indian” women canvassed in the 1942 Census of La Paz.

Table 13. A comparison of the age distribution of respondents (in percent), by areas, 1942 Census of City of La Paz (Indian women), CEP’s investigation, 1968, and this study’s data, 1970.

Age	1942 Census	CEP (La Paz) *		Peasant	
	La Paz	Urban	Rural	City	Altiplano
Total	100%	100%	100%	100%	100%
15 – 19	29	24	22	28	23
20 – 24	25	26	18	19	28
25 – 29	46	27	32	27	29
30 – 34		23	28	26	20
(N)	(10242)	(409)	(424)	(248)	(187)

* Calculated from number of cases and percent distribution of all ages.

Source: Censo Demografico de la Ciudad de La Paz, Table 11, p. 66; Tables 2.1, p. 49; 2.2, p. 50; CEP, Condicionamientos Socio-culturales de la Fecundidad en Bolivia, 1968.

A comparison of CEP’s data with the age distributions in the 1942 census also shows under-representation in certain age groups at the expense of over-representation in others. Noteworthy is the under-representation of CEP’s young rural women (age groups 15-19 and 20-24 with weights of 22 percent and 18 percent, respectively) with respect to “Indian” women in the same age groups in the 1942 Census (with weights of 29 percent and 25 percent, respectively). Also

noteworthy is a rather heavy over-representation present in the age group 25-34 (60 percent) of CEP's rural women against only 46 percent of the same age group of "Indian" women in the 1942 Census of La Paz.

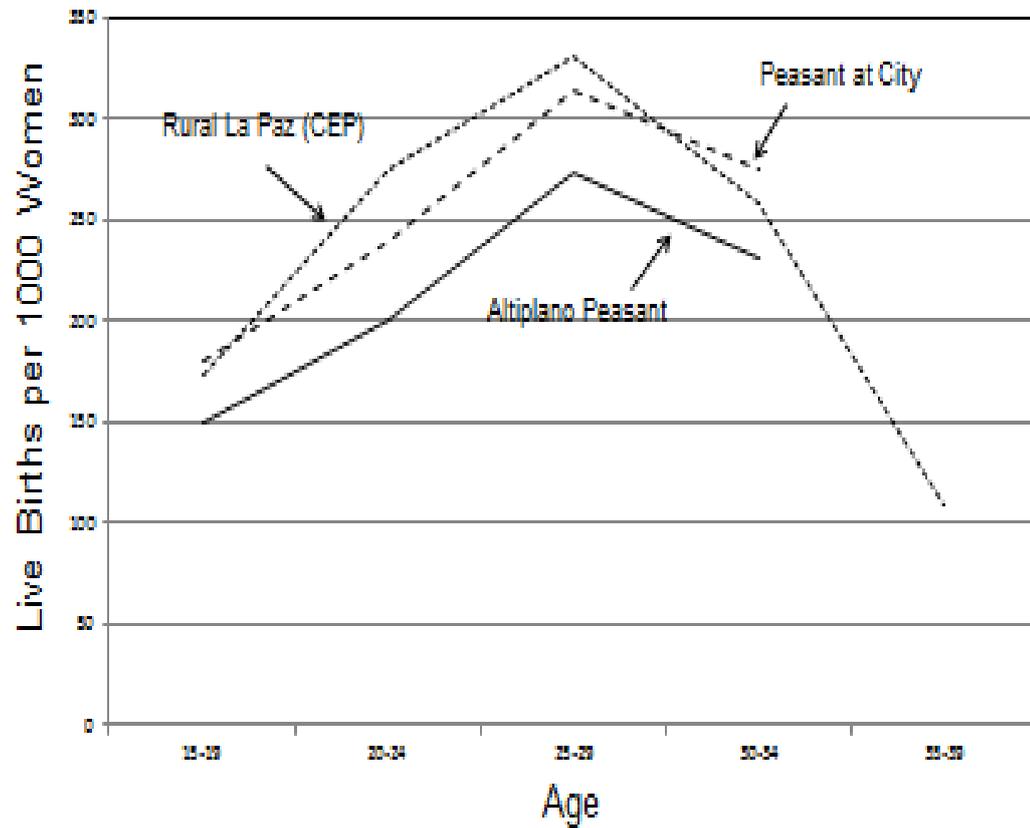
Without supplementary information, such as age at sexual union (marriage), and age at frequency of child-birth, the effect on fertility of the under-representation and over-representation cannot be but conjectured.

In order to have some notion of this effect, however, Graph 9 is included. In it CEP's estimated age-specific fertility rates have been drawn. To make comparisons to CEP rates, this study's rates have been estimated by the procedures reported by CEP 91968: 85)⁴, and these estimates are also shown in Graph 9.

In Graph 9, the age-specific birth rate at age 20-24 years in this study's City Peasant curve is lower than the age-specific birth rate of CEP's data for rural La Paz women. The under-representation of City Peasant in the age group 20-24 years (19 percent, Table 13) may, thus, be taken as a possible cause for lowering fertility of City Peasant. However, since 1) the overall shape of the fertility curve of CEP's Rural La Paz affords credibility for a phenomenon that seems to behave in an expected fashion, in spite of an under-representation of women in the age group 20-24 years (18 percent in Table 13, comparable to the under-representation of City Peasant, 19 percent, Table 13), and since 2) the general shape of the City Peasant

4. Essentially, the procedure is as follows: after drawing the curve of mean fertility (at ages 17.5; 22.5; 27.5; and 32.5), the cumulative fertility is read in the curve at ages 20; 25; 30; and 35. The difference between two adjacent cumulative rates (i.e.: 25 and 20; 30 and 25; 35 and 30) is, then, the estimated five-year age-specific birth rate.

Graph 9. Estimated Age-Specific Birth Rates, Bolivia



Sources: Bolivian Survey, 1970
 CEP, 1968, Op.Cit., Table 2.37, p. 87

curve seems also to behave according to an expected pattern comparable to that of CEP's Rural La Paz, the inclination is to see the City Peasant age distribution (Table 13) as a valid representation of peasants' daughters. However, two qualifications must be made: 1) an under-representation of women in the age group 20-24 years may be cause for a mean fertility at this age lower than if there were no under-representation. The shape of the City Peasant curve seems to indicate that the lowering effect of fertility at this age is likely not very great. 2) an over-representation of women in the age group 30-34 years may possibly have artificially increased their mean fertility.

A net result of the joint analysis of Table 13 and Graph 9 leads to the belief that if the age distribution of the City Peasant (Table 13) is corrected, fertility of young City Peasant would be somewhat increased and fertility of old City Peasant would be somewhat lowered. These limitations should be borne in mind when differential fertility is examined.

The consideration of both the estimated age-specific birth rates of Altiplano peasant (Graph 9) and of age distribution of Altiplano Peasant women in Table 13 seems to lead to an examination of other factors but not age distribution as a cause for a low mean fertility at all ages. At the middle age groups, for example, since this study's Altiplano women (Table 13) are over- rather than under-represented, the expected mean fertility should be higher rather than lower unless again other factors were to be held responsible. Among other factors such as fetal mortality, and marital disunion, the possibility of a biased sample should not be overlooked. Systematic interviewing of women with few children, because of the less work involved in filling out the pregnancy history, is a concern

to be taken seriously. But the analysis of fertility proper is left for the next section.

On the other hand, the shape of the fertility curve of the Altiplano Peasant (Graph 9), although at a lower level than CEP's Rural La Paz, does seem to conform to an admissible pattern. An estimated birth rate at age 30-34 years of the Altiplano Peasant is rather close to the rate of CEP's Rural La Paz. The point seems interesting because the rates at that age are somewhat similar in spite of the fact that this study's Altiplano Peasant women at age 30-34 years are under-represented (20 percent Table 13) in respect to CEP's Rural women who are over-represented (28 percent, Table 13). If the under-representation of this study's Altiplano Peasant women is a cause for lowering fertility of Altiplano Peasant at age 30-34 years, then the adjusted rate presumably would be higher but still lower at a general level of fertility than that of the City Peasant.

(A valid question on the effect of standardization by age and an attempt to answer it is delayed until fertility itself is examined).

In summary, the examination of the sample age distribution leads to the following conclusions:

1. An under-representation of women at age 20-24 years may have lowered fertility, and an over-representation of women at age 30-34 years may have increased fertility among this study's sample women of the city of La Paz.

2. Opposite to that of the City Peasant, an over-representation at age 20-24 years and an under-representation at age 30-34 years of Altiplano Peasant women is apparent from Table 13. The possible effects on fertility, however, are not clear: the over-representation does not lead to an expected higher fertility,

indicating that the effect of other factors, including a bias, should carefully be considered. The under-representation of Altiplano Peasant at age 30-34 years may possibly have the effect of lowering fertility at that age. If the under-representation at age 30-34 years were adjusted, the effect on fertility on that age would be to increase it but perhaps not as much as to be higher than the fertility of City Peasant.

The current civil status. Because of its importance in determining fertility and since information on current civil status is available in the CEP publication (1968), the percent distribution by current civil status of this study's data and those of CEP for the Department of La Paz may throw light on the degree of comparability and in that manner give support to the data; or, on the other hand, a distribution comparison may disclose possible defects in the data.

In Table 14 City Peasant women who are single (27%) do not seem to differ greatly from CEP's Urban women (24%). The difference, however, between Peasant Altiplano respondents (20%) and CEP's Rural respondents (15%) is somewhat larger. At any rate, since the difference between Urban-Rural in CEP's study comprises 9 percentage points ($24 - 15 = 9$), and the difference between City Peasant-Altiplano Peasant is only 7 percentage points ($27 - 20 = 7$), the inclination is to accept the proportional representation of single Peasant women as sufficiently adequate to study differential fertility.

As advanced earlier (p.80) and more fully examined later in this thesis, the manner in which questions were formulated on the sexual union or marriage should be a cause for discrepancies seen in Table 14 on individual civil statuses.

The important points to make, then, seem to be those that will take composite proportions: 1) Women married and in sexual union represent 67 percent of all women in CEP's Urban, against 57 percent of the same status (including trial marriage) in the City Peasant. Part of the difference (between 67 and 57 percent), or 7 percentage points, is made up by women separated and widowed

Table 14. A comparison of the civil status distribution of respondents (in percent), by areas, CEP's investigation, 1968, and this study's data, 1970.

Current Civil Status	CEP (La Paz) *		Peasant **	
	Urban	Rural	City	Altiplano
Total	100%	100%	100%	100%
Single	24	15	27	20
Sexual union	9	8	13	31
Trial marriage	-	-	1	2
Civil marriage	58	73	15	17
Civil - religious marriage	-	-	28	24
Separated	5	2	11	4
Divorced	1	-	1	-
Widowed	3	2	4	2
(N)	(624)	(634)	(231)	(170)
(UNKNOWN)	-	-	(17)	(17)

* Women of age 15 to 50.

** Women of age 15 to 34.

Source: Table 2.8, p. 54, CEP, Condicionamientos Socio-culturales de la Fecundidad en Bolivia, 1968.

which show a proportional representation larger among the City Peasant than among CEP's Urban respondents. 2) A similar situation occurs in a comparison between CEP's Rural and this study's Altiplano Peasant respondents: the proportion married and in sexual union is larger in CEP's Urban Rural (81 percent) than in Altiplano peasant women (74 percent). The percent of women separated and widowed, however, does not cover this difference as much as for urban women: of the 7 percent difference (between 81 and 74 percent), only 2 percent more of Altiplano Peasant women are separated or widowed than CEP's Rural respondents.

In general, the comparative analysis of the two sets of data does not seem to show differences that cannot be explained. This leads to the belief that, as far as the proportions by civil status are concerned, this study's data may be typically representative of the populations under investigation and, thus, adequate for studying differential fertility.

Differential Fertility

The purpose in this section is to examine in detail the fertility of Altiplano Peasant women, which is lower, at least apparently, than the fertility of City Peasant women. (A glance at this differential has already been taken in Graph 9).

In Table 15, the mean number of live births by age and areas is presented. As a standard of comparison CEP's data on Rural La Paz women are included.

A general impression from Table 15 is that this study's data, as for the number of live births per woman, seem comparable to those of CEP's

investigation of Rural La Paz women. Gross errors can be disregarded, and, furthermore, Peasant fertility in general seems to be at all ages (except age 15-19) consistently lower than fertility of Rural La Paz women⁵. However, a close examination of the individual (age by age) differences in Table 15 reveals:

1) Differential fertility at age 30-34 years (between the mean number of live births of 4.68 and 3.65 for City Peasant and Altiplano Peasant, respectively) is too high (1.03) as compared to the individual differences at ages 15-19 years (0.02), 20-24 years (0.38), and 25-29 years (0.39).

Table 15. Mean number of live births (per woman), by age and area.^a

Age	Rural La Paz		City Peasant		Altiplano Peasant	
	(N)	Mean	(N)	Mean	(N)	Mean
15 – 34	(424)	2.80 ^b	(248)	2.34 ^c	(187)	1.79 ^c
15 – 19	(94)	0.33	(69)	0.38	(44)	0.36
20 – 24	(77)	1.61	(48)	1.46	(52)	1.08
25 – 29	(136)	3.27	(68)	2.76	(54)	2.37
30 – 34	(117)	5.01	(63)	4.68	(37)	3.65

Notes: a. Mean per women among all respondents surveyed.

b. Estimated for this study.

c. Calculated from mean and (N) at each age group: weighted mean.

Source: For the CEP's Rural La Paz data, CEP, *Condicionamientos Socioculturales de la Fecundidad en Bolivia*, 1968, Table 2.44, p. 93.

5. As stated earlier (p. 35) the composition of Rural La Paz, as judged by the language spoken, included 44 percent Spanish speaking women and 56% native language speaking.

2) In the case of City Peasant women, the inter-age adjacent differences from youngest to oldest age (between means at ages 20-24 and 15-19 years; 25-29 and 20-24 years; 30-34 and 25-29 years) show an increasing pattern from 1.08 to 1.30 to 1.92.⁶ On the other hand, the inter-age differences for Altiplano Peasant women do not show a similar pattern: after increasing from 0.72 to 1.29, the pattern is stopped by the difference (1.28) between means at ages 30-34 and 25-29 years. 3) The irregularities found in the sharp difference in differential fertility (item 1 above) and the pattern lost (item 2 above) are clear signs, enforcing each other, of an Altiplano Peasant mean number of live births at age 30-34 years, far lower than would be expected.

These observations constitute a strong indication that the under-representation of Altiplano Peasant women at age 30-34 years (20 percent, Table 13) is an important determinant of a lower than expected fertility at age 30-34 years. Therefore, either the mean number of live births or the sample population of Altiplano Peasant women at age 30-34 years must necessarily be adjusted before a differential fertility is accepted between City Peasant, with a summary fertility⁷ of 2.34 live births, and Altiplano Peasant, with 1.79 live births (Table 15).

The adjustment for the Altiplano Peasant must be made under the following assumptions (in addition to those of the best estimate): 1) a systematic bias in one

6. Comparable differences for CEP's Rural La Paz are: 1.28 to 1.66 to 1.74.

7. Summary fertility is defined here as the fertility from age 15 to 34 years.

or all of the age groups is absent; and 2) the under-representation of women in the 15-19 age group is not as crucial for the summary fertility as the under-representation at age 30-34 years.

Avoiding the assumption of a best estimate and assuming only that a systematic bias is absent, the standardization by age can be considered a method for adjustment of the under-representation that also has the additional advantage of “controlling” all under- or over- representations. If, for example, the summary fertility of Altiplano Peasant women (1.79 live births, Table 15) is standardized⁸ by age, the assumption must be made that the mean number of live births at each age group (0.36; 1.08; 2.37; 3.65 in Table 15) is free of a systematic bias. This assumption, therefore, should be verified at all stages of analysis if one were to accept the age standardized data as a valid representation, in this case, of a differential fertility.

The selection of a standard population for this particular object is not difficult. Almost any reasonably distributed population should serve the purpose of “controlling” the under-or over-representation. Since as stated earlier (p. 92), no especial confidence is placed on the 1950 Census age distribution, and since the 1942 Census of the city of La Paz does not provide a breakdown for the age group 25-34 years, the following ideal age distribution was used in addition to the survey’s populations:

8. Since the aim is to “control” the effect of the under- and over-representation, the direct method of standardization or the use of a standard population instead of standard rates is needed.

<u>Age</u>	<u>Standard Population</u>
15 – 34	100.0
15 – 19	26.5
20 – 24	25.5
25 – 29	24.5
30 – 34	23.5

The summary fertility⁹ obtained by direct standardization is as follows:

Standard Population	Peasant Summary Fertility			
	Unstandardized		Standardized	
	City	Altiplano	City	Altiplano
City Peasant (Table 13)	2.34			1.90
Altiplano Peasant (Table 13)		1.79	2.23	
Ideal Standard	2.34	1.79	2.25	1.81

After age-standardization, therefore, City Peasant fertility continues to be higher than Altiplano Peasant fertility. While the unstandardized differential fertility was about 31 percent higher for the City Peasant than for the Altiplano Peasant, the standardized fertility differentials range from 20 percent when the ideal population is used as standard to 23 percent when standardized by the City Peasant population and to 24 percent when standardized by the Altiplano Peasant population.

Since the samples taken are assumed to be typical but not statistically representative, neither the sampling error nor the significance of the difference can be estimated. The minimum difference found of 20 percent, when the effects of the

9. See note 7.

age distribution were “controlled” by an ideal standard population, probably can be taken as a sign of a real difference existing in fertility of the populations surveyed.

Validation of differential fertility

Admittedly, an efficient method of studying the possible biases in a sample survey is at the field, by re-interviewing, for example. A comparative analysis of two samples, however, may at least suggest the presence or absence of biases.

In this section no attempt is made to examine the causes of differential fertility. Rather, the aim is to examine inconsistencies that may lead to biases by means of a cross analysis of certain characteristics and distributions of the two samples, City Peasant and Altiplano Peasant, each further subdivided into young and old generation. It is worthy of note that the control by young and old generation instead of by age has been preferred since the size of the sample will thus permit to have enough number of cases in cells which otherwise would be meaningless. The young generation comprises women at ages from 15 to 24 years of age, and the old generation women from 25 to 34 years.

The procedure of joining two age groups together (15-19 with 20-24 years and 25-29 with 30-34 years) may have the advantage of controlling, at least in some degree, the under- and over-representation of women in some age groups. The assumption of the nonexistence of bias in each age group, affecting, for example, the mean number of live births, will always be present. The procedure of joining two age groups together to form the young and old generations, furthermore, makes concentration on the age group 30-34 years of the Altiplano Peasant sample difficult if not impossible. Since the number of sample cases in this age group of the Altiplano Peasant is small (37 cases), it seems justifiable to

allow the control by other relevant variables. The procedure results in the following proportional age composition:

	City Peasant	Altiplano Peasant
TOTAL	100%	100%
Young Generation (age 15-24)	47%	51%
Old generation (age 25-34)	53%	49%

Of the possible biases affecting the sample survey in the Altiplano area¹⁰, two seem the most relevant: on the interviewer's side, the possibility of preference for interviewing women with few or fewer number of children; on the respondent's part, possible reluctance to mention pregnancies not socially sanctioned (illegitimate births, pregnancies terminated in abortion) and forgetting to declare children who were born in the distant past and who may have died. [It is this last bias – under the name of the effect of mortality – that has been the basis of the criticisms made by Whitehead and Bradshaw of Stycos' findings of differential fertility in Peru and discussed also by Heer and James (see Chapter II)].

10. As seen in Chapter III and in the first part of this Chapter, there are no special reasons to doubt of the reliability and validity of the data in the sample of the Peasant in the city. Furthermore, since it is the Altiplano Peasant's fertility which is the lowest, the presumption is that it is her fertility—rather than the higher Peasant's at city fertility—that deserves closer examination on possible biases.

The interviewer's role in introducing bias may be examined by comparing the results achieved by different types of interviewers.

The classification of interviewers used in Table 16 takes into account command of the Aymara language, previous experience in survey interviewing, and educational level. These indices may be taken as objective, although exact measurement has not been taken. In the classification of interviewers in Santiago de Huata an additional criterion is introduced, more subjective than otherwise, based on the survey director's feeling about honesty of the interviewers in filling out the questionnaire. Under Teachers Santiago de Huata the results of three student interviewers whose work did not raise questions on possible biases are included. Under Students-Santiago de Huata the findings refer to the work by all other students including those three who handed in questionable work that was rejected. Since the interest is to see whether or not the dependent variable, fertility, is biased, the mean number of live births is presented in Table 16 by type of interviewers.

The means in the subsample gathered by Teacher-Santiago de Huata do not seem to differ from those in the subsample gathered by Students-Santiago de Huata. These differences are relatively so small in the young generation (between 0.63 and 0.60), in the old generation (between 2.55 and 2.38), and as per the age-standardized¹¹ totals (between 1.55 and 1.45), that they may be taken as having origin in chance and sample variation but not in interviewer bias in terms of student preference for interviewing women with fewer children.

11. The ideal population distribution given on p. 104 has been used as standard population.

An impressive and unexpected finding in Table 16 is that the teacher and college students obtained a subsample with mean fertility, in the Caquiaviri-Copacabana Altiplano areas, as high as the mean fertility of peasant women of La Paz. This finding poses the problem that perhaps the college interviewers in both La Paz and the Altiplano may have had a preference for interviewing women with more

Table 16. Mean number of live births^a, by type of interviewers (areas and subareas of the Altiplano) and generation.

Generation (Age)	College Students (La Paz)		Teacher-College Students (Caquiaviri Copacabana)		Teachers ^b (Santiago de Huata)		Students (Santiago de Huata)	
	(N)	Mean	(N)	Mean	(N)	Mean	(N)	Mean
Unstandardized total	(248)	2.41	(68)	2.40	(57)	1.37	(62)	1.51
Young (15-24)	(117)	0.82	(31)	1.03	(35)	0.63	(30)	0.60
Old (25-34)	(131)	3.69	(37)	3.54	(22)	2.55	(32)	2.38
Age Standardized total (ideal pop.)		2.21		2.23		1.55		1.45

a. Per woman among all respondents surveyed.

b. Interviewers include two teachers and three mature students, all with good command of the native Aymara language.

rather than fewer children. Although the subsample size is smaller than in the previous comparisons, and for this reason larger variation around the mean is expected, this type of interviewer bias – preference for interviewing women with more children – does not seem to be the cause of a higher mean fertility in Caquiaviri-Copacabana Altiplano than in the Santiago de Huata area. In fact, the unstandardized summary fertility in subsamples (not shown in Table 16)

interviewed by college students in the Copacabana area is somewhat lower (2.13) than the one found in subsamples interviewed by teachers in the Caquiaviri area (2.41), thus suggesting more inter-area differences than a difference between interviewers.

Table 17. Mean number of live births per woman at risk of conception^a, by type of interviewers (areas and subareas of the Altiplano) and by generation.

Generation (Age)	Type of Interviewers (areas)							
	College Students (La Paz)		Teacher- College Students (Caquiaviri Copacabana)		Teachers ^b (Santiago de Huata)		Students (Santiago de Huata)	
	(N)	Mean	(N)	Mean	(N)	Mean	(N)	Mean
Unstandardized total	(198)	2.92	(54)	3.02	(47)	1.66	(58)	1.62
Young (15-24)	(72)	1.33	(19)	1.68	(26)	0.85	(26)	0.69
Old (25-34)	(126)	3.83	(35)	3.74	(21)	2.67	(32)	2.38
Age Standardized total (ideal pop.)		2.53		2.67		1.72		1.50

a. It includes women who declared having had either sexual intercourse or at least one sexual union.

b. Interviewers include two teachers and three mature students all with good command of the native Aymara language.

The mean number of live births in Table 16 refers to all women in the subsamples. In Table 17 a more refined measure is presented in that the mean number of live births refers only to women who declared having had either sexual intercourse or at least one sexual union. Once the effect (on the mean number of live births) of the proportion of women who declared themselves never having

been exposed to conception is removed¹², the differences in the means at both generations (young 0.85 against 0.69, and old, 2.67 against 2.38) and as per the standardized summary fertility (1.72) against 1.50) are in Table 17 larger than those found in Table 16 (0.63 against 0.60, and 2.55 against 2.38, and 1.55 against 1.45, respectively) as a result of the comparison of the performance of teachers and students in the Santiago de Huata area.

For reasons given above, an overall better performance was expected from the teacher interviewers in the Santiago de Huata area than from the student interviewers of that area. A mean number of live births per woman at risk of conception slightly higher for women interviewed by the teachers than for women interviewed by the student interviewers may reflect this general higher level of performance.

However, the question remains as to why the Teacher-College Students had interviewed women with an average fertility higher than that of women in the Santiago de Huata area. Before admitting area differences in fertility – the Caquaviri-Copacabana area against the Santiago de Huata area – further examination of biases seems mandatory.

As previously stated, peasant Aymara women of the Altiplano area not only may frequently forget to declare as live births, their children who died early in life, but these women, in general may also be highly reluctant to even speak of defunct children. Perhaps this reluctance can be linked to a sense of guilt in

12. The effect on fertility of the proportion of women who declared single status will be examined later.

many Aymara peasant women who, as Jaimes Freyre (1964: 61) describes them¹³ still adhere to traditional health practices by which children would seem to have greater chance of dying than of surviving:

The larpha or infantile rickets has origin in the fact that the expecting woman had looked at a corpse or dead animals... The main and most common ways of treating infants affected by rickets are the following: a) On mud brought from a cemetery, women pour boiling water and add nunumaya (salanum pacense): They place the infant on top of that very hot mixture, so that the infant will perspire profoundly. After the act, the parents adopt an attitude of resignation described by the following words: If he (the infant) is to live, he will come out in good health, otherwise he will die almost immediately. In reality, it is a heroic treatment, decisive and selective since only the strongest survive. b) The other type of treatment involves sacrificing an animal of a size greater than a human being – sacrifice which is under a special ceremony, including the petition to the Creator of all things to give His blessing to the entire act and that His will be done in respect to the life of the sick infant – after which the woman or the parents place the infant within the gut of the animal just open, still hot and full of excreta. The infant's entire body is immersed, leaving out only the head so that he will be free to breathe. There the infant remains until the animal's body cools off after one or two hours, time at which he or she is taken out and the sentence of parental resignation is the same as before.

If the incidence of children suffering from rickets is high and if Aymara peasant women use the method described by Jaimes Freyre, then mortality of children by infectious and parasitic diseases, influenza and pneumonia, bronchitis, and diseases of early infancy should encompass a total effect probably greater for Altiplano children than for children of peasant's daughters in La Paz or elsewhere who may have abandoned such practices. Although this study was not designed to examine the mortality-fertility inter-relationship, limited information is available that may help to uncover possible effects of mortality on the fertility declared by the respondents.

13. A free translation from the Spanish original.

In Table 18, a cross-comparison by interviewer performance, and hence by areas, is presented.

Table 18. Mean number of children dead^a per woman at risk of conception^b, by type of interviewers (city area and subareas of the Altiplano) and by generation.

Generation (Age)	Type of Interviewers (areas)							
	College Students (La Paz)		Teacher-College Students (Caquiaviri Copacabana)		Teachers ^c (Santiago de Huata)		Students (Santiago de Huata)	
	(N)	Mean	(N)	Mean	(N)	Mean	(N)	Mean
Unstandardized total	(198)	0.50	(54)	0.42	(47)	0.20	(58)	0.03
Young (15-24)	(72)	0.24	(19)	0.32	(26)	0.08	(26)	0.04
Old (25-34)	(126)	0.65	(35)	0.49	(21)	0.33	(32)	0.03
Age Standardized total (ideal pop.)		0.44		0.40		0.20		0.04

- Estimation is based on the number of live births minus the number of woman's own children declared alive, divided by the number of women at risk of conception.
- It includes women who declared having had either sexual intercourse or at least one sexual union.
- Interviewers include 2 teachers and 3 mature students, all with good command of the native Aymara language.

The assumption of mortality within the Altiplano Peasant higher than that of the City Peasant of La Paz is partly contradicted. While the mean number of dead children is as high in the Caquiaviri-Copacabana area as in La Paz (the age-standardized mean for both areas is about 0.40 per woman), on the other hand, the mean dead children in the Santiago de Huata area is (probably only apparently) lower per the teachers' findings than the age-standardized mean for

Caquiaviri-Copacabana-La Paz (0.20 per woman). Per the students' findings in the same Santiago de Huata area, the mean is lowest (0.04 dead children per woman at risk of conception) of all areas.

Table 19. Mean number of pregnancies per woman at risk of conception^a, by type of interviewers (city areas and subareas of the Altiplano) and by generation.

Generation (Age)	Type of Interviewers (areas)							
	College Students (La Paz)		Teacher- College Students (Caquiaviri Copacabana)		Teachers ^b (Santiago de Huata)		Students (Santiago de Huata)	
	(N)	Mean	(N)	Mean	(N)	Mean	(N)	Mean
Unstandardized total	(198)	3.32	(54)	3.61	(47)	1.87	(58)	1.98
Young (15-24)	(72)	1.61	(19)	1.95	(26)	1.04	(26)	1.35
Old (25-34)	(126)	4.28	(35)	4.51	(21)	2.90	(32)	2.50
Age Standardized total (ideal pop.)		2.89		3.18		1.93		1.90

a. It includes women who declared having had either sexual intercourse or at least one sexual union.

b. Interviewers include two teachers and three mature students, all with good command of the native Aymara language.

Table 20. Mean number of stillbirths per woman at risk of conception^a, by type of interviewers (city areas and subareas of the Altiplano) and by generation.

Generation (Age)	Type of Interviewers (areas)							
	College Students (La Paz)		Teacher- College Students (Caquiaviri Copacabana)		Teachers ^b (Santiago de Huata)		Students (Santiago de Huata)	
	(N)	Mean	(N)	Mean	(N)	Mean	(N)	Mean
Unstandardized total	(198)	0.09	(54)	0.02	(47)	0.00	(58)	0.00
Young (15-24)	(72)	0.03	(19)	0.00	(26)	0.00	(26)	0.00
Old (25-34)	(126)	0.12	(35)	0.03	(21)	0.00	(32)	0.00
Age Standardized total (ideal pop.)		0.07		0.01				

- a. It includes women who declared having had either sexual intercourse or at least one sexual union.
- b. Interviewers include two teachers and three mature students, all with good command of the native Aymara language.

Until a lower mortality level is proven by a specially designed survey in the Altiplano area, the inclination will be to presume that women at Santiago de Huata tended to forget or to hide mortality information. The presumption that women in this area may have caused a respondent bias in their declared fertility, as per the number of live births ever born, seems at least partly supported by their forgetfulness or reluctance to declare fetal mortality.

While a consistently lower fertility (as per the mean number of pregnancies per woman at risk of conception) in Santiago de Huata than in La Paz or Caquiaviri-Copacabana may tend to assign credibility to the information given in Table 19,

Table 21. Mean number of abortions per woman at risk of conception^a, by type of interviewers (city areas and subareas of the Altiplano) and by generation.

Generation (Age)	Type of Interviewers (areas)							
	College Students (La Paz)		Teacher- College Students (Caquiaviri Copacabana)		Teachers ^b (Santiago de Huata)		Students (Santiago de Huata)	
	(N)	Mean	(N)	Mean	(N)	Mean	(N)	Mean
Unstandardized total	(198)	0.19	(54)	0.26	(47)	0.00	(58)	0.00
Young (15-24)	(72)	0.10	(19)	0.11	(26)	0.00	(26)	0.00
Old (25-34)	(126)	0.24	(35)	0.34	(21)	0.00	(32)	0.00
Age Standardized total (ideal pop.)		0.16		0.22				

a. It includes women who declared having had either sexual intercourse or at least one sexual union.

b. Interviewers include two teachers and three mature students, all with good command of the native Aymara language.

on the other hand, consideration of Tables 20 and 21 immediately raises questions as to the validity of the fertility data (Table 19) collected in the Santiago de Huata area. Impressive enough is that no respondent woman in the Santiago de Huata area declared either to the teacher or to the student interviewers ever having had fetal deaths as still births (Table 20) or abortions (Table 21).

The absence of fetal mortality (as declared) is dramatically emphasized by the presence of a high level of fetal mortality in the Caquiaviri-Copacabana area, higher than in La Paz. Moreover, although the mean number of stillbirths in the Caquiaviri-Copacabana area is found (as declared) to be somewhat lower than

the one reported by CEP (1969: 83) for Rural La Paz (0.04)¹⁴; the mean number of abortions declared to have occurred to women of the Caquiaviri-Copacabana (0.22) area is higher than La Paz (0.16) and also higher than the one reported by CEP of 0.14 (CEP, 1969: 83)¹⁵.

Table 22. Mean number of current pregnancies per woman at risk of conception^a, by type of interviewers (city area and subareas of the Altiplano) and by generation.

Generation (Age)	Type of Interviewers (areas)							
	College Students (La Paz)		Teacher-College Students (Caquiaviri Copacabana)		Teachers ^b (Santiago de Huata)		Students (Santiago de Huata)	
	(N)	Mean	(N)	Mean	(N)	Mean	(N)	Mean
Unstandardized total	(198)	0.12	(54)	0.31	(47)	0.21	(58)	0.36
Young (15-24)	(72)	0.15	(19)	0.16	(26)	0.19	(26)	0.65
Old (25-34)	(126)	0.13	(35)	0.40	(21)	0.24	(32)	0.13
Age Standardized total (ideal pop.)		0.13		0.28		0.21		0.40

- a. It includes women who declared having had either sexual intercourse or at least one sexual union.
- b. Interviewers include two teachers and three mature students, all with good command of the native Aymara language.

14. A lower mean may be expected for this study's data, since women interviewed covered ages 15 to 34 years only. Another source of error, of course, may be a misunderstanding of the question or a confusion of the concept of stillbirth with abortion.

15. Although referring to women in the whole reproductive period (ages 15 to 50) and to all (probably not to women at risk of conception) women, the findings by CEP (1969: 83, Table 2.34) for Rural La Paz are the following:
 Mean number of pregnancies 4.03 Mean number of live births 3.81
 Mean number of stillbirths 0.04 Mean number of abortions 0.14

The information on fetal mortality in Tables 20 and 21, therefore, is suggestive of a prevailing higher fertility level in the Santiago de Huata area than the one shown by the crude mean pregnancy in Table 19. Further supporting evidence is contained in Table 22. An age-standardized mean number of current pregnancies per women at risk of conception of about 0.21 in Santiago de Huata¹⁶ (per the teacher interviewers performance) is about as high as the one reported for the Caquiaviri-Copacabana area (0.28) and can probably be taken as a sign of a fertility level in Santiago de Huata higher than the one reported. The question, therefore, is to what extent the Santiago de Huata reported fertility level should be corrected.

Estimation near to the true level may not be essential for the study of differential fertility between City Peasant and Altiplano Peasant; the latter now subdivided between Caquiaviri-Copacabana and Santiago de Huata peasants. Assuming a high mortality level prevalent in the Santiago de Huata area, it may suffice to have an estimate that would or would not offset the apparent difference reported as per the mean number of live births in Table 17.

If it is assumed that the mortality effect in the Santiago de Huata area would be as high as shown by the mean number of children dead in the Caquiaviri-Copacabana area for the young generation (about 0.30 per woman at risk of conception) and as high as in the city of La Paz for the old generation (about 0.65),

16. The mean number of current pregnancies resulting from the students' performance in the Santiago de Huata area probably is affected by interviewer bias in choosing young women currently pregnant or accepting easily, without probing, uncertain pregnancies.

then the estimated values for the Santiago de Huata area as per teacher (F1) and student F2) interviewers would be as follows¹⁷:

	F1	F2
Young generation (15-24)	1.07	0.95
Old generation (25-34)	3.09	3.00
Age-standardized total (ideal population)	2.04	1.93

An estimated age-standardized summary fertility¹⁸ per woman at risk of conception of about two live births in the Santiago de Huata area acquires now a greater degree of admissibility than the crude mean found in the survey. If this estimate were contrasted to the reported fertility of City Peasant women and Caquiaviri-Copacabana peasant women, a difference of between 0.50 and 0.65 mean numbers of live births is probably worth examining.

In summary, as a result of considering possible biases that may be introduced by a respondent or an interviewer or both, a more reliable index of fertility prevailing in the Santiago de Huata has been estimated. A second and perhaps more important result for the purpose of linking cultural change to fertility behavior has been the uncovering of an unsuspected fertility level among Caquiaviri-Copacabana peasant women as high as that probably prevailing for peasant women in the city.

17. The estimate was made by adding the maximum mortality to the mean number of live births reported (Table 17) and subtracting the mortality reported (Table 18).

18. Refers to women from 15 to 34 years of age.

Chapter V

CULTURAL CHANGE

Method

This chapter examines cultural change among Aymara peasant women.

By design, this study of change is “based on a comparison, or difference, between two sense impressions, and, simultaneously, a comparison, of the times at which the sense impressions occurred” (Coleman, 1968: 428-429).

Coleman’s “two sense impressions” are given in the information gathered first for peasants’ daughters in La Paz and second for peasants of the Altiplano area¹. The assumption here is that the information for two subgroups of peasants constitutes cross-sectional data for the Aymara peasant women of Bolivia.

While the spatial dimension difference may be easily understood, the time dimension comparison may need at least some elaboration. If measured traits (“sense impressions”) of La Paz peasants’ daughters and Altiplano peasants are called, respectively, P1 and P2, then the testing of the hypothesized difference that P1 is greater² than P2 implies that through time, from t to t + n, P1 had changed

-
1. As a result of the inquiry in Chapter IV on the interviewer’s or respondent’s bias, the Altiplano peasants have been divided into two subgroups: the Caquiaviri-Copacabana peasants and the Santiago de Huata peasants.
 2. The alternative outcome that P2 is greater than P1 would, of course, disprove the hypothesis subject to test.

from a status $P1 - \delta1$ at time t to its present status ($P1 - \delta1 + \delta1 = P1$) at time $t + n$. “Simultaneously”, either $P2$ had remained at $P2$ from time t to $t + n$, or the increment $\delta2$ had been smaller than $\delta1$. Cross-sectional data, therefore, do permit a comparative analysis that takes into account Coleman’s time dimension prerequisite.

A study that contrasts traits found in young women (15 to 24 years of age) and older women (25 to 34 years of age) seeks to test the hypothesis that the younger the generation the greater the impact for cultural change, particularly in respect to the peasantry, in a society undergoing general change. Such is Bolivian society, where effective change may be assumed to have begun with the Bolivian National Revolution of 1952.

Indicators

Since culture is viewed as the “organization of experience” and as consisting of “the rules which generate and guide behavior” (Valentine, 1970:3), cultural change is examined here in terms of indicators that are assumed to portray La Paz peasants’ daughters as differing from Altiplano³ peasants; that is, the La Paz peasants’ daughters are assumed to organize their experience in different ways and by different rules. To interact with other members of Bolivian society, the peasants need, for example, to learn the Spanish language. Therefore, the extent to which the Aymara language is still spoken is used as one of the indicators of the peasants’ cultural change.

It must be admitted that at least most of the “rules which generate and guide

3. See note 2.

behavior” are not automatically and mechanically complied with by individuals⁴. Individuals, once exposed to new rules – as were the peasants’ daughters in La Paz – must first understand the new rules and then by freely choosing from among alternatives accept some and reject others. It is in this process of learning and internalizing the rules that values enter into the picture as ideals, aims, ends, and ethical standards preceding the acceptance or rejection of the rules. Put in Yinger’s words (1970: 207), when values are categorized “as a character fact: values (are) those criteria that guide selection among alternatives.” Therefore, in addition to indicators of the factual type, such as language, dress, diet, and artifacts an attempt will be made to examine cultural differences using indicators that suggest what the daughters of La Paz peasants believe and what their aspirations are in contrast to the beliefs, ideals, and ends of the Altiplano⁵ peasants.

Some Demographic Characteristics

Before examining cultural change, a few of the relevant demographic characteristics of the populations studied should be examined.

With the exception of one respondent, all peasants’ daughters (247 among 248) interviewed in La Paz declared that city to be their place of birth. Of the Altiplano peasant women interviewed in the Caquiaviri-Copacabana area, all (100%) declared the area where they were interviewed as their place of birth. Of the

4. An exception, perhaps, may be an extremely authoritarian society where individuals may be forced to comply with the rules imposed by the authority in power.

5. See note 2.

Altiplano peasant women interviewed in the Santiago de Huata area, 116

(87%) declared that they were born in the Santiago de Huata area: the rest (17, or 13%) gave other Altiplano (rural) areas as their place of birth.

A rural Altiplano area was given as the birth place of the respondents' father by 99%⁶ of the women interviewed in La Paz. Only three fathers (but not mothers) of respondents were said to have been born in La Paz. Only five respondents' mothers (but not fathers) were declared as having been born in La Paz or other Bolivian city. Therefore, 97% of the La Paz respondents' mothers were declared as having been born in a rural Altiplano area. Of women interviewed in the Caquiaviri-Copacabana area, all fathers and nearly all mothers⁷ were said to have been born in the same Caquiaviri-Copacabana rural area. In the Santiago de Huata area, about 99%⁸ of fathers and mothers of respondents indicated that they were born in the same Santiago de Huata area.

It is interesting to note that while 74% of the mates of La Paz women currently mated, or mated in the past, declared that they were born in La Paz⁹. On the other hand, among the Altiplano women, both in Caquiaviri-Copacabana and in Santiago

-
6. Eight cases are excluded, those being the respondents whose fathers' place of birth was unknown.
 7. The place of birth of one respondent's mother in the Caquiaviri-Copacabana area was unknown.
 8. One father was said to have been born in La Paz. It should be noted that 15 cases of unknown fathers' place of birth and 17 cases of unknown mothers' place of birth are excluded from this percentage (99 percent).
 9. Six percent were born in another Bolivian city. The rest or 26 percent of 152 mated women had mates whose place of birth was an Altiplano rural area.

de Huata, all mates (100%) declared having been born in the rural Altiplano area¹⁰.

In terms of the respondents' occupations, most of the women interviewed in the Altiplano area (90% in the Caquiaviri-Copacabana area, and 87% in the Santiago de Huata area) declared agricultural activities as their main occupation during the year previous to the survey. In La Paz the occupational distribution of the peasants' daughter included: 29% in domestic service; 27% in petty commerce; 30% housewives; 9% in occupations requiring some manual skill; 3% students; and only 1% in agricultural activities¹¹. Some generational differences are worthy of note. Among the young respondents of La Paz (15 to 24 years of age), 36% were domestic servants and 21% were housewives; while among the older respondents (25 to 34 years of age), the distribution was reversed, that is, fewer were domestic servants (24%) than housewives (37%). In the Caquiaviri-Copacabana area more young respondents (93%) than older respondents (86%) declared an agricultural occupation, but in the Santiago de Huata area the reverse was true: older women were engaged in agricultural activity to a larger extent (92%) than younger women (83%).

As to occupational status, respondent women in La Paz were almost evenly

10. With the exception of 9 cases (8 percent of 107 mated women) in the Santiago de Huata area, all mates were declared to have been born in the same area where the women were interviewed. The said 9 cases, however, had another rural Altiplano area as a place of birth rather than an urban area.

11. The percentages refer to 236 cases in the city of La Paz, 67 cases in the Caquiaviri-Copacabana area, and 115 cases in the Santiago de Huata area, for which the occupation was known. Unknown occupational cases in the three respective areas were: 12, 1, and 4.

distributed among the self-employed¹² (30%), employees (36%), and economically inactive (33%). In the two Altiplano areas self-employment and unpaid family work were the most common forms of employment. In the Caquiaviri – Copacabana area of the Altiplano, there were more women self-employed (66%) than unpaid family workers (33%), but in the Santiago de Huata area of the Altiplano the proportion of unpaid family workers was greater (53%), than that of the self-employed (40%). Among the older respondents (25 to 34 years of age) in the Caquiaviri-Copacabana area, 81% declared themselves self-employed and 19% declared themselves unpaid family workers. On the other hand, only 52% in the Santiago de Huata area were self-employed and as many as 44% were unpaid family workers.

Education as a demographic characteristic of the populations surveyed is a complex variable (see Table 23). The most conspicuous points brought out by Table 23 are the following: (1) in the three areas (La Paz, Caquiaviri-Copacabana, and Santiago de Huata) the proportion of young women (15 to 24 years of age) who declared themselves as illiterate is less than that of the older women (25 to 34 years of age). Interestingly, illiteracy in the Santiago de Huata area is about one-half (8% among young women and 15% among older women) of that in La Paz (16% and 30% percent for young and older women, respectively) and that in the Caquiaviri-Copacabana area (16% and 38% for the young and older women, respectively).

(2) as expected the proportion of women who declared they had four or more years of school is greater in La Paz (42% among young women and 28% among older

12. Only one respondent declared herself as an employer. The two categories employer and self-employed were joined for analytical tabulations.

women) than in the Caquiaviri-Copacabana (10% among young and 5% among older women) and Santiago de Huata areas (27% among young and 13% among older women). A comparison of the two Altiplano areas is worthy of note.

Confirming the finding on the degree of illiteracy – a lesser proportion in the Santiago de Huata area than in the Caquiaviri-Copacabana area – the proportion of women with four or more years of school in the Santiago de Huata area is more than twice for both generations (young, 27%; old, 13%) than that of the Caquiaviri-Copacabana area (young, 10%; old, 5%).

Table 23. Highest educational level achieved by respondent women (in percent) by area and generation

Educational Level	Area and Generation					
	La Paz		Caquiaviri - Copacabana		Santiago de Huata	
	Young	Older	Young	Older	Young	Older
TOTAL	100%	100%	100%	100%	100%	100%
Illiterate	16	30	16	38	8	15
Read and Write	3	9	19	3	8	17
Primary (1-3 years)	39	33	55	54	57	55
Primary (4-6 years)	27	21	10	5	24	11
Secondary	15	7	-	-	3	2
(N)	(117)	(131)	(31)	(37)	(65)	(54)
(UNKNOWN)	-	-	-	-	-	-

In summary, the background characteristics of the populations surveyed indicate that:

1. According to the place of birth of the respondents and their parents, women interviewed in La Paz area of peasant descent, and women interviewed in the Altiplano area are all representative of peasantry.
2. According to the place of birth of the mate – for women who had mates – La Paz women could be expected to be influenced by their mates in a positive direction toward cultural change¹³; in both Altiplano areas (Caquiaviri-Copacabana and Santiago de Huata) the mates' influence for cultural change could be expected to be less than in La Paz.
3. Among women of the Altiplano areas, occupational concentration was on agricultural activities; among the daughters of peasants in La Paz there was more diversification of economic activity. In La Paz, furthermore, young women tended to be engaged in activities paid by others, while older women tended to be self-employed or settled as housewives.
4. In La Paz there was a tendency to work away from home under employers other than relatives. On the other hand, in the Altiplano areas the tendency was to work at or near home with or for relatives. The Caquiaviri-Copacabana women seem to be more self-sufficient, particularly the older women, than the women of the Santiago de Huata area.
5. Women of the Santiago de Huata area were proportionately less illiterate than women in both the Caquiaviri-Copacabana area and the city of La Paz.

13. The proportion of mates born in the city of La Paz was 74%.

Young women in the three areas achieved proportionately a generally higher level of education than older women.

Language, Dress, Diet, and Artifacts as Signs of Cultural Change

From Table 24, it is clear that respondent women in La Paz, both young (15 to 24 years of age) and older women (25 to 34 years of age), use the native Aymara language, within the family and to outsiders, in a proportion much smaller than respondent women of the Caquiaviri-Copacabana and the Santiago de Huata areas.

Table 24. Percent^a of women speaking Aymara to children and in answer to Spanish, by area and generation

Aymara Spoken	Area and Generation					
	La Paz		Caquiaviri – Copacabana		Santiago de Huata	
	Young	Older	Young	Older	Young	Older
Percent ^a						
To children ^a	22	10	67	70	59	70
In answer to Spanish ^a	6	4	48	51	33	55
NUMBER OF CASES (TOTAL)						
To children	(111)	(125)	(30)	(37)	(64)	(54)
In answer to Spanish	(116)	(130)	(31)	(37)	(64)	(53)
UNKNOWN						
To children	(12)		(1)		(1)	
In answer to Spanish	(2)		(0)		(2)	

- a. Complement to 100 percent (in each generation) refers to women speaking Spanish. For example, 78 percent of women in the city of La Paz spoke Spanish to children.

If the two Altiplano areas are compared, young (but not older) women of the Santiago de Huata area used the native Aymara language in a proportion slightly smaller when speaking to children and in a proportion much smaller (33 percent against 48 percent) when answering Spanish-speaking people than young women of the Caquiaviri-Copacabana area.

The language indicator, therefore, suggests that peasants' daughters in La Paz have learned or are in the process of learning the Spanish language to a greater extent than the peasants of both Altiplano areas. A greater usage of the Spanish language among young women of Santiago de Huata area in comparison to the young women of the Caquiaviri-Copacabana area further suggests that young women of the former area should have an easier road toward cultural change than young women of the latter area. According to expectations, greater usage of Spanish by women in La Paz is a sign that cultural change of peasants' daughters there, if not a reality, is certainly facilitated, at least in greater degree than among peasants of the Altiplano area.

As shown by Table 25, Caquiaviri-Copacabana peasant women have changed their typical garment very little, whereas the young Santiago de Huata women (23%) have adopted the city pollera, a type of skirt that is usually taken as a sign of transition from Indian to mestizo. In La Paz, most of the peasants' daughters wear the city pollera (57% of the young and 71% of the older women). Moreover, a large proportion of the young women (36%) – much larger than the older women (19%) – are shown to have adopted Western dress.

Table 25. Type of dress worn by women (in percent), by area and generation

Type of dress worn	Area and Generation					
	La Paz		Caquiaviri – Copacabana		Santiago de Huata	
	Young	Older	Young	Older	Young	Older
Total	100%	100%	100%	100%	100%	100%
Rural <u>pollera</u> ^a	7	10	93	95	75	98
City <u>pollera</u> ^a	57	71	7	5	23	2
Western Dress	36	19	-	-	2	-
(N)	(115)	(127)	(30)	(37)	(61)	(46)
(UNKNOWN)	(6)		(1)		(12)	

(a) Pollera is a skirt. While the rural pollera is homemade of cloth also woven at home, the city pollera is of machine made cloth (mostly imported cloth) and usually is tailored outside home.

The type of dress worn is an external sign of cultural change taking place among the peasants' daughters in La Paz and among young women of the Santiago de Huata area. The older women of the latter area, as well as all (young and older) women of the Caquiaviri-Copacabana area – if judged by the garment worn – seem to remain unaffected.

In respect to diet, the percentages shown in Table 26 refer to complex indices originating in four simple questions asked for each of eight paired foods, one assumed more traditional than its opposite. The four questions (Appendix I) were: (1) which of the two do you like more? (2) which of the two do you eat (drink, have) more frequently? (3) which of the two is better food? and (4) which of the two is more expensive?

No clear pattern is shown by the percent of women who selected five or six traditional foods in spite of having said that the opposite modern foods were better. The second index seems more revealing. In the city of La Paz, 16% of the young and 18% of the older women, against very small proportions in the Altiplano areas, said they ate modern foods more frequently than traditional, even though they thought the modern foods were more expensive than the traditional. (Among the eight assumed traditional foods, only three – chuño, or dehydrated potatoes; ají, or chili; and aguardiente, a type of liquor – are usually more

Table 26. Preferred diet of women (in percent)^a who selected five or six foods from a list of eight paired foods (traditional against modern) by area and generation.

Diet preferred	Area and Generation					
	La Paz		Caquiaviri – Copacabana		Santiago de Huata	
	Young	Older	Young	Older	Young	Older
1. Traditional eaten in spite of their opposite, modern, said to be better food	6	10	23	14	10	20
2. Modern eaten even if more expensive than traditional	16	18	3	0	2	2
(N1)	(113)	(129)	(31)	(37)	(60)	(51)
(N2)	(111)	(129)	(31)	(37)	(59)	(51)
(UNKNOWN 1)	(6)		(-)		(8)	
(UNKNOWN 2)	(8)		(-)		(9)	

a. Complement to 100 percent refers to percent of women who chose from 0 to 4, and from 7 to 9 foods.

expensive than their opposite modern). The complex index suggests that peasants' daughters in La Paz, certainly more so than the Altiplano peasants, are adopting foods quite unlike those customarily eaten by the Altiplano peasants (such as chuño, ají, and aguardiente). In short, Altiplano peasants seem to have retained their customary dietary habits to a greater extent than the peasant daughters of La Paz who seem to be in the process of changing their dietary habits.

The simple answers to two questions are presented in Table 27: Of two paired artifacts (one assumed to be more traditional than the other), (1) which do you like more? (2) which do you use more?

Table 27. Preferred artifacts by women (in percent)^a who chose a number of artifacts from a list of nine paired artifacts (traditional against modern), by area and generation

Preferred Artifact	Area and Generation					
	La Paz		Caquiaviri – Copacabana		Santiago de Huata	
	Young	Older	Young	Older	Young	Older
1. Use 4 to 6 traditional artifacts more often than their opposite modern	3	1	23	35	23	17
2. Like 7 to 9 modern artifacts more than their opposite, traditional	52	52	7	8	9	6
(N1 = N2)	(117)	(131)	(31)	(37)	(65)	(54)

(a) Complement to 100 percent refers to percent of women choosing a number of artifacts (from 0 to 9) not included in index 1 or 2.

By the first index in Table 27, the percent of women using traditional artifacts in La Paz is comparatively much smaller than in the Caquiaviri-Copacabana or Santiago de Huata areas. It is interesting to note that 17% of the older women in the Santiago de Huata area as against 35% in the Caquiaviri-Copacabana area declared they used four to six traditional artifacts more often than the opposite modern ones.

The second index in Table 27 supports the findings shown by the first index: a greater proportion of peasants' daughters in La Paz, young and older (52%), against small proportions of women in both of the Altiplano areas (between 6 and 7 percent) preferred from seven to nine modern artifacts over their opposite traditional artifacts.

It must be concluded, therefore, that peasants' daughters in La Paz not only by actual behavior (the use in index 1, above) but also by their ideals (a glimpse of which is given by the liking in index 2, above) show at least a tendency toward cultural change to a greater extent than the Altiplano peasants.

In summary, the language (Table 24), dress (Table 25), diet (Table 26), and artifacts (Table 27) indicators suggest that:

1. Peasants' daughters in La Paz are undergoing cultural change to a much greater extent than the Altiplano peasants of both areas – Caquiaviri-Copacabana and Santiago de Huata.
2. Altiplano peasants of both areas, while they may be in the process of learning the main vehicle of cultural change (The Spanish language, Table 24), nevertheless show some resistance to change according to dress, diet, and artifacts indicators.

3. The young generation of the Santiago de Huata area, in comparison to that of the Caquiaviri-Copacabana area, shows greater tendency toward cultural change according to the language, dress, and diet indicators (index I).

Universalism – Particularism

In an attempt to examine the values that orient their organization of experience, the respondents were asked questions to determine whether “cognitive standards have primacy over appreciative (universalism), or appreciative standards have primacy over cognitive ones (particularism)” (Parsons, 1952: 248).

The patterns shown by the answers given to questions 29 to 39 of Appendix I lead to the same main conclusion. The answers given to two of the questions are presented in Table 28.

A larger percent of peasants' daughters (La Paz) – in most cases twice or more than the Altiplano peasants of both the Caquiaviri-Copacabana and Santiago de Huata areas – would seek advice from an expert or would vote to elect a well-educated stranger as mayor rather than a relative. This seems to indicate that peasants' daughters place universalistic emphasis much higher on their general priority scale of social values than Altiplano peasants. If a comparison is made of women's responses in the two Altiplano areas, the Santiago de Huata peasants (according to index 2 but not index 1 in Table 28) seem to stand higher than the Caquiaviri-Copacabana peasants, in their universalistic approach toward organization of their experience.

Table 28. Preference of women (in percent)^a when seeking advice to buy a house (a) or when electing a Mayor, by area and generation

Type of Preference	Area and Generation					
	La Paz		Caquiaviri – Copacabana		Santiago de Huata	
	Young	Older	Young	Older	Young	Older
1. Preferred advice from expert instead of from a friend or kin or both	38	36	14	18	14	9
2. Would elect a stranger well educated instead of friend or kin less educated	58	65	23	21	37	38
(N1)	(115)	(125)	(29)	(34)	(65)	(53)
(N2)	(113)	(121)	(30)	(34)	(62)	(52)
(UNKNOWN 1)	(8)		(5)		(1)	
(UNKNOWN 2)	(14)		(4)		(5)	

a. Complement to 100 percent refers to women's answers to the other two possibilities. In Santiago de Huata, however, two women answered that they would seek advice from nobody.

Rationality

Two events, illness and rainfall, the first relatively uncontrollable and the second wholly uncontrollable, may importantly affect the lives of the peasants. In an attempt to measure how rational the peasants' reactions are to specific situations related to illness and drought, six questions (11 to 16, Appendix I) were

asked. In Table 29 the answers to four of the questions are presented¹⁴. A free translation of the four questions is: (1) If you were ill, in bed, and unable to get up, to whom would you plead (implying spiritual comfort) for help? (2) Whom would you call upon for a cure (material help)? (3) If you had a (small) farm where you planted potatoes and there was no rain for some time, to whom would you address your plea (spiritual help) for rain? And (4) Do you think that Titiviracocha or Pachamama¹⁵ could bring rain? Even though the first three questions are of the open-ended type, the answers corresponded to seven categories, including other deity, warlock, and neighbor.

As to the ideal help sought in illness, proportionately most of the Santiago de Huata respondents said that they would recur to God (68% of the young and 61% of the older women), but only between 34 and 48 percent of the La Paz and 32 and 35 percent of Caquiaviri-Copacabana respondents declared they would do so. While about 40% of La Paz peasants' daughters said that they would plea for help from a physician, almost none of the Caquiaviri-Copacabana peasants and only 9% of the Santiago de Huata peasants said that they would do so. Very few of the La Paz respondents, some of the Santiago de Huata, (noticeably the older generation, 13%), but a relatively large proportion of the Caquiaviri-Copacabana respondents (16% of the young and 24% of the older women) declared that an Indian healer (curandero) would be their ideal helper in case of illness.

14. Two of the four questions were combined and are presented in a joint percent distribution in ideal help for rain, bottom part of Table 29.

15. Titiviracocha and Pachamama supposedly represent, respectively, the Sun and Mother Earth (Jaimes Freyre, 1964).

Table 29. Ideal and material help sought by women (in percent) in cases of illness or lack of rain, by area and generation

Help sought	Area and Generation					
	La Paz		Caquiaviri – Copacabana		Santiago de Huata	
	Young	Older	Young	Older	Young	Older
1. Ideal help in illness from:	100%	100%	100%	100%	100%	100%
God	34	48	32	35	68 ^a	61
Indian healer	1	2 ^b	16	24 ^b	3	13 ^b
Physician	39	37	3	0	9	9
Kin ^c	26	13	49	41	20	17
(N)	(116)	(127)	(31)	(37)	(65)	(54)
(UNKNOWN)	(5)		(-)		(-)	
2. Material help in illness from:	100%	100%	100%	100%	100%	100%
God	0	1	0	11 ^a	6	4 ^a
Indian healer	6 ^b	11 ^d	51	60	22	46 ^b
Physician	79	79	10	10	37	35
Kin ^c	15	9	39	19	35	15
(N)	(116)	(128)	(31)	(37)	(65)	(54)
(UNKNOWN)	(4)		(-)		(-)	
3. Ideal help for rain from:	100%	100%	100%	100%	100%	100%
God	30	37	13	11	51	53
Other deity	0	1	26	19	15	14
God + other deity	70	62	61	70	34	33
(N)	(111)	(124)	(31)	(37)	(61)	(49)
(UNKNOWN)	(13)		(-)		(9)	

a. Includes one case of other deity.

b. Includes one case of warlock.

c. Includes neighbors, mentioned a few times in all areas.

d. Includes three cases of warlocks.

The answers to the question regarding material help in time of illness referred to God, probably resulting from a misunderstanding of the question by the respondent or an interviewer's mistake. Otherwise the findings seem to support to a certain extent the patterns shown by the respondents' reaction when asked about the ideal help sought. Moreover, the peasants' rationalization on the material help seems to show clearer and more meaningful patterns than when asked about ideal help sought. For example, some of the La Paz women (more of the older, 11%, than the younger, 6%), and a relatively large proportion of the Caquiaviri-Copacabana respondents (once again, more of the older, 60%, than the younger, 51%) said they would recur to an Indian healer (curandero) in order to be cured of illness. As a logical consequence of the findings in respect to the curandero, the physician as a material aid in time of illness is sought by most La Paz women (79%), to a lesser extent by the Santiago women (between 35 and 37 percent), and the least by the Caquiaviri_Coapacabana women (10%).

Regarding the ideal help sought in case of drought, the findings in Table 29 support the view of Osborne (1952: 32-33), previously quoted, that "the Indians...amalgamate the Christian religion of their conquerors with their own; and possibly this study's findings also support Patch's (1961) report of "gradual amalgamation" as characteristic of the general cultural "process" the Bolivian peasant is undergoing. For example, between 60 and 70 percent of La Paz peasants' daughters and Caquiaviri-Copacabana peasants believed that both God and Titiviracocha and Pachamama could help bring rain needed for growing one of their principal means of subsistence. Interestingly about one-half as many

of the Santiago de Huata respondents as those of La Paz and Caquiaviri-Copacabana said they believed in God and at the same time believed in another ancestral deity.

In summary, although on religious matters La Paz peasants' daughters may still hold their ancestors' values, there is a strong indication that on practical matters related to health they may have changed their values toward adaptation of modern means of caring for illness. The Santiago de Huata peasants seem to be in the process of cultural change – slow as it may be, as indicated by the examination in Table 29 – but, the Caquiaviri-Copacabana peasants seem to be the sub-group least in a state of cultural change.

Submissiveness

The belief is common that Aymara women are highly submissive both at the parental and the marital levels. For example, Bouroncle Carreon (1964: 241) states:

In the communal organization it is the men who have the rights and the women the obligations; this is the reason instruction is the preferential patrimony of the boys, leaving the girls relegated to the house and illiteracy.

And Tschopik: (1951: 548) adds:

A woman's first obligation is to her husband; her own family comes second.

Although Tschopik's statement by itself does not seem to indicate that Aymara women's obligations are very different from those in other societies, Jaime Freyre (1964) embellishes the idea perhaps very crudely by stating:

In marriage, the wife resembles a slave...she is at the same level as that of a minor daughter; this is the cause for her having very few rights and many obligations...the daughter seldom speaks directly to her father...to ask from

him something, the daughter uses her mother as an intermediary...(Author's free translation).

Since reproductive performance may be related to the submissive role played by the woman and since changing attitudes may affect the pattern of fertility, the study included four questions (40 to 43; Appendix I) that sought evidence of this submissiveness. Although no clear patterns were shown by the data gathered on how money was spent (questions 40-41), evidence supporting submissiveness of the woman as a real attitude, but more importantly evidence showing a changing attitude toward more equalitarian partnership within the sexual union is apparent from the answers regarding each partner's rights in decisions regarding number of children and place of residence.

As shown in Table 30, a relatively large number of respondents in La Paz and Santiago de Huata (18) did not answer the question as to which of the mates had more right in deciding the number of children a couple should have; but the similarity of the results of that question with those of the question regarding the place of residence can be taken as an indication that the unknown cases probably do not cause a serious bias to the findings on the question about the number of children.

Since a smaller proportion of women in Santiago de Huata (between 21 and 31 percent) than in La Paz and Caquiaviri-Copacabana left the decisions on the number of children and place of residence to the man, the Santiago de Huata peasants can be said to be less submissive than the peasant women in La Paz and Caquiaviri-Copacabana. Moreover, since more than two-thirds of Santiago de Huata respondents (between 69 and 77 percent) said that decisions should be

made by both mates, and since in the other two areas the percent of women in the category “Both” (Table 30) is much smaller than in Santiago de Huata, the conclusion is obvious that Santiago de Huata women take a position of equalitarianism between man and woman to a much greater degree than women of La Paz and Caquiaviri-Copacabana.

Table 30. Mate deciding on the number of children and the place of residence according to respondents (in percent), by area and generation

Mate who decides	Area and Generation					
	La Paz		Caquiaviri – Copacabana		Santiago de Huata	
	Young	Older	Young	Older	Young	Older
1. On the number of children:	100%	100%	100%	100%	100%	100%
Man	40	42	43	57	21	31
Woman	21	13	3	0	2	0
Both	39	45	54	43	77	69
2. On the place of residence:	100%	100%	100%	100%	100%	100%
Man	55	50	59	51	29	35
Woman	9	7	3	3	2	2
Both	36	43	38	46	69	63
(N1)	(106)	(124)	(28)	(37)	(53)	(48)
(N2)	(115)	(131)	(29)	(37)		
(UNKNOWN 1)	(18)		(3)		(18)	
(UNKNOWN 2)	(2)		(2)		(5)	

Of particular interest is the fact that while La Paz peasants' daughters may leave the decision on the place of residence to the man, they seem to be much more concerned with their fertility, much more so than women of the other two areas: 21% of the young women and 13% of the older women in La Paz reserve for themselves the right to decide on the number of children to have; whereas only 9% of the young and 7% of the older women of La Paz reserve for themselves the decision on residence.

In summary, the study's findings confirm that submissiveness among Aymara peasant women exists, but change toward less submissiveness may also be occurring as shown by the equalitarian position taken by the Santiago de Huata women and by the concern about fertility expressed by the La Paz women.

Aspirations

In societies undergoing cultural change new aspirations emerge and old ones may become clearer if not more pressing. In order to evaluate new and changing aspirations held by La Paz peasants' daughters and Altiplano peasants, the respondents were questioned as to aspirations for themselves and aspirations for their first sons and daughters. Most of the questions dealt with rather easily understood alternatives, as for example the following two: (1) Between learning a trade and having a good harvest (or job, in the case of La Paz respondents), which would you prefer? (2) For your first son, would you prefer that he become a farmer or that he work in La Paz? The answers to these two questions are presented in Table 31.

Table 31. Skill or job, farm or city work preferences for herself and first son of peasant women (in percent), by area and generation

Preference	Area and Generation					
	La Paz		Caquiaviri – Copacabana		Santiago de Huata	
	Young	Older	Young	Older	Young	Older
1. For respondent:	100%	100%	100%	100%	100%	100%
Skill	66	49	29	5	20	15
Good Harvest (job)	24	29	45	46	43	57
Both	10	22	26	49	37	28
2. For first son:	100%	99% ^a	100%	100%	100%	100%
Farmer	4	1	20	19	20	20
City worker	96	98	80	81	80	80
(N1)	(117)	(130)	(31)	(37)	(65)	(53)
(N2)	(108)	(130)	(30)	(37)	(46)	(44)
(UNKNOWN 1)	(1)		(-)		(1)	
(UNKNOWN 2)	(10)		(1)		(29) ^b	

a. Excludes one case (one percent) whose answer was neither.

b. Single women or women who did not have a son did not place themselves in the situation of having a son. The question probably needs to be re-phrased.

The finding that a greater proportion of respondents in La Paz (66% of the young; 49% of the older women) expressed preference for learning a trade in comparison to much smaller proportions in the Caquiaviri-Copacabana area (29% of the young; 5% of the older women) indicates that La Paz peasants' daughters are more future-oriented and place greater value on becoming skillful.

The fact that some women – noticeably a greater proportion among the Altiplano peasants of the two areas than among the La Paz peasants' daughters – chose the ambivalent answer of “Both”, may be argued to indicate more indecision than real desire to have both skill and a good job (or a good harvest).

There was little difference among peasants of both of the Altiplano areas regarding their aspirations for themselves and their aspirations for their first sons. That is, a similar proportion (about 20%) in both areas would have their first son become (or stay as) a farmer.

That the Altiplano peasants of Caquiaviri-Copacabana and Santiago de Huata place a higher value on city work than on farm work – 80% of women in both areas wanted their sons to become city workers – seems to be supported by the fact that almost all women born in the city (La Paz) would not want their sons to go back to work as farmers.

Summary

The cross-analysis of data gathered for La Paz peasants' daughters and for Altiplano peasants of Caquiaviri-Copacabana and Santiago de Huata areas points to clear patterns of differences among the areas. This suggests that, in effect, cultural change is taking place among Aymara peasants. But, as expected, a notion of the rate of change obtained from the cross-analysis shows that while peasants' daughters of La Paz are changing at a relatively rapid rate, the Altiplano peasants of Santiago de Huata are changing at a slower rate and the Caquiaviri-Copacabana peasants are changing at the slowest rate. But even though their manner of dress (Table 25) and their religious beliefs (Table 29),

point to traditionalism, the peasant women of the Caquiaviri-Copacabana area, particularly the young ones, nevertheless are actually in the process of cultural change. This fact is indicated by a number of the survey's findings.

The proportions of illiterates is 16% among the young women of the Caquiaviri-Copacabana area (Table 23) against the national average of about 69% in 1950 (Chapter I, p.7); the proportion of women who speak Spanish when addressed in Spanish is about 50% (Table 24); the proportion who would choose to vote for a stranger with good education for mayor instead of a less educated relative is about 20% (Table 28); the proportion who would choose a physician as material help in illness (Table 29) is 10%; and finally the proportion aspiring to learn a trade instead of having a good harvest is 29% of young women (Table 31).

CHAPTER VI

THE TESTING OF THE HYPOTHESES

The four propositions to be tested are:

1. The greater the cultural change of the peasant women, the lesser the incidence of premarital sexual intercourse and of trial marriage.
2. The greater the cultural change of the peasant women, the lower the incidence of the first sexual unions of women at risk of conception.
3. The lesser the incidence of premarital sexual intercourse, the lesser the incidence of marital disunion.
4. The higher the incidence of formal unions (legal and religious), the shorter the amount of time lost at risk for sexual intercourse.

A critical examination of the empirical evidence collected in the Bolivian Altiplano and the city of La Paz will aid to attempt to verify the truthfulness or falsity of the four assumptions offered above.

In Chapter V, Cultural Change, it was established that acculturation of the peasant had been the greatest among the La Paz daughters of Aymara peasant women, that Santiago de Huata peasant women were within a midpoint of acculturation between daughters of peasant women of La Paz and peasant women of Caquiaviri-Copacabana, and that peasant women of Caquiaviri-Copacabana were in the lowest phase of acculturation among women in these three areas. The following statistical analysis will be made placing the

information in Tables 32 to 40 in a sequence according to these three phases of acculturation.

The Statistical Method

The sample size of La Paz peasants' daughters' respondents may be considered sufficiently large for more than a simple statistical analysis. However, since the sample of the Altiplano peasant respondents has been divided into the Santiago de Huata respondents' sub-group and the Caquiaviri-Copacabana respondents' sub-group, only a simple method of analyzing percent distributions and arithmetic means will be used. The operative examination will be undertaken by discussing at most two variables at a time to begin the discussion. The Altiplano peasants' sample has been subdivided because being the interest of human reproductive performance as the dependent variable, the Santiago de Huata women's fertility was found (Chapter IV) manifestly different from the fertility of women of Caquiaviri-Copacabana.

Although the median is more desirable to use as a measure of central tendency of a distribution of events than the arithmetic mean because it is affected less by extreme values, the arithmetic means have been used in this analysis also in order to facilitate comparison with previous and subsequent findings. The use of arithmetic means, however, requires great caution in the interpretation of results of findings, particularly when the sample is small as are the sub-samples for Santiago de Huata and Caquiaviri-Copacabana peasant respondents.

Since the interest in this investigation is placed on the patterns rather than the exact level of the distribution of events, some laxity in the use of arithmetic means is perhaps permissible. Unless great statistical variability around arithmetic means is found, the use of arithmetic means to examine patterns in the distribution of events cannot seriously affect the validity of the inferences to be drawn.

The method of analysis in this chapter is the cross-sectional examination followed to study Cultural Change in Chapter V. This method is suitable for linking the conditioning variable of cultural change to the dependent variable of human fertility performance and it is appropriate for studying change since human fertility data distributions, rather than depicting an outcome at a point in time, are results of events occurring over a period of time.

The evidence examined in Chapter V demonstrates that cultural change is taking place among Bolivian Aymara peasants. The hypothesis, therefore, will be tested to determine if human fertility varies along with cultural change. The veracity or falsities of the four sub-hypotheses are applied as factors influencing the relationship between human fertility and cultural change.

Trial Marriage and Premarital Sexual Intercourse

A census-type examination of the respondent's distribution by current civil status (Table 32) reveals about trial marriage nothing more than the fact it exists among Bolivian peasants-as it was learned from the ethnographic empirical evidence examined in previous chapters. The few cases of current trial marriage involved in the percent distribution on Table 32 (three cases in La Paz; two cases

in Santiago de Huata, and one case in Caquiaviri-Copacabana), are but only a symbol that “the work ability, responsibility, and faithfulness of the girl, and to a lesser extent the qualities of the young man are (still today) put to the test” (Price, 1965: 320) among peasants’ daughters in La Paz and among Altiplano peasant women in Santiago de Huata and Caquiaviri-Copacabana.

Table 32. Current Civil Status of all Women (in percent), by Area and Generation

Current Civil Status	Area and Generation					
	La Paz		Santiago de Huata		Caquiaviri - Copacabana	
	Young	Older	Young	Older	Young	Older
TOTAL	100%	100%	100%	100%	100%	100%
Never in Union	48	5	28	2	42	5
Consensual Sexual Union	11	13	26	43	13	27
Trial Marriage	1	2	3	0	0	3
Civil Marriage	12	18	15	24	3	30
Civil and Religious Marriage	14	46	23	24	32	30
Separated	14	7	5	2	10	3
Divorced	0	1	0	0	0	0
Widow from Sexual Union	0	2	0	3	0	2
Widow from Marriage	0	6	0	2	0	0
(N)	(117)	(131)	(65)	(54)	(31)	(37)

A more meaningful insight is acquired when this survey's information is examined on the basis of the nature of the first sexual union. In Table 33¹, in addition that the information is based on a greater number of cases of trial marriages than in Table 32, the proportions of women who initiated their mated lives as trial marriages (Table 33) are shown to be greater than the proportions of women currently in a trial marriage (Table 32).

Table 33. Type of the First Sexual Union of all Women (in percent), by Area and Generation

Type of the First Sexual Union	Area and Generation					
	La Paz		Santiago de Huata		Caquiaviri - Copacabana	
	Young	Older	Young	Older	Young	Older
TOTAL	100%	100%	100%	100%	100%	100%
Never in Union	50	6	28	2	46	7
Consensual Sexual Union	26	36	48	76	18	53
Trial Marriage	4	8	5	0	7	11
Civil Marriage	11	19	6	12	4	18
Civil and Religious Marriage	9	31	13	10	25	11
(N)	(113)	(118)	(64)	(50)	(28)	(28)
(Unknown)	(17)		(5)		(12)	

-
1. In table 33 two cases in La Paz and one case in Caquiaviri-Copacabana of older women who began their second sexual union as a trial marriage are not included. No other respondent declared a second or third union as a trial marriage. No fourth union was reported in any of the three areas.

The smaller proportions (Table 32) of women who declared their current status as a trial marriage may be due to one of three factors: 1. the woman may have had her trial marriage formalized into a civil or a civil-religious marriage. 2. the partners may have decided that the trial period was terminated and the woman declared her current status as a consensual sexual union. 3. the woman may have separated from her partner mate and entered into another mating relationship or remained single. Data in Tables 32 and 33 do not allow having a determination of which of these three factors was the prevalent. The information in Table 32 does not allow making comparison of proportions for testing of the hypothesis that the greater the cultural change of the peasant women, the lesser the incidence of trial marriages. The obstacle is the few cases of trial marriage reported. But since the data in Table 33 are not limited by small sample numbers, a suggestion of the hypothesis' validity can be gained by the information shown in it.

If it is admitted-as it was inferred in Chapter V-that La Paz peasants' daughters are at a highest level of acculturation and that Caquiaviri-Copacabana peasant women are in the lowest level of acculturation, then the hypothesis that the greater the cultural change the lesser the incidence of trial marriages should be validated if the smallest incidence of trial marriages were found in La Paz and the greatest incidence in Caquiaviri-Copacabana.

Although the individual differences among proportions of trial marriage for women within the young generation are not great (Table 33), the trend from 4% of women reporting their first sexual union as trial marriages in La Paz to 5% in Santiago de Huata and to 7% in Caquiaviri-Copacabana, the progression shows

that the hypothesis is validated. Within the older generation the complete progression is broken by the absence of cases reported as trial marriages among Santiago de Huata older peasant women. But the progression of the proportions from 8% to 11% for La Paz and Caquaviri-Copacabana reporting peasant women, respectively, indicates a confirmation that the hypothesis is valid also for older peasant women. In other words, the data show an incidence of trial marriages (11%) for the least acculturated peasant older women (Caquiaviri-Copacabana) greater than for the most acculturated older daughters of peasant women of La Paz (8%). The absence of cases for older peasant women of Santiago de Huata may possibly be caused by factors other than acculturation. Hindrance factors may include the tendency to declare a union as a consensual sexual union instead of a trial marriage and the tendency of older women- who formalized their unions or who terminated the trial marriage- to report their current sexual status instead of their initial sexual status.

For trial marriage to affect human fertility negatively, it would be required that either that sexual union begun as trial marriages had, for example, mean fertility lower than unions begun as civil marriages, or that unions begun as trial marriages ended in long term separations, or both. Furthermore, since the hypothesis is linked to cultural change as a conditioning variable, the negative effect on fertility would have been the greatest among the least acculturated peasant women.

According to the fertility ratio of the number of live births per 100 women at risk of conception (Table 34), the pattern shown by the ratios clearly supports the hypothesis that the greater the cultural change, the lowest the human fertility outcome of the most acculturated women who begun their sexual union as a trial

marriage. In effect, comparing the fertility ratios (Table 34) for the consensual sexual unions against those ratios for the trial marriages: 137 and 120, 84 and 33, and 240 and 50 for the young generations in La Paz, Santiago de Huata, and Caquiaviri-Copacabana, respectively, it is clear that the fertility outcome is for the

Table 34. Number of Live births per 100 Women at Risk of Conception^a, by Area and Generation: A Comparative Fertility Outcome by Type of the First Sexual Union

Type of the First Sexual Union	Area and Generation					
	La Paz		Santiago de Huata		Caquiaviri - Copacabana	
	Young	Older	Young	Older	Young	Older
All Women ^a	133	383	77	249	168	374
Never in Union	18	0	60	-	0	-
Consensual Sexual Union	137	365	84	222	240	440
Trial Marriage	120	344	33 ^c	-	50 ^b	267 ^c
Civil Marriage	175	327	0	283	0	400
Civil and Religious Marriage	200	467	75	360	162	0
(Unknown)	(150)	(393)	(0)	(0)	(0)	(300)

a. Women who declared having had either sexual intercourse or at least one sexual union. Mean fertility based on less than five women is given in the table as zero (0), except as indicated.

b. Estimate based on two cases only.

c. Estimate based on three cases only.

consensual sexual unions greater than for the trial marriages. The comparison of the fertility ratios for the older generation shows a similar outcome relationship: 365 against 344; 222 against 0, and 440 against 267. The hypothesis is confirmed by the comparison of ratios for the civil and the civil-religious marriages

against the trial marriages. Furthermore, the arithmetic difference of ratios for consensual unions minus ratios for trial marriages is the least for the most acculturated daughters of peasant women of La Paz ($137-120=17$) for the young generation and ($365-344=21$) for the old generation in comparison to the greatest arithmetic difference for the least acculturated Altiplano peasant women of Caquiaviri-Copacabana ($240-50=190$) for the young generation and ($440-267=173$) for the older generation.

Because the comparison of the percent distributions by current civil status (Table 32) and the initial type of sexual union (Table 33) gives only some support to the view that trial marriages may have ended in consensual sexual unions or marriages, the possibility that trial marriages may have actually ended in separations has not been overruled. Since fertility can be affected by the dissolution of trial marriages, and since the notion of trial implies a brittle type of union, it is necessary to ascertain how trial marriages actually ended. This test is particularly important due to the fact that some writers reviewed earlier (Chapter II) seem to agree with Price's (1961: 320) view about the brittleness of trial marriage.

Although great variations of the percentages in Table 35 may be expected due to the small size of the sample, it may be useful to look for inter-area or inter-generation patterns in the outcome of trial marriage.

All (100%) Caquiaviri-Copacabana young women and most (75%) of the older women of the same area who begun their mated lives in trial marriages ended those unions by separation (one of the women, however, is currently in her third sexual union – but not civil or religious marriage – after two trial marriages).

That is, the least acculturated Caquiaviri-Copacabana peasant women ended their trial marriages more than the most acculturated La Paz peasants' daughters (40 against 100 percent of the young women of Caquiaviri-Copacabana; and 27 against 75 percent of the older women of Caquiaviri-Copacabana).

The view that more acculturated peasants tend to formalize their unions that began as trial marriages, as opposed to the least acculturated, is supported by findings in Table 35. 40% of young women and 55% of older women of La Paz who began their mated lives in trial marriages against none in the other areas, continued living with the same men after formalizing their unions as consensual sexual unions (4 cases), civil marriages (2 cases), and civil-religious marriages (2 cases).

Table 35. Type of Outcome of Sexual Unions (in percent) begun as Trial Marriage, by Area and Generation

Type of Outcome	Area and Generation					
	La Paz		Santiago de Huata		Caquiaviri - Copacabana	
	Young	Older	Young	Older	Young	Older
TOTAL	100%	100%	100%	100%	100%	-
Trial Marriage	20	18	67	-	-	25
Other Mating Relationship ^a	40	55	-	-	-	-
Separation	40	27	33	-	100	75
(N)	(5)	(11) ^b	(3)	(-)	(2)	(4) ^c

a. Includes Consensual Sexual Union, Civil Marriage, and Civil-Religious Marriage.

b. Includes two cases of women whose second union began as a trail marriage.

c. Includes one case (counted twice) of a woman whose first and second unions began as trial marriages.

As to the causes of separation, four women of La Paz attributed the separation a trial period that did not succeed; and one woman gave the cause as an abortion, unprovoked, which disgusted the man. In the Caquiaviri-Copacabana area, one case of dissolution of the trial marriage was caused by the death of the man; one case was alleged to be attributed to sterility of the woman (although this same woman had five live births in her second sexual union); and three cases of trial marriage ended because the men left their mates for other women. In Santiago de Huata, the only case that terminated in a separation was said to have been dissolved because of maladjustment of the partners and economic hardship.

Finally, in La Paz and Caquiaviri-Copacabana, the trial marriages were terminated on an average of about two and one half years; and the one case in Santiago de Huata ended after one year and one half years.

In summary, some preliminary evidence indicates that trial marriage is a cause of a lower fertility of Bolivian Aymara peasants (Table 34). The negative effect on fertility seems to be greatest among the least acculturated peasants. Some evidence also points to a greater rate of dissolution of trial marriages among the least acculturated than among the most acculturated peasants. Although the absolute numbers examined in Table 35 are small, and they form the basis for the proportions in Table 34, certain inferences may be drawn. Since for the purpose of testing the hypothesis the exact levels of the proportions are not sought to be known, the patterns examined seem to clearly indicate that cultural change and incidence of trial marriage (Table 33) on the one hand, and incidence of trial marriage and fertility, on the other, are negatively associated (Table 34).

Premarital sexual intercourse, particularly when not followed by a sexual union, may influence fertility in a negative direction by predisposing the failure of becoming a sexual union or by making it more difficult for a woman to enter a sexual union. If new or stricter norms related to premarital intercourse are adopted as a consequence of or parallel with cultural change, then the patterns of fertility should also be expected to change toward a higher fertility outcome.

The percent of women reporting as having had sexual intercourse before a sexual union (Table 36) entirely contradicts the hypothesis that the greater the cultural change of the peasant women, the lesser the incidence of premarital sexual intercourse. In fact, the findings indicate that the most acculturated daughters of peasant women of La Paz have had the highest incidence (28 and 18 percent, Table 36) of premarital sexual intercourse while the least acculturated

Table 36. Percent of all Women having or not having had Sexual Intercourse before a Sexual Union, by Area and Generation

Sexual Intercourse before a Sexual Union	Area and Generation					
	La Paz		Santiago de Huata		Caquiaviri - Copacabana	
	Young	Older	Young	Older	Young	Older
TOTAL	100%	100%	100%	100%	100%	100%
Yes	28	18	14	9	3	3
No	72	82	86	91	97	97
(N)	(108)	(128)	(62)	(54)	(30)	(35)
(Unknown)	(12)		(3)		(3)	

peasant women of Caquiaviri-Copacabana have had the lowest incidence of premarital intercourse: 3% for the young generation and also 3% for the older generation.

The Santiago de Huata peasants fall in between the highest and lowest incidence (14% and 9%). In other words, the incidence of sexual intercourse before a sexual union is positively – but not negatively, as hypothesized – associated with acculturation of the Bolivian Aymara peasants.

A relevant consideration is the effect on fertility of sexual intercourse before a sexual union. In Table 37 it is shown that the mean fertility² of both young and older women of La Paz (73 against 180 and 270 against 411) and older women of Santiago de Huata (160 against 258) is lower for those women who had sexual intercourse before a sexual union than for those who did not. That young women of Santiago de Huata who had sexual intercourse before sexual union show somewhat higher fertility (89) than those who did not (76) may be due, at least in part, to the fact that young women of Santiago de Huata who remained single gave birth to a live birth in greater proportion (three among four) than young women of La Paz (two among thirteen). Furthermore, in La Paz one of the thirteen single women declared she had an abortion (of unknown nature)

2. The small number of cases (less than 5) of Caquiaviri-Copacabana women declaring having had sexual intercourse before a sexual union prevents the inclusion of this area's women in any comparative statements on fertility outcome. Although the Santiago de Huata arithmetic means of fertility are based on 9 and 5 cases for the young and older generations, respectively, the patterns of fertility outcome of these women – who had sexual intercourse before sexual unions - may safely be compared to the patterns shown by the women of La Paz. The arithmetic means of fertility for La Paz young and older generations of women – who declared having had sexual intercourse before a sexual union - are based on 30 and 23 cases, respectively.

Table 37. Mean number of Live births per 100 Women at risk of Conception^a, by Area and Generation: A comparative Fertility Outcome by having or not having had Sexual Intercourse before a Sexual Union

Sexual Intercourse before a Sexual Union	Area and Generation					
	La Paz		Santiago de Huata		Caquiaviri - Copacabana	
	Young	Older	Young	Older	Young	Older
All Women	133	383	77	249	168	374
Yes	73	270	89	160	0	0
No	180	411	76	258	176	378
(Unknown)	(0)	(333)	(0)	(-)	(0)	(0)

a. Women who declared having had either sexual intercourse or at least one sexual union. Mean fertility based on less than five cases (women) is given in the table as zero (0).

and another single woman declared she had a stillbirth (due to mother's accidental fall). On the other hand, in Santiago de Huata all single young women who became pregnant as a result of sexual intercourse before a sexual union gave birth to a live birth. In other words, even though a proportion of women in Santiago de Huata was greater than in La Paz (56% against 37%, respectively) of all who remained single after their premarital intercourse, all those who became pregnant in Santiago de Huata became mothers; while in La Paz only one of the three became a mother and the other two had either an abortion or a stillbirth.

The lower mean fertility of young La Paz women than of Santiago de Huata women who had sexual intercourse before a sexual union may also be due, at least partially, to the greater rate of dissolution of unions (Table 35) in La

Paz (40%) than in Santiago de Huata (33%). However, this greater dissolution rate cannot be held responsible for the lower mean fertility of older Santiago de Huata women (no cases of separation) in comparison to the greater fertility of older women of La Paz, even though the dissolution rate is 27% (Table 35) among these older La Paz women.

In summary, the hypothesis that the greater the cultural change the lesser the incidence of premarital sexual intercourse is invalidated by the evidence examined in Table 36. On the other hand, data on the older women (Table 37) suggests that the greater the cultural change the lesser the negative impact on the mean fertility of older La Paz women – with a mean fertility of 270 live births per 100 women having had sexual intercourse before a sexual union – in comparison to Santiago de Huata women whose mean fertility is only 160 live births per 100 women having had premarital sexual intercourse. It is worth noting that older La Paz women having had premarital sexual intercourse (18%, Table 36) show greater mean fertility (383, Table 34) than less acculturated older women of Santiago de Huata (77, Table 34) despite the fact that the rate of dissolution of La Paz women is greater (27% Table 35) than that of Santiago de Huata women who had no dissolution of unions at all. It is also worth noting that although the Santiago de Huata mean fertility has been adjusted³ for the assumed unreported mortality effect of .30 live births among young women and .65 live births among older women, the tentative inferences drawn on premarital sexual intercourse still stand even without adjustment. Finally, the evidence

3. Reasons for and method of this adjustment are given in Chapter IV.

in Table 36 of greater incidence of sexual permissiveness among La Paz daughters of peasant women than among Santiago de Huata and Caquiaviri-Copacabana peasant women may perhaps suggest that Tamayo⁴ was not too far wrong when he said that “The Indian becomes demoralized and corrupt through contact with the white,” particularly if consideration is given to Osborne’s (1952:212) description of the peasant’s “family life (as) ... strict and (within which) vice is virtually unknown.”

Age at First Sexual Union

If the term sexual intercourse before a sexual union as used here were equated with Davis and Blake’s (1956:227) term of “Premarital Unions”, then, Bolivian peasants are an exception to their statement that:

With reference to premarital unions, there is every evidence that in the many societies where these are permitted they are, as a rule, high unstable, amounting in many cases to adolescent promiscuity (Opus cited, P 227).

Bolivian Peasants may constitute an exception to the rule in that most women who declared having had sexual intercourse before a sexual union had subsequently engaged in a sexual union (consensual sexual union, civil marriage, civil-religious marriage, trial marriage) with the same man with whom they had their premarital intercourse: 56% of young women and 78% of older women of La Paz and 44% of young women and 80% of older women of Santiago de Huata had such a subsequent union. Furthermore, the mean number of years lived in sexual union by women who had premarital intercourse

4. As quoted by W. Osborne in his book *Indians of the Andes: Aymaras and Qhechuas*, Harvard University Press, Cambridge, Mass. 1952:211.

does point to some relative stability of these unions. The mean number of years lived by young and older women of La Paz was about three and seven years, respectively; and the mean number of Santiago de Huata women who lived in sexual union was about two and eight years for young and older women, respectively (Table 40). Since trial marriage and cultural change seem to be negatively associated and premarital intercourse and cultural change are apparently positively associated, the age at first sexual union becomes an important subject for investigation. It is important because of the effect a changing pattern of age at first sexual union could have on fertility if cultural change were occurring. Furthermore, the decline of trial marriage and the increase of premarital sexual intercourse among acculturating Bolivian peasant women must be examined as possible opposing forces acting toward a changing pattern of the age at first sexual union.

The assumption that trial marriage⁵ and premarital sexual intercourse are events that take place at an age earlier than those of consensual sexual union, civil marriage, and civil religious marriage is supported by the following findings:

Mean age at premarital sexual intercourse: La Paz: 16.6; Santiago de Huata: 18.7

Mean age at first sexual consensual union: La Paz: 18.2; Santiago de Huata: 19.1

-
5. All trial marriages except two of La Paz peasant's daughters (Table 33) occurred as a first sexual union. Since at the end of a trial marriage either it is terminated or becomes a consensual union or a civil or a civil-religious marriage, it would seem safe to say that the age at trial marriage would be expected to be younger than those of the other three types of sexual unions.

The decline of either trial marriage or premarital sexual intercourse would be expected to lead to a younger age at first consensual sexual union since most sexual unions may become consensual, or civil marriage, or civil-religious marriage. Unions of the last mentioned types may become the accepted norm among the acculturating peasant women who were adapting their experiences to the value matrix of the other members of the society.

The comparison of the mean age at first sexual union (Table 38) among areas and generations is indicative that these mean ages may not statistically be

Table 38. Age at First Sexual Union of Women (in percent) at Risk of Conception^a, by Area and Generation

Age at First Sexual Union	Area and Generation					
	La Paz		Santiago de Huata		Caquiaviri - Copacabana	
	Young	Older	Young	Older	Young	Older
TOTAL	100%	100%	100%	100%	100%	100%
13 – 19 years	89	54	76	58	94	63
20 – 24 years	11	39	24	36	6	31
25 – 34 years	-	7 ^b	-	6	-	6
(N)	(61)	(121)	(46)	(52)	(18)	(35)
(Unknown)	(11)	(5)	(6)	(1)	(1)	(-)
MEAN AGE	17.2	19.6	17.9	19.5	16.9	19.2

a. Women who declared having had either sexual Intercourse or at least one Sexual Union.

b. All cases are of age 25-29 years.

significantly different. These means for the young generations are 17.2, 17.9 and 16.9 years old for women of La Paz, Santiago de Huata and Caquiaviri-Copacabana, respectively. And for the older generations the mean ages are 19.6, 19.5, and 19.2 for areas in the same sequence as above.

The examination of the proportions of peasant women at risk of conception of age 13-19 years old (Table 38) shows a clear picture of a trend of the proportions for peasant women of the older generation. Data in Table 38, in fact, reveals the trend from 63 to 58 to 54 percent of the proportions for women at risk of conception in Caquiaviri-Copacabana, Santiago de Huata, and La Paz, respectively. This trend shows a decline in the age at first sexual union of women at risk of conception, probably, influenced by acculturation. The trend of declining the age at first sexual union is confirmed by the evidence depicted by the proportions (94 to 89 percent) for the young generations of Caquiaviri-Copacabana and La Paz respectively.

Within the young generation (15-24 years old at the time of being interviewed, having had their first sexual union at age 13-19 years old when at risk of conception), the incidence of sexual unions was lower for La Paz young daughters of peasant women (89%) than for Caquiaviri-Copacabana peasant women (94 percent, Table 38). That is the most acculturated young women had an incidence of sexual unions smaller than those of the least acculturated peasant women. Similar comparative incidence was shown by the older generation (25-34 years old) of La Paz (54%) and Caquiaviri-Copacabana (63%).

The subjective choosing of informants by the interviewers, among other factors, might have caused not to include enough cases at the age of first sexual union of young women in the interval of 20-24 years old (1 case in Caquiaviri-Copacabana and 7 cases in La Paz, Table 38).

It is interesting to note that within the older generation the difference in the proportions (63-54, Table 38) is 9% while within the young generation (94-89) is 5%. The interpretation of these differences in the proportions is that the incidence of sexual unions of older peasant women at risk of conception is declining at a rate faster than that incidence of the young generation of daughters of peasant women.

Marital Disunion

Marital disunion is one of the Davis and Blake's "sexual intercourse variables (1956:212). Before discussing specifically marital disunion, it is of interest to examine two sexual intercourse variables, namely, the proportion of women never entering into a sexual union and the proportion of women at their age of entry into their first sexual union.

The proportions of Bolivian older peasant women never in union (Table 32: 5%, 2%, and 5%) seem compatible with those mentioned by Davis and Blake (1956: 219): "women never marrying by the end of the reproductive span ... in Ceylon in 1946, 3.4%; and in Malaya in 1947, 3.3%".

The data in Table 32 for young peasant women never in union in La Paz (48%) and in Caquiaviri-Copacabana (42%) might be considered possibly rather high. No comparable data with other peasant societies are available at present.

The comparative low proportion (Table 32: 28 percent) of peasant young women never in union in Santiago de Huata may suggest that some of the women preferred to engage in a consensual sexual union (Table 33: 48%) rather than becoming single.

It is interesting to find out that young peasant women never in union (Table 34) had nevertheless a rate of 60 live births per 100 women in Santiago de Huata and 18 live births per 100 women in La Paz.

Would these findings of illegitimate human reproduction among the most acculturated women (La Paz) and among the women to some degree acculturated (Santiago de Huata) and the finding of none illegitimacy among the least acculturated women (Caquiaviri-Copacabana confirm the Tamayo statement (Osborne, 1952: 211) that the peasant “Indian becomes demoralized and corrupt through contact with the white”?

The answer may only be found in a illegitimacy matter purposeful study on the illegitimacy matter and on the implication that illegitimacy within young peasant women might have on the fertility of the whole statistical universe of the Bolivian Aymara and perhaps also on the Quechua peasant populations.

In Santiago de Huata the young women rate of 77 live births per 100 women (Table 34) is the lowest among the three areas. On the other hand, these young women of Santiago de Huata had the largest proportion (Table 33: 48%) of consensual sexual unions at their first sexual union. Furthermore, these young women had a conspicuously high illegitimacy rate of live births per 100 women (Table 34: 60). In conclusion, among young women of Santiago de Huata, at

midpoint of acculturation within the three areas, there was the finding of the lowest fertility (77 LB/100 w, Table 34) in spite of their largest proportion of women at first consensual sexual union (48%, Table 33) and in spite of a comparatively rather high rate of illegitimacy within young women never in a sexual union (Table 34, 60 LB/100w.)

The examination of findings for young peasant women of Santiago de Huata having had premarital sexual intercourse (Table 36:14 percent) and a mean age of 17.9 years old (Table 38) higher than the means ages in La Paz (17.2) and in Caquiaviri-Copacabana (16.9) may indicate that having had premarital sexual intercourse at an older age may, at least in part, be a factor influencing a low fertility (77 live births per 100 women) at risk of conception for Santiago de Huata young generation of peasant women (Table 34).

Marital disunion⁶, as a sexual intercourse variable, covers in this investigation, separation (including desertion), divorce and widowhood.

A pattern of widowhood seems to be depicted by data in Table 32. That is, widowhood from both sexual union and marriage (taken together) is positively associated with cultural change. It cannot, at this time, be determined why the incidence of widowhood would be greater among women that lived in a more acculturated environment. These findings, for widowhood in La Paz (8%) and the smallest proportion among the least acculturated women of Caquiaviri-Copacabana

6. See Graph 1, Chapter II, page 14

(2%) suggest that further research on widowhood among peasant Aymara women may be necessary⁷. It is worth to note that the intention in this investigation did not include the cultural change to be related to the incidence of widowhood.

An indication that the age of the male partner might have at least some influence on widowhood was given by the finding that in La Paz, 52% of the 25-34 year old women were currently in a sexual union⁸ with men about 5 years their senior⁹, and women of age 25-34 years old in Santiago de Huata and Caquiaviri-Copacabana, who were in a sexual union had male partners 5 years their senior, but the proportions of women currently in union were smaller.

Divorce is not a significant factor even among the most acculturated daughters of peasant women of La Paz (1%, Table 32). Separation, however, is shown comparatively to be much larger and that fact may induce to investigate its impact on the fertility of Bolivian Aymara peasant.

Marital disunion resulting from separation of the sexual partners is among the most acculturated daughters of peasant women of La Paz greater than the separation among peasant women less acculturated living in the Altiplano areas of Santiago de Huata and Caquiaviri-Copacabana. The proportion (Table 32) of

-
7. Santiago de Huata women, at a midpoint of acculturation, show an intermediate proportion of widowhood (5 percent).
 8. Actually, the tabulations made by age of the men included partners who were dead but not currently living with female partners at the time of their death.
 9. The age of the men partners was found unreliable. Many women did not know their mates' age, and their guesses were believed to lean toward an old age.

women separated in Santiago de Huata (Young, 5% and older, 2%) is shown to be lower than the proportion of women separated in La Paz (Young, 14% and older, 7%). Separation among the least acculturated peasant women in Caquiaviri-Copacabana (Young, 10%, and older, 3%) appears to be lower than the separation for young women in La Paz, and similar to the separation among older peasant women in Santiago de Huata. From these data it may be inferred that acculturation is possibly a factor toward causing instability of sexual unions, particularly among young peasant women.

It is clear that the least acculturated separated older women of Santiago de Huata and Caquiaviri-Copacabana (Table 32: 2 and 3 percent, respectively) show the least incidence of separation in contrast to La Paz most acculturated women who exhibit a 7% separation¹⁰. A trend from low to high separation is also clear for young more acculturated women of Santiago de Huata (5%) to young most acculturated women of La Paz, 14%). A trend from low to high for women having had premarital sexual intercourse (Table 36) is clear if comparison of proportions is made between Caquiaviri-Copacabana and La Paz findings: 3 and 3 percent against 28 and 18 percent, respectively.

From the joint analysis of culture, sexual separation and premarital sexual intercourse, a test can be made of the third hypothesis of this investigation: the

10. Would the proportion (Table 32: 10 percent) of sexual separation among young peasant women in Caquiaviri-Copacabana be an aberrant statistic or a true fact? The answer could be found only in a future investigation.

lesser the incidence of premarital sexual intercourse the lesser the incidence of marital disunion.

If the datum of sexual separation among young women in Caquiaviri-Copacabana (Table 32: 10 percent) is disregarded as probably a spurious one, the least incidence of sexual intercourse before sexual union (Table 36: 3 percent) among older women of Caquiaviri-Copacabana is then positively correlated with the least proportion of separation among older women in Caquiaviri-Copacabana (Table 32: 3 percent). In other words, the hypothesis of the lesser the incidence of premarital sexual intercourse, the lesser the incidence of marital disunion is validated.

Since among the most acculturated women the largest incidence of marital separation (Table 32: 14 and 7 percent) and the largest incidence of premarital intercourse (Table 36: 28 and 18 percent) are positively associated and since among the least acculturated the least incidence of marital separation (Table 32: 3% for Caquiaviri-Copacabana)¹¹ and 2% for Santiago de Huata older women¹² and the least incidence of premarital intercourse (Table 36: 3 and 3 percent for young and older women in Caquiaviri-Copacabana) are also positively associated, then it may be inferred that acculturation is operating toward instability of the conjugal union possibly influenced by the increasing

11. The exception for possibly being a spurious datum (10%) for young peasant women of Caquiaviri-Copacabana has been noted before.

12. The differential (Table 32) between these rates possibly is not great to invalidate the inference drawn in respect to the least incidence of marital disunion.

incidence of premarital sexual intercourse. If these relationships should continue to occur, it may be expected that the fertility of daughters of peasant women of La Paz would be continuing to be negatively impacted.

Formal Unions

To test the hypothesis on the incidence of formal unions (legal and religious), an index has been constructed to relate the formal unions of civil and of civil- religious marriage with the incidence of informal unions of trial marriage and consensual union. The ratio FORMAL UNIONS/INFORMAL UNIONS gives the number of times formal unions occur in respect to informal unions. For example, since among young women of La Paz there were 30 cases of formal unions currently mated (16 cases by civil-religious, and 14 cases by civil marriage) and 14 cases of currently informal unions (1 case in trial marriage, and 13 cases in consensual union), the ratio $30/14 = 2.1$ indicates the number of formal unions per informal unions currently prevalent among young women of La Paz. The ratios calculated are:

Ratio	Area and Generation					
	La Paz		Santiago de Huata		Caquiaviri-Copacabana	
	Young	Older	Young	Older	Young	Older
FU / IU	2.1	4.2	1.3	1.1	2.8	2.0

These ratios point to three important probable findings.

First, young peasant women of both Altiplano areas are tending toward formalization of their unions to a greater extent than older women. For example, the fact that there are more formal unions per informal union (2.8) among young women than among older women (2.0) of Caquiaviri-Copacabana is an indication that young women either had begun their unions as formal ones or had formalized their unions to a greater extent than the older women.

Second, a relatively high ratio (4.2) of older women of daughters of peasant women of La Paz suggests that exposure to the values and norms of the other members of the society may have been a cause for adoption of those norms and values.

Third, before examining the broad effect of acculturation among the three areas, it is in order to mention the probable pressure exerted by the Catholic Church¹³ on the minds and behaviors of the peasant women of Copacabana. The ratios for marriage formalization and formal unions (2.8 and 2.0) for Caquiaviri-Copacabana peasant women higher than the ratios (1.3 and 1.1) for peasant women of Santiago de Huata probably are caused by the influence of religious ideas, attitudes and practices, upon Copacabana peasant women. If comparison of the ratios is made only between those of La Paz (2.1 and 4.2) and of Santiago de Huata (1.3 and 1.1), then it is clear that the ratios for the most acculturated daughters of peasant women of La Paz are greater than the ratios for the less acculturated peasant women of Santiago de Huata. In other words, cultural

13. Copacabana is a famous Sanctuary in Bolivia, honoring the Virgen de Copacabana, which is under administration of Saint Francis of Assisi missionaries.

change is a positive factor to engage in formal unions or for formalization of consensual unions. Moreover, these ratios show that the incidence of formal unions and formalization of consensual unions is higher among the most acculturated than the less acculturated women.

Table 39 gives data regarding mean length of all separations lasting one month or more. This length of time is taken as an approximation to the amount of time lost at risk for sexual intercourse.

Table 39. Mean^a length of Separations (in years), by Current Civil Status, Area, and Generation

Current Civil Status	Area and Generation					
	La Paz		Santiago de Huata		Caquiaviri - Copacabana	
	Young	Older	Young	Older	Young	Older
TOTAL	0.4	0.7	0.1	0.1	0.5	0.5
Consensual Union and Trial Marriage	0.1	0.4	-	- ^b	-	0.5
Civil Marriage	0.4	0.4	-	0.1	0	1.1
Civil and Religious Marriage	-	0.3	-	-	0.2	-
Separation and Divorce	1.3	2.7	1.1	0	2.3	0
Widowhood	-	2.8	-	0.7	-	0

a. Means based on less than three cases are shown as zero (0).

b. Based on 23 cases; the mean (not shown) is 0.04 of a year.

The mean lengths of separations for women in all current civil status (total) for daughters of peasant women of La Paz (0.4 and 0.7) are longer than those for peasant women of Santiago de Huata (0.1 and 0.1). That finding reveals that the less acculturated peasant women of Santiago de Huata loose a time at risk for sexual intercourse shorter than the daughters of peasant women of La Paz. These findings are strengthened by the mean lengths of separations (1.3 and 2.7, La Paz and 1.1 and 0.0, Santiago de Huata) for women in the current civil status of separated and divorced women.

That the mean length of separations for peasant women of Caquiaviri-Copacabana (0.5 and 0.5) is longer than those for peasant women of Santiago de Huata cannot be explained in this investigation. The fact that the nature of mining operations for a large number of males in Caquiaviri may, at least in part, be the cause of long separations.

From the analysis of the ratios Formal Unions/Informal Unions (above) and the analysis of the mean length of separations, it follows that, contrary to the 4th hypothesis (page 145), the findings are that the higher the incidence of formal unions the longer the amount of time lost at risk for sexual intercourse. The most acculturated older daughters of peasant women of La Paz show the highest ratio of formal unions (4.2 formal per informal union) and also the longer mean length of conjugal separation (0.7 years, Table 39). On the other hand, the less acculturated older peasant women of Santiago de Huata show the lowest ratio of formal unions (1.1 formal per informal union) and the shortest mean length of conjugal separation (0.1 years). Similar relationships can be drawn for the young generations of daughters of La Paz peasant women and the Santiago de Huata

peasant women. For reasons advanced in previous paragraphs, the Caquiaviri-Copacabana results could possibly only be understood through a future investigation.

As shown in Table 40, the mean length of conjugal life in all current civil status (Total) for daughters of peasant women of La Paz is (2.2 and 8.2 years) longer than those for peasant women of Santiago de Huata (1.8 and 7.6 years). These data show that the less acculturated peasant women of Santiago de Huata might have had, other things being equal, a time at risk for sexual intercourse

Table 40. Mean Net Length^a of Conjugal Life (in years), by Current Civil Status, Area, and Generation

Current Civil Status	Area and Generation					
	La Paz		Santiago de Huata		Caquiaviri - Copacabana	
	Young	Older	Young	Older	Young	Older
TOTAL	2.2	8.2	1.8	7.6	3.3	8.4
Consensual Union and Trial Marriage	3.1	6.9	1.8	8.2	5.0	7.8
Civil Marriage	3.4	8.0	2.1	8.3	0	11.2
Civil and Religious Marriage	3.3	9.9	2.4	7.9	3.9	7.5
Separation and Divorce	1.0	4.8	1.0	0	1.0	0
Widowhood	-	6.1	-	-	-	0

- a. Net length is defined as the number of years actually lived by the couple, that is, discounted the time lost by separation, if any.
- b. Means based on less than three cases are shown as zero (0).

shorter than among the more acculturated daughters of peasant women of La Paz. Again, the least acculturated women of Caquiaviri-Copacabana may possibly have been influenced by the Catholic Church preaching's and teachings in Copacabana to show the longest (3.3 and 8.4 years) length of conjugal life among the women of the 2 Altiplano areas.

Bivariate and Multivariate Correlation Analysis.

In various parts of this dissertation thesis fertility has been examined through statistical cross tabulations.

Bivariate and multivariate correlation analysis may supplement the previous findings on fertility behavior among daughters of Bolivian Aymara peasant women born and residing permanently in the city of La Paz, and among peasant women born and permanently residing in rural areas around towns (pueblos) of Santiago de Huata and Caquiaviri – Copacabana¹⁴.

In this section, the impact of five independent variables¹⁵ over the dependent variable of live births (in per 1,000 women) will be investigated through the simple and multiple correlations analysis.

The output information obtained through SPSS¹⁶ programs is extensive.

14. 1950 Census of Population: Santiago de Huata, urban 942, rural 14,267; Caquiaviri, urban 754, rural 12,134; Copacabana, urban 1,967, rural 7,965; City of La Paz 321,073

15. The five independent variables are shown in detail on Table 41.

16. The tabulations of the correlations were obtained at the Computer Facilities of Cornell University thanks to a subsidy from the International Population Programs, Professor Joseph Mayone Stycos, Director.

In table 41, the basic statistics of the number of cases and the arithmetic means of each of the 6 variables is shown.

Table 41. Number of cases (#) and arithmetic means (\bar{x}) for the dependent:
 (1) Live Births (LBs, per 1000 women),
 and independent variables:
 (2) Respondent's current age (RCUAGE),
 (3) Length living (LENLIV),
 (4) Age at first sexual union (AGEFSU),
 (5) Length of separation (LENSEP), and
 (6) Sex intercourse before sexual union (SIBSU), in percent,

La Paz city (LPC), Santiago de Huata, rural (SHR), and Caquiaviri-Copacabana, rural (CCR)

Bolivian Aymara women in sexual union and women in marriage, 1970.

Variables	Women in sexual union						Women in marriage					
	LPC		SHR		CCR		LPC		SHR		CCR	
	#	\bar{x}	#	\bar{x}	#	\bar{x}	#	\bar{x}	#	\bar{x}	#	\bar{x}
LB's	84	2.75	71	1.59	23	3.48	97	3.45	26	2.04	27	2.74
RCUAGE		25.5		25.0		27.3		27.2		24.9		26.0
LENLIV		5.41		4.71		7.18		7.48		6.16		6.63
AGEFSU		18.1		19.1		18.3		18.8		18.1		18.7
LENSEP		1.65		1.89		1.96		1.89		1.96		2.0
SIBSU		0.72		0.08		0.70		0.55		0.12		0.26

- Notes:
1. The number of cases indicated for variable (1) Live Births is the same for all variables in each column.
 2. The number of cases is not the total of the sample. It includes only cases for women in sexual union and marriage.
 3. Length living and Length of separation are expressed in years.
 4. Sex intercourse before sexual union is expressed in percent.

The analysis and interpretation of results, however, will be concise and limited due mainly to the sample being small and having been chosen subjectively and not based on probability sampling.

Some outstanding findings are:

1. Acculturation does not seem to have a noticeable difference in impact on the arithmetic means within each variable.
2. The greater mean fertility (LBs) of the least acculturated peasant women in sexual union of Caquiaviri-Copacabana (3.48) and of the most acculturated daughters of peasant women in marriage of the city of La Paz (3.45) probably were influenced by the combined factors of the oldest mean of the respondents' current age (Ca – Co, 27.3), (La Paz, 27.2), and by the longest length of living (Ca – Co, 7.18 years, and La Paz, 7.48 years).
3. The lowest mean fertility (LBs 1.59) for the peasant women in sexual union of rural Santiago de Huata (other things being equal) was probably influenced by the shortest length of living (4.71 years).
4. The mean age at first sexual union and the mean sexual intercourse before sexual union (in percent) do not seem to be very different among all areas.
5. The length of separation (marital disunion) does not seem to be very different among all areas.

Before examining the contents in tables 42 to 45, a review of some definitions, an implied assumption, and some limitations are in order.

The following statements are borrowed from the authors cited.

1. "Partial correlations ... represent the intensity of association between pairs of variables when the influence of other variables is removed"¹⁷.
- 2 "A coefficient of zero means that there is no relationship at all between the two variables ... a correlation coefficient of plus or minus unity means that when the measure of one character is known the other is also fully defined. Intermediate values designate degrees of intensity of association within these limits"¹⁸.
3. The correlation between a and the set of variables, b, c, d, etc., considered collectively ... is measured by the multiple correlation coefficient"¹⁹.
4. When calculating bivariate or a multivariate correlation it should have been assumed that each variable in the equation had a normal or near normal distribution of frequencies. No attempt has been made here to test if the variables at hand possessed this prerequisite of a normal distribution of frequencies.
5. "The R-square (correlation coefficient – square) can be interpreted as

17. Treloar, Alan E., Correlation Analysis, p15.

18. Treloar, Alan E., Biometric Analysis, p.174.

19. Treloar, Alan E., Correlation Analysis, p15.

the proportion of the variance in the dependent variable accounted for by the regression (correlation) equation”²⁰. Professor Treloar, however, affirms that ... “the correlation coefficient does not define in its own magnitude the part of the total variation which is resolved by the association” (Treloar, Alan E., Biometric Analysis, page 204).

6. Again, it is necessary to be reminded that the sample is, in cases, small and that it has been chosen subjectively but not at random sampling.

Interpretation of results in tables 42 to 45

In table 42, the “intensity of association” (Treloar opus cited: 174) between the dependent variable of fertility (LBs) and the independent variable of Respondents’

Table 42. Partial correlation coefficients ($r_{1-2,3,4,5,6}$) for the dependent variable (1) Live Births (LBs) with five independent variables for Bolivian Aymara women in Sexual union and Marriage in La Paz city (LPc), Santiago de Huata rural (SHr), and Caquiaviri-Copacabana rural (CCr), 1970

Dependent/ independent variables	Women in sexual union			Women in marriage		
	r LPc	r SHr	r CCr	r LPc	r SHr	r CCr
1. LBs						
2. RCUAGE (r_{1-2})	.640	.575	.493	.568	.756	.567
3. LENLIV (r_{1-3})	.656	.586	.587	.738	.748	.740
4. AGEFSU (r_{1-4})	-.126	-.073	-.074	-.246	-.238	-.134
5. LENSEP (r_{1-5})	-.151	-.008	-.119	-.024	.166	.231
6. SIBU (r_{1-6})	.351	.023	.049	.083	.116	

20. SPSS, Statistical Package for the Social Sciences, p.185.

current age (RCUAGE) for rural peasant women in marriage in both Santiago de Huata (SHr .756) and Caquiaviri - Copacabana (.567) is shown to be stronger than for women in sexual union (concubinage²¹) in SHr .575 and in CC .493. Said intensity of association is, however, reversed in the case of women in the city of La Paz: .568 for women in marriage, and .640 for women in concubinage.

The intensity of association between fertility and length of living (LENLIV, years) for women in marriage is shown to be much stronger than for women in concubinage in the three areas. This finding may suggest that, other things being equal, women in marriage might have had a more stable sexual partnership than women in concubinage.

The intensity of a negative association between fertility and age at first sexual union (AGEFSU) is shown to be among women in marriage (-.246, -.238, and -.134) stronger than women in concubinage (-.126, -.073, and -.074) for women in their respective areas.

The intensity of a negative association between length of dissolution of partnership (LENSEP) and fertility is shown to be among daughters of peasant women in the city of La Paz for women in concubinage (-.151) greater than for women in marriage (-.024). The reason or reasons for peasant women in marriage in Santiago de Huata and Caquiaviri showing a positive association cannot, at this time, be explained.

21. Concubinage is a term accepted and more familiar than sexual union within the Bolivian population.

The intensity of a positive association between fertility and sexual intercourse before sexual union (SIBU) among women in concubinage in La Paz (.351) is shown to be much stronger than among women in marriage. This positive association is, however, reversed for women in Santiago de Huata: .023 for women in concubinage and .116 for women in marriage.

In table 43, the intensity of positive associations – measured by the multiple correlation coefficients – between fertility and the 5 independent variables included in the equation is shown to be for women in marriage (.792, .804, and .769) stronger than for women in concubinage (.753, .665, and .673) for women in the three areas, respectively. In other words, the impact of the five variables, taken “collectively”²² for married women is stronger than for women in concubinage. That may mean that other factors, among them abortion and

Table 43. Multiple correlation coefficients ($R_{1-2,3,4,5,6}$) for the dependent variable (1) Live Births (LBs) and the stated independent variables (2,3,4,5,6) for Bolivian Aymara women in sexual union and marriage in La Paz city (LPc), Santiago de Huata rural (SHr), and Caquiaviri-Copacabana rural (CCr), 1970

Dependent/ independent variables	Women in sexual union			Women in marriage		
	R LPc	R SHr	R CCr	R LPc	R SHr	R CCr
1-2 RCUAGE	.640	.575	.493	.568	.756	.567
1-23 LENLIV	.699	.646	.609	.742	.792	.741
1-234 AGEFSU	.725	.659	<u>.742</u>	.782	.803	.764
1-2345 LENSEP	.745	.668	.738	<u>.792</u>	.796	.769
1-23456 SIBU	.753	.665	.673	.758	.804	

Note. Please see that in Tables 41,42,43, and 44, the acronyms are spelled out on the title of Table 41.

22. Treloar, opus cited, p.15.

contraceptives use, may be missing among women in concubinage in an extent greater than among women in marriage. But the impact of factors other than abortion and contraceptive use, also unknown at this time, should not be disregarded to be operating on all of the women.

In table 44, R-square or multiple correlation coefficients-square are shown.

Table 44. R-square and Table 45 R-square change in the multiple regression coefficients computer calculations for the dependent variable of Live Births (1. LBs) and the independent variables stated*, for Bolivian Aymara women in sexual union and marriage, in La Paz city, Santiago de Huata rural, and Caquiaviri-Copacabana rural, 1970.

Dependent/ independent variables	R-square					
	Women in sexual union			Women in marriage		
	LPc	SHr	CCr	LPc	SHr	CCr
1. LBs						
2. RCUAGE (1-2)	.409	.330	.243	.323	.571	.322
3. LENLIV (1-23)	.488	.417	.370	.551	.628	.550
4. AGEFSU (1-234)	.525	.434	<u>.551</u>	.611	.644	.584
5. LENSEP (1-2345)	.555	<u>.446</u>	.545	<u>.628</u>	.634	<u>.592</u>
6. SIBU (1-23456)	<u>.567</u>	.442	.453	.575	<u>.647</u>	

Note. Underlined figures in each column are the last R-square figure of the independent variable among the five independent variables operating upon the dependent variable.

Keeping in mind Professor Treloar's words of caution²³, the R-square can be interpreted as the "proportion of the variance in the dependent variable (fertility) accounted by the ... "multiple correlation coefficients included in the equation"²⁴.

23. Treloar, Biometric Analysis, p. 204.

24. SPSS, opus cited, p. 185.

The proportion of variance in fertility accounted for by the five variables for daughters of peasant women in concubinage in the city of La Paz (.567 or 57%) is shown to be smaller than for women in marriage (.628 or 63%). In other words, the proportion of other variables – abortion, use of contraceptives, and all unknown variables not included in the equation – is greater for women in concubinage than for women in marriage. Similar findings are shown for women in Santiago de Huata (.446 or 45% versus .647 or 65%) and in Caquiaviri – Copacabana (.551 or 55% versus .592 or 59%).

In table 45, the R–square change of length of living (LENLIV) affecting fertility is much greater than the R–square changes by the other 3 variables. Additionally, the R–square change affecting fertility of daughters of peasant women in the city of La Paz (.228) and the peasant Aymara women in Caquiaviri - Copacabana (.227) are shown to be much greater for women in marriage than the R–square change for women in concubinage (.079, La Paz, and .127, Caquiaviri - Copacabana).

Table 45.

R-square change

Dependent/ independent variables	Women in sexual union			Women in marriage		
	LPc	SHr	CCr	LPc	SHr	CCr
1. LBs						
2. RCUAGE (1-2)	.409	.330	.243	.323	.571	.322
3. LENLIV (1-3)	.079	.087	.127	.228	.056	.227
4. AGEFSU (1-4)	.037	.016	.006	.036	.010	.034
5. LENSEP (1-5)	.030	.004	.092	.017	.006	.008
6. SIBU (1-6)	.012	.009	.082	.024	.002	

Note. Please see the acronyms spelled out on the title of Table 41.

CHAPTER VII

CONCLUSIONS

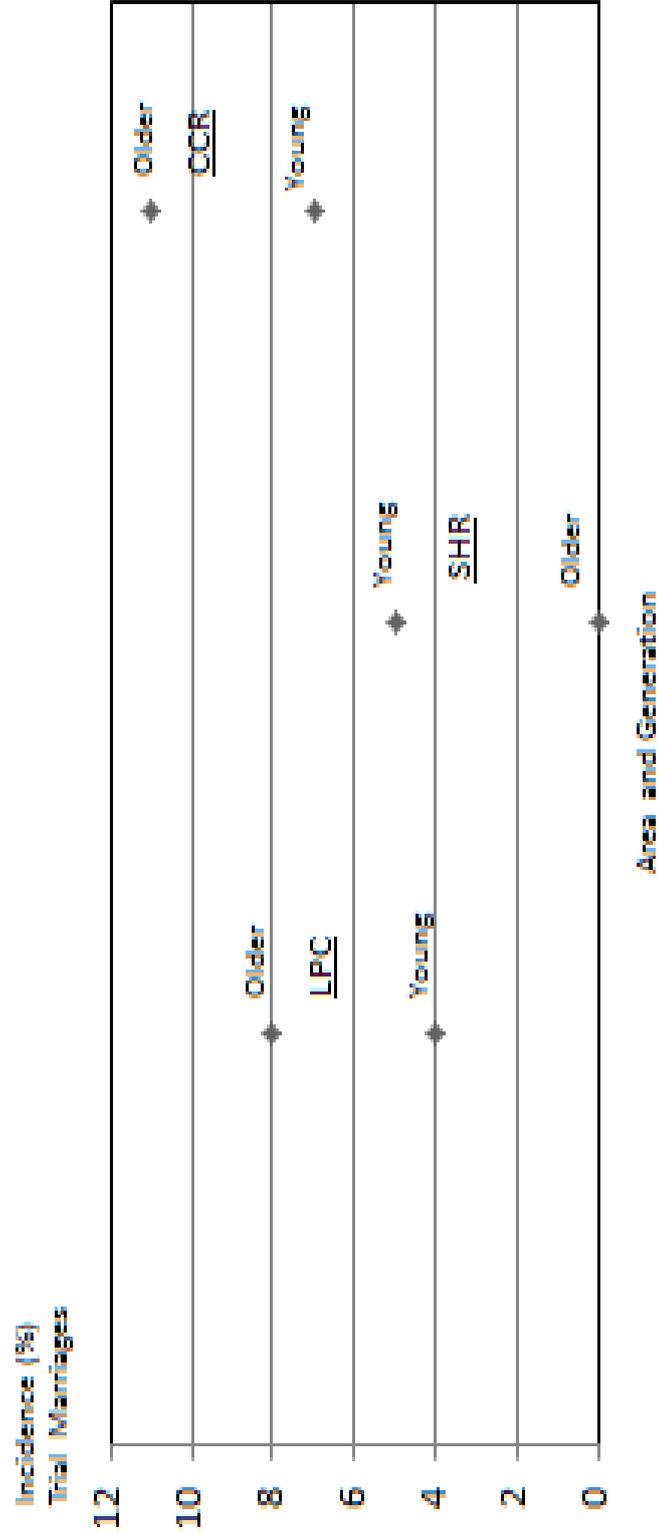
Before the conclusions are listed, it is important to emphasize that the conclusions drawn from results of this study have origin in a small sample and that the informant women were not chosen at random. Therefore, the findings should not be taken as statistically representing the universe of the Bolivian Aymara peasant women living in the Altiplano region. It is also worth to note that the peasant women of Quechua culture living mostly in valleys and that the peasant women of Guarani and other cultures living in the north, east, and south regions of Bolivia differ in many ways from the Altiplano peasant women¹.

The conclusions are:

1. In Chapter V, Cultural Change, indicators on education, language, dress, diet artifacts, ideals, submissiveness, and aspirations demonstrate that cultural change is taking place among Bolivian Aymara peasant women. The rate of change toward adopting new values, attitudes, habits is shown to be relatively rapid among daughters of peasants of La Paz, slower for Santiago de Huata peasant women and slowest for Caquiaviri-Copacabana peasant women.

1. More on restrictions and supporting features of this investigation in pages 82-84.

Graph H1. Cultural Rank and Incidence (Percent) of Trial Marriages. La Paz City (LPC), Santiago Huata Rural (SHR), and Caquiaviri-Copacabana Rural (CCR), 1970



Source: Table 33

Notes: 1. see page 184

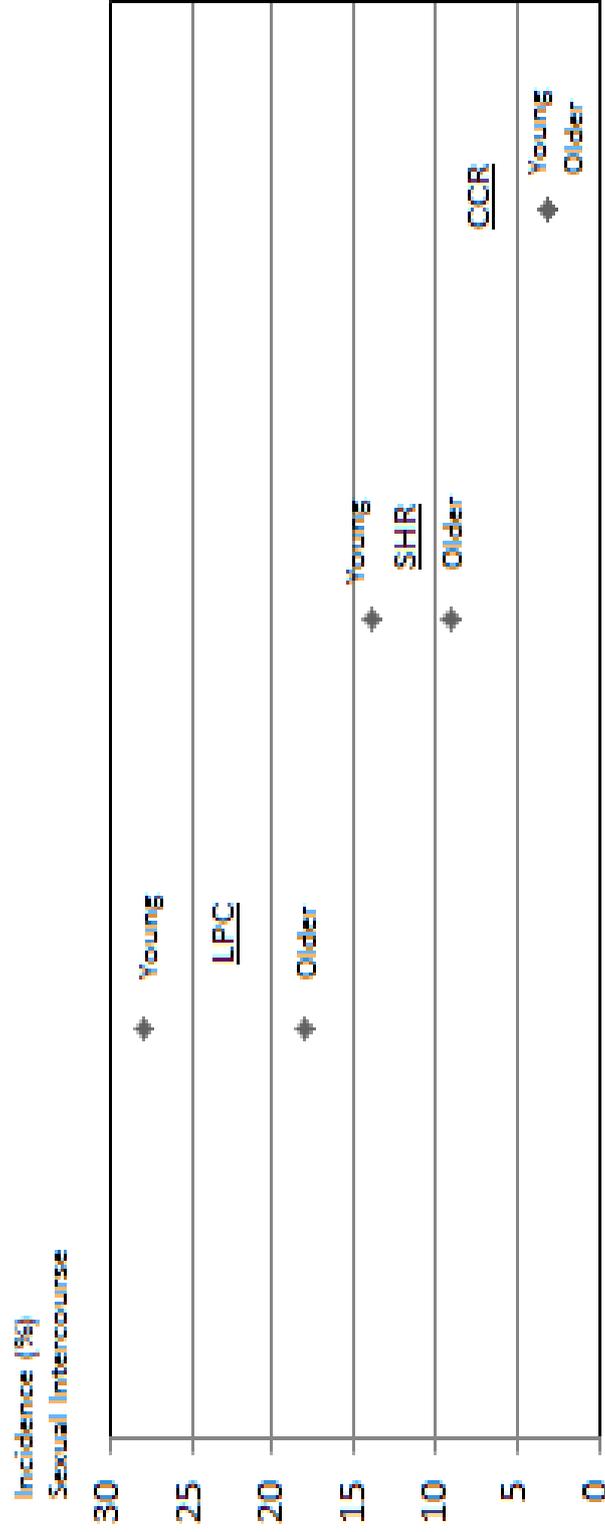
2. H1 stands for Hypothesis 1.

3. Exact Rank of Cultural Change has not been measured nor estimated.

2. A. The hypothesis that the greater the cultural change of the peasant women, the lesser the incidence of trial marriage (Table 33) has been found to be true: young and older most acculturated daughters of peasant women of La Paz show smaller proportions of trial marriage than those for the least acculturated peasant women of Caquiaviri-Copacabana
2. B. The hypothesis that the greater the acculturation of the peasant women, the lesser the incidence of premarital sexual intercourse (Table 36) has been found to be false. The most acculturated daughters of peasant women of La Paz have had the highest incidence of premarital sexual intercourse and the least acculturated peasant women of Caquiaviri-Copacabana have been found to have had the lowest incidence of premarital sexual intercourse.
3. The hypothesis that the greater the cultural change, the lower the incidence of the first sexual unions of women at risk of conception² was validated by the evidence for both young and older generations (Table 38). The proportions for women when 13-19 years old were 89 percent for daughters of peasant young generation women of La Paz and 94 percent for least acculturated peasant women of Caquiaviri-Copacabana; similar comparative proportions (54 percent, La Paz, and 63 percent, Caquiaviri-Copacabana) were shown for the older generations.

2. Women having had either sexual intercourse or at least one sexual union.

Graph H2. Cultural Rank and Incidence (Percent) of Women having had Sexual Intercourse before a Sexual Union. LPC, SHR, CCR, 1970



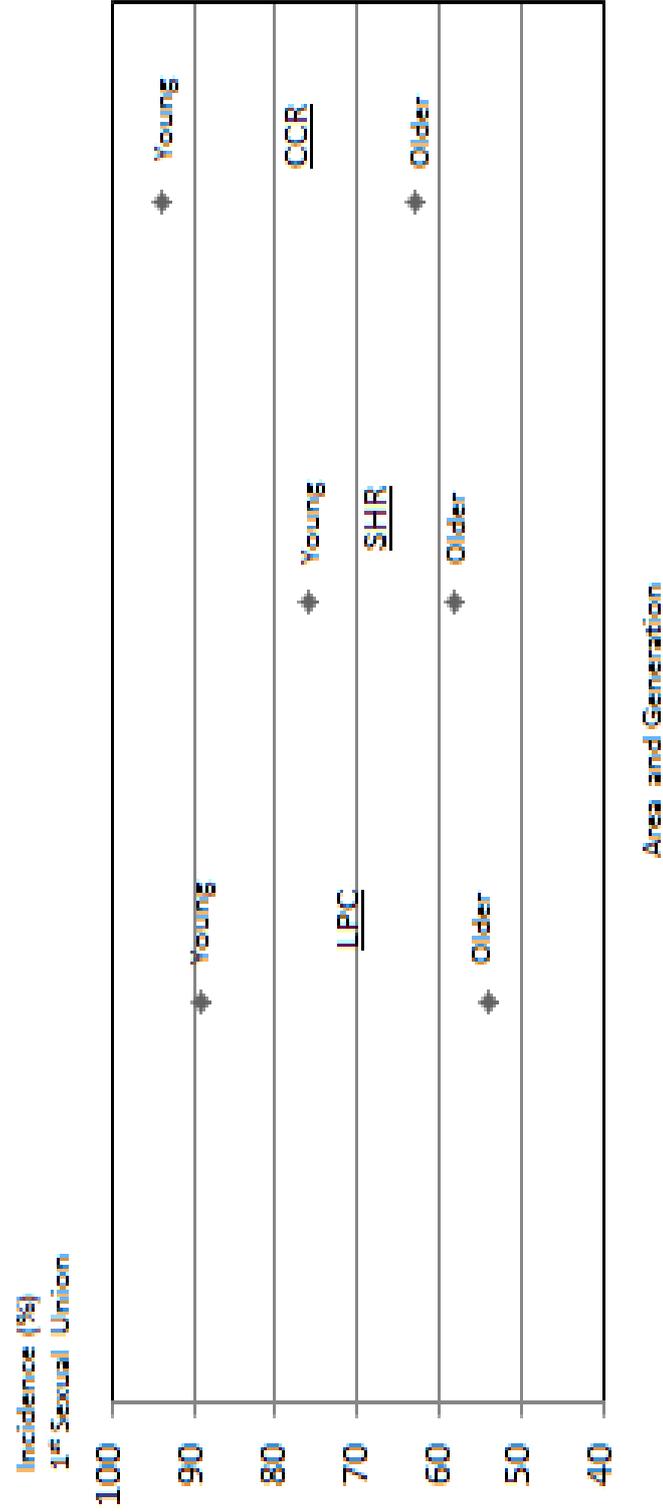
Source: Table 36

Notes: 1. see pages 184 and 186

2. H2 stands for Hypothesis 2.

3. Exact Rank of Cultural Change has not been measured nor estimated.

Graph H3. Cultural Rank and Incidence (Percent) of the first Sexual Union of Women 13 – 19 years old at risk of Conception (a). LPC, SHR, CCR, 1970



Source: Table 38

Notes: 1. see page 184 and 186

2. H3 stands for Hypothesis 3.

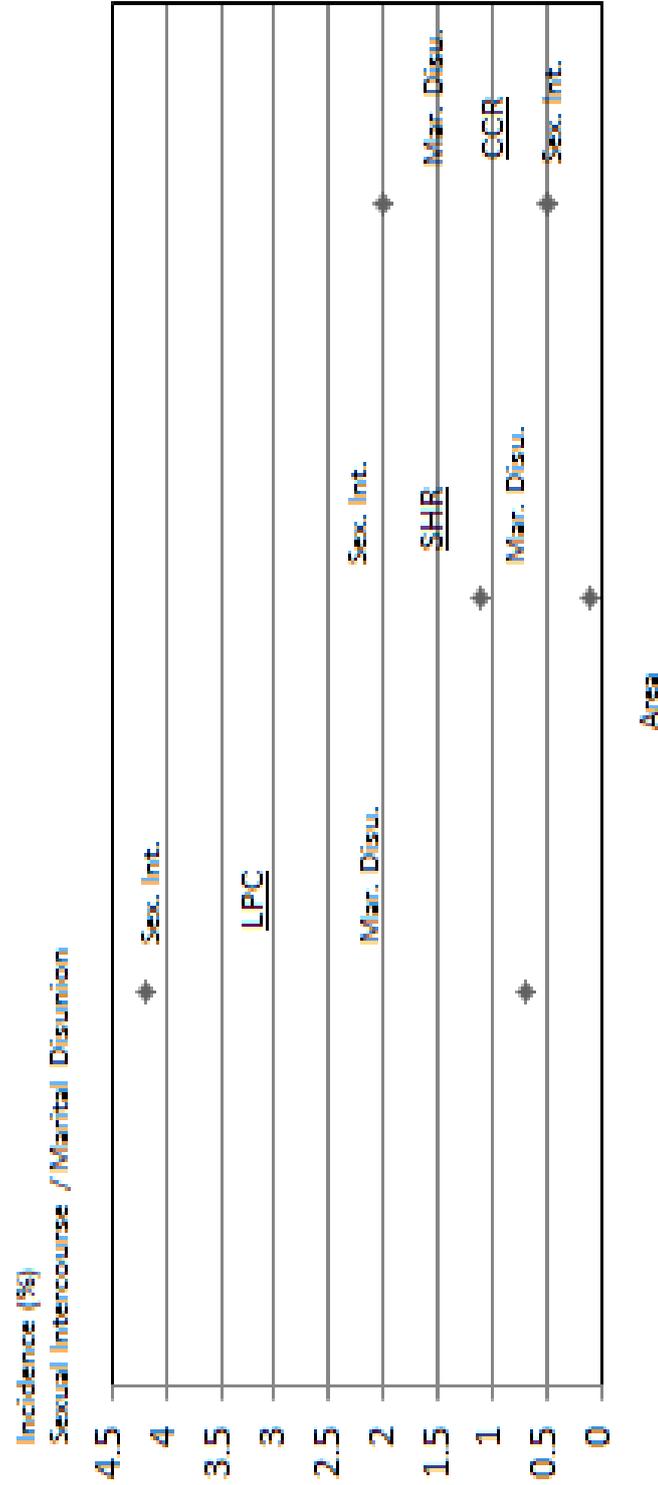
3. Exact Rank of Cultural Change has not been measured nor estimated.

(a). Women having had Sexual Intercourse or at least one Sexual Union.

4. The hypothesis that the lesser the incidence of premarital sexual intercourse, the lesser the incidence of marital disunion³ was found valid. In both Altiplano areas the findings show that within the older generations (Table 32) the incidence of separation (Caquiaviri-Copacabana, 3%; Santiago de Huata, 2%), and the incidence of sexual intercourse before a sexual union (Table 36) (Caquiaviri-Copacabana, 3%; Santiago de Huata, 9%) are the lowest. These findings also hold true when the proportions for divorced and widowhood (Table 32) are added to the separation proportions. In other words, the hypothesis is valid for the whole marital disunion. It should be noted that the daughters of peasant women of La Paz show the highest incidence within the three areas, of total marital disunion (Table 32) (16%, older generation, 14%, young generation), and incidence of sexual intercourse (Table 36) (18%, older; 28%, young generation).
5. The hypothesis that the higher the incidence of formal unions (legal and religious), the shorter the amount of time lost at risk for sexual intercourse, is not supported by the empirical evidence. The most acculturated daughters of peasant older women of La Paz show the highest index (p.170) of 4.2 formal unions per informal union and also the longer instead of a shorter mean length of conjugal separation which is taken as an

3. Marital disunion is defined as a broken sexual union from trial marriage, consensual sexual union, civil marriage, civil-religious marriage and by widowhood.

Graph H4a. Cultural Rank and Incidences (Percents) of Young Women's Marital Disunion (a) and of Young Women having had Sexual Intercourse before Sexual Union. LPC, SHR, CCR, 1970

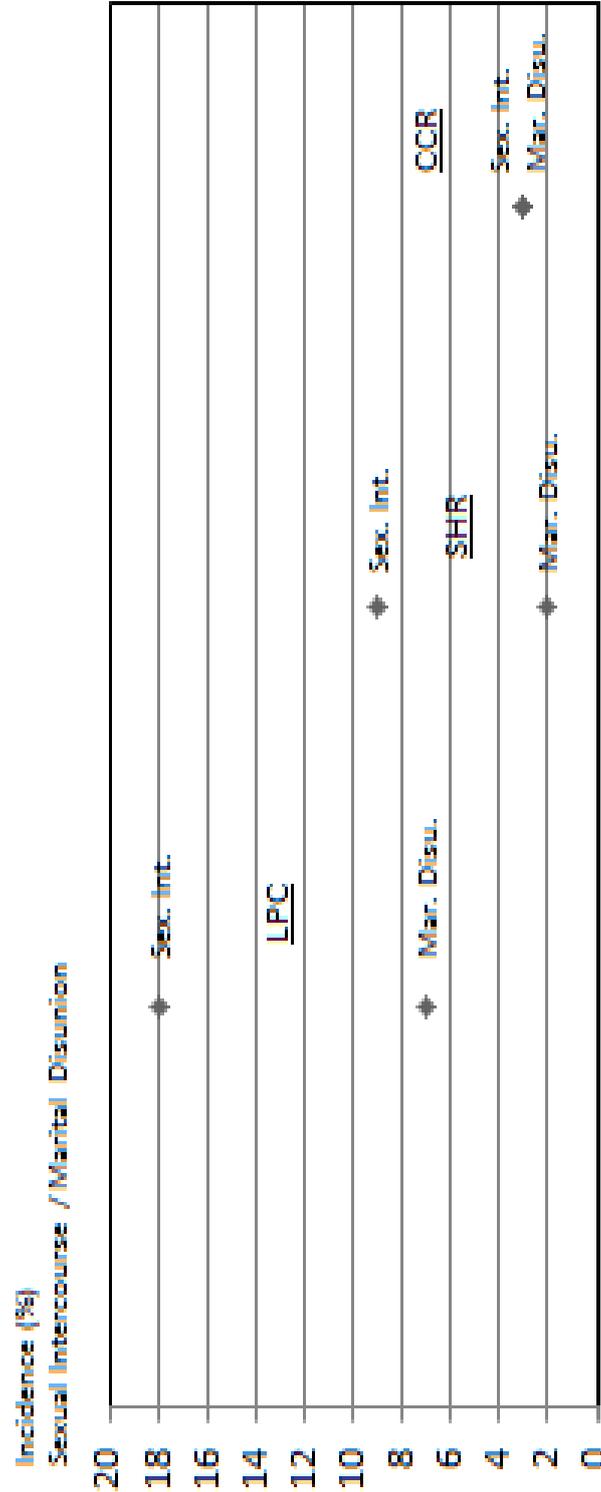


Sources: Table 32 and 36

Notes: (a). Marital Disunion comprises Union's separation from Trial Marriage, Consensual Union, Civil Marriage, and Civil and Religious Marriage.

1. See page 184 and 189
2. H4a stands for Hypothesis 4 and for Young Women.
3. Exact Rank of Cultural Change has not been measured nor estimated.

Graph H4b. Cultural Rank and Incidences (Percents) of older Women's Marital Dissolution (a) and of older Women having had Sexual Intercourse before a Sexual Union. LPC, SHR, CCR, 1970

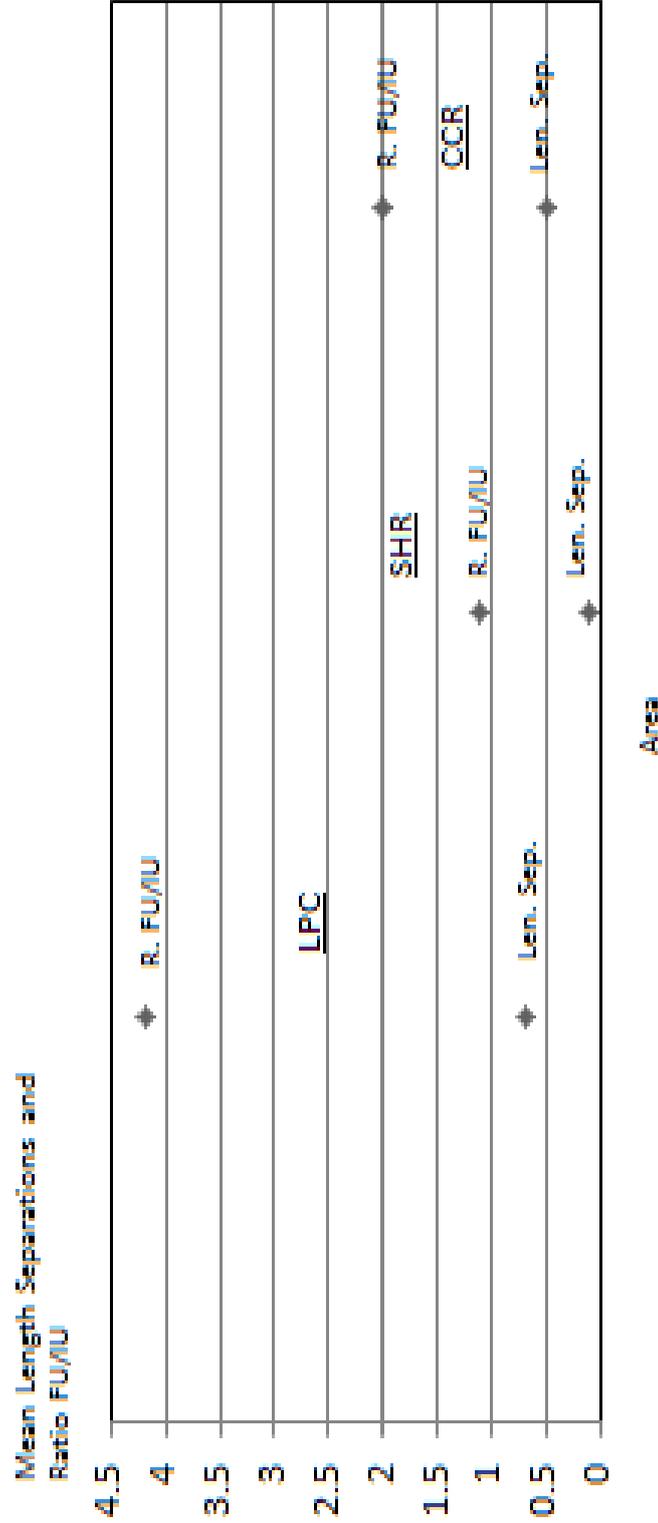


Sources: Table 32 and 36

Notes: (a). Marital Disunion comprises Union's separation from Trial Marriage, Consensual Union, Civil Marriage, and Civil and Religious Marriage.

1. see pages 184 and 189
2. H4b stands for Hypothesis 4 and for older Women.
3. Exact Rank of Cultural Change has not been measured nor estimated.

Graph H5a. Cultural Rank, Mean Length (Years) of Older Women's Separations and Ratio of Formal / Informal of their Unions. LPC, SHR, CCR, 1970



Sources: Page 170 and Table 39

Notes: 1. see pages 170 and 189

2. H5a stands for Hypothesis 5 and for older Women.

3. Exact Rank of Cultural Change has not been measured nor estimated.

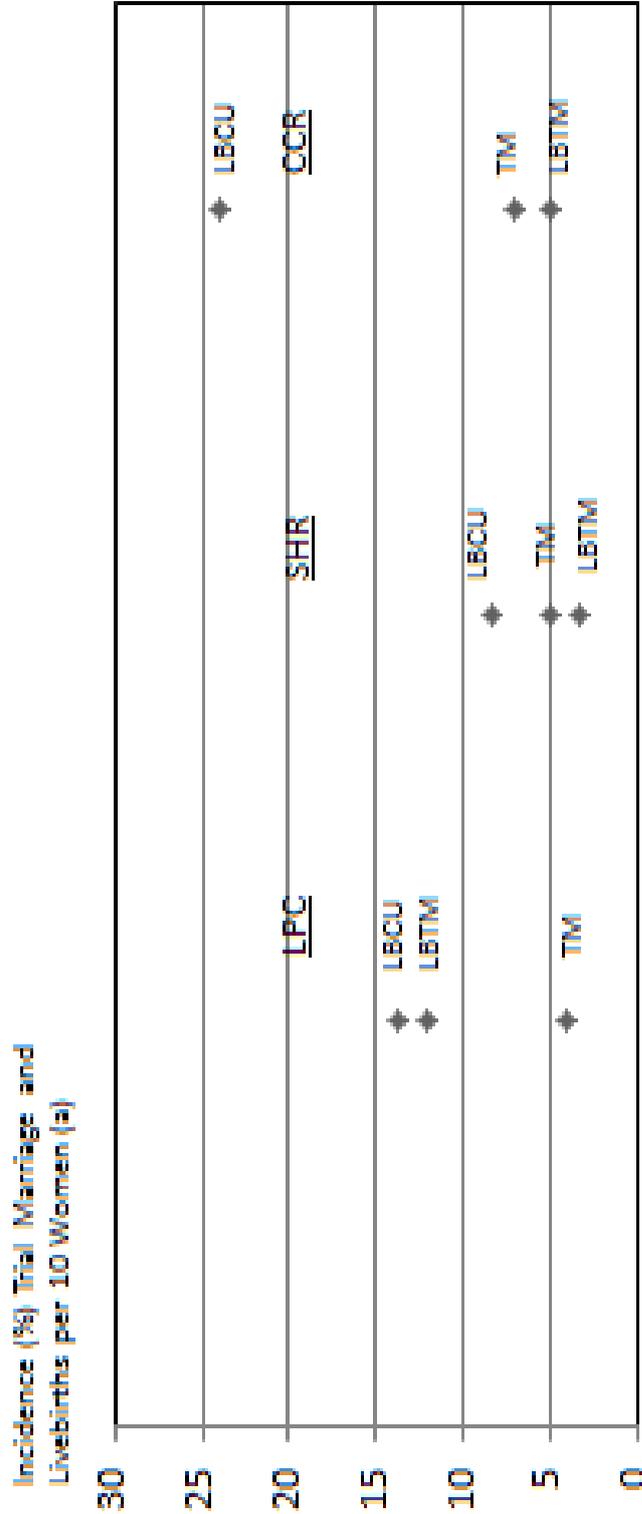
approximation of a longer amount of time lost at risk for sexual intercourse (Table 39, 0.7 years). And the less acculturated older peasant women of Santiago de Huata showing the lowest ratio (p.170) of 1.1 formal unions per informal union (that is, lower incidence of formal unions) show also the lowest (instead of the highest) mean length of conjugal separation or approximately the shortest (0.1 years, Table 39) amount of time at risk for sexual intercourse.

Keeping in mind that human fertility as a dependent variable is determined by more than one independent variable, the following few implications resulting from the discussion on testing the hypothesis are:

- 2a⁴ A declining incidence of trial marriages due to acculturation (Table 33) (p. 149) had been followed by a lowering of human fertility (p. 155). A negative fertility's impact was shown to be greater among the least acculturated peasant women of Caquiaviri-Copacabana (p. 152).
- 2b. A greater incidence of premarital sexual intercourse among the most acculturated daughters of peasant women of La Paz (Table 37) was found to be a factor affecting human fertility in a negative way (p. 157).
- 3b. A declining incidence of the first sexual union of women at risk of conception due to acculturation (p. 162) was shown to be a probable cause

4. The number and subscript refers to the number and subscript of the hypothesis tested in previous pages of this Chapter VII.

Graph 6C. Cultural Rank and Incidences of Fertility of Young Women in Consensual Union and in Trial Marriage, and their Incidence (%) of Trial Marriages. LPC, SHR, CCR, 1970



Sources: Tables 33 and 34; the C in Graph 6C refers to statements included in the CONCLUSIONS.

Notes: (a). Livebirths are shown per 10 women instead of 100, as in Table 34.

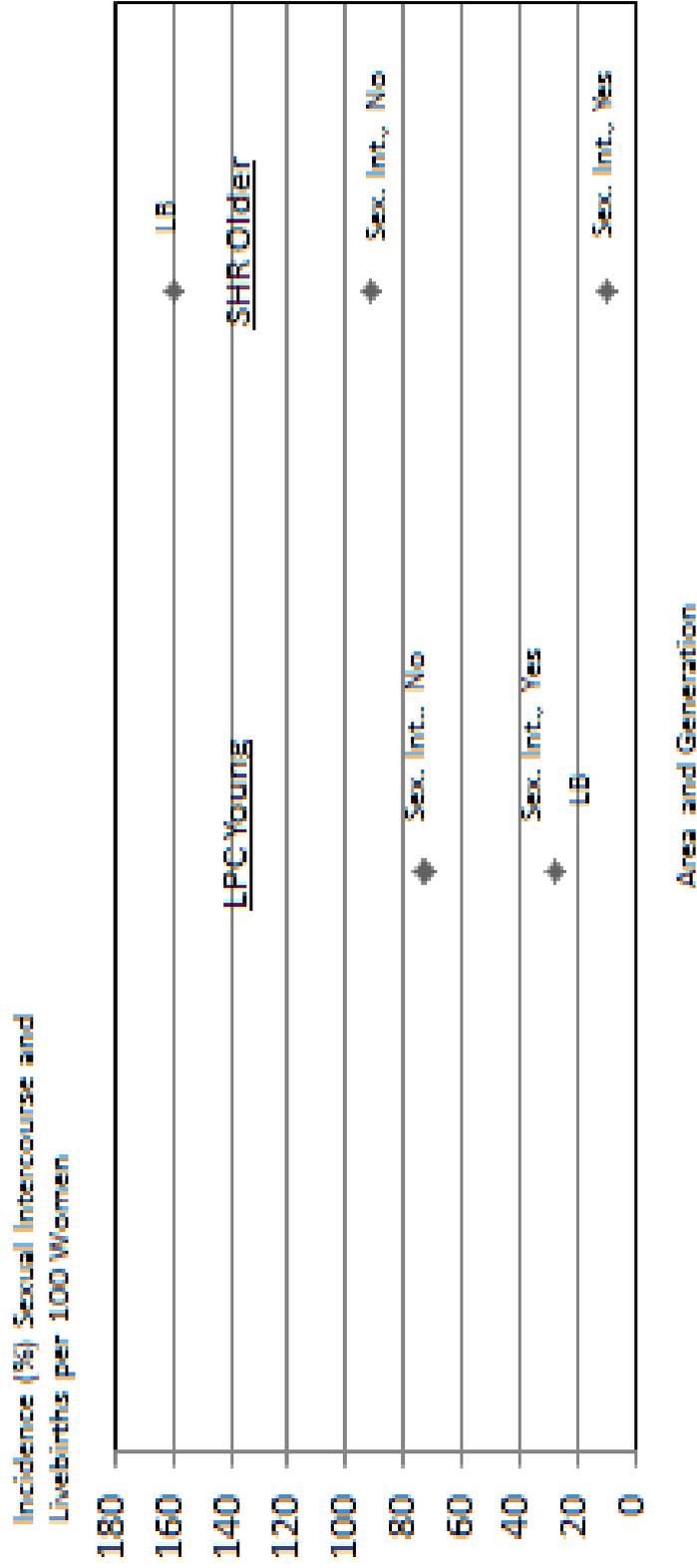
1. See page 193.

2. Fertility: Number of Livebirths per 10 women at risk of Conception.

3. Exact Rank of Cultural Change has not been measured nor estimated.

4. Trial Marriage TM, Livebirths Consensual Union LBCU, Livebirths Trial Marriage LBTM

Graph 7C. Cultural Rank and Incidence of Fertility for Women having had or not Sexual Intercourse before Sexual Union. LPC and SHR, 1970



Sources: Tables 36 and 37

Notes:

1. See pages 184 and 193.

2. Fertility: Number of Livebirths per 100 women at risk of Conception: Sexual Intercourse (Sex. Int.), Livebirths (LB).

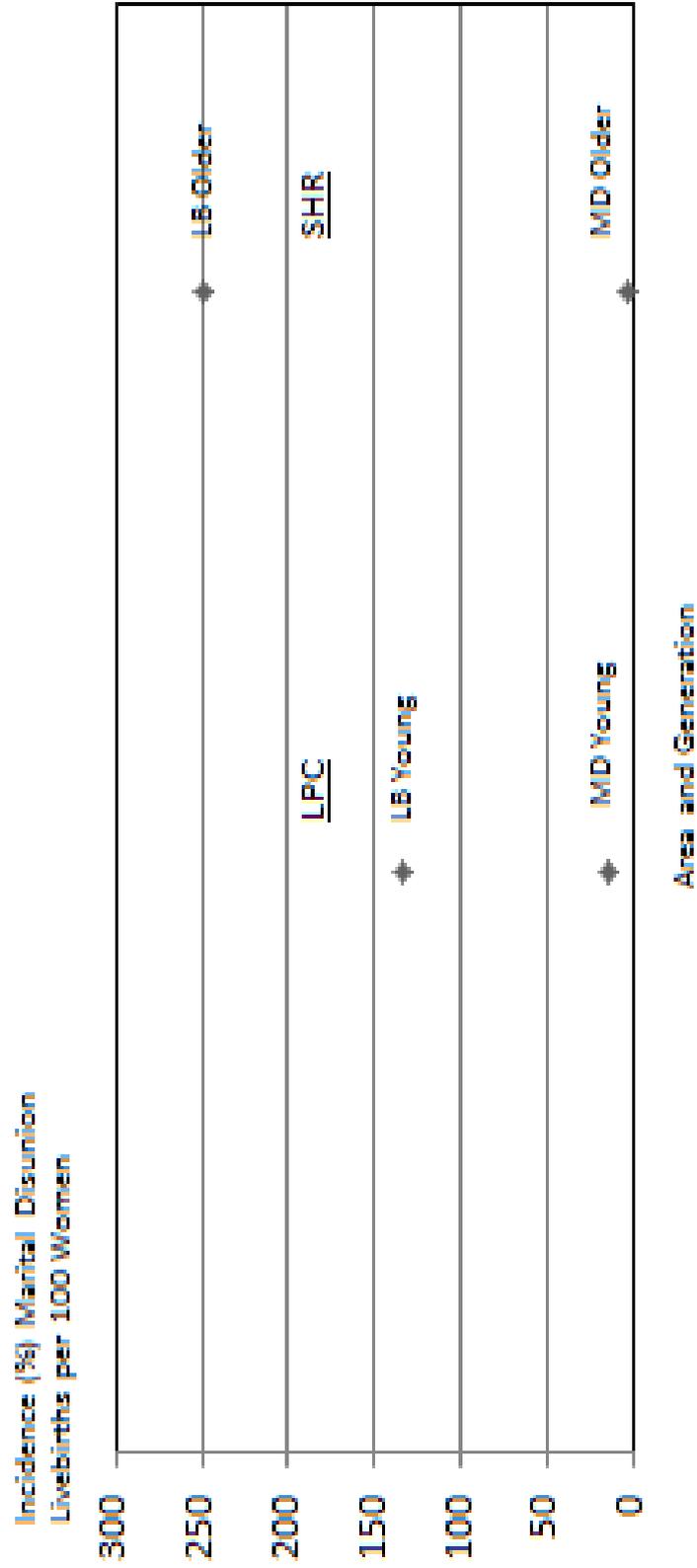
3. Exact Rank of Cultural Change has not been measured nor estimated.

for lowering fertility among the young generations of Aymara peasant women. This effect was not clear for the older generations (Table 34)⁵.

- 4b. The analysis of data on disunion (Table 32), on incidence of premarital sexual intercourse (Table 36), and on fertility (Table 34) strongly suggests that acculturation was operating toward instability of the conjugal union possibly influenced by the increasing incidence of premarital sexual intercourse. These findings also suggest that the daughters of peasant women of La Paz would be continuing to be affected toward a lower fertility.
- 5a. The more consistently empirical evidence for older most acculturated daughters of peasant women of La Paz with civil status of consensual sexual unions shows of having had a 4.2 against 2.0 index of formal per informal union greater than for peasant women of Caquiaviri-Copacabana; had a longer time lost at risk for sexual intercourse, 0.7 against 0.5 years, Table 39, and the lower number of live births per 100 women (365 against 440, Table 34). In other words, the older daughters of peasant women of La Paz living in consensual sexual union had a negative impact on their fertility by a long separation from their conjugal partners. Again, it should be remember that other factors, for example, abortion, contraception, may be intervening on these results.

5. The fertility low rate (77%, Table 34) of Santiago de Huata peasant women cannot be explained.

Graph 8C. Cultural Rank and Incidences (Percents) of Women's Marital Disunion (a) and Fertility. LPC and SHR, 1970



Sources: Tables 32 and 34

Notes: (a). Marital disunion comprises Union's separation from Trial Marriage, Consensual Union, Civil Marriage, and Civil and Religious Marriage.

1. See page 196.
2. Exact Rank of Cultural Change has not been measured nor estimated.
3. Fertility: Number of Livebirths per 100 women at risk of Conception.

In addition to the conclusions drawn from the analysis of the results originated in testing the 4 sub-hypothesis, the following findings are also listed:

a. The view that the more acculturated women, whose unions began as trial marriages, tend to formalize their unions to a greater extent than the least acculturated, is supported by findings in Table 35 (see p. 154).

b. Peasant young women in Santiago de Huata, never being in union, had nevertheless 60 live births per 100 women at risk of conception (Table 34). And the most acculturated daughters of peasant women of La Paz had 18 live births per 100 women at risk of conception, in spite of never having been in a sexual union.

c. Acculturation may be a factor causing instability of sexual unions, particularly among young peasant women (p. 168).

d. Increasing incidence of premarital sexual intercourse is shown to be probably a concomitant factor for the instability of sexual unions among the daughters of peasant women of La Paz (p. 168 and Tables 32 and 36).

e. The influence of the Catholic Church on Caquiaviri-Copacabana peasant women was probably a cause for the formalization of sexual unions (p. 171).

f. Acculturation among daughters of peasant women of La Paz is shown to be a force toward formalizing sexual unions (see index FU / IU, p. 170).

The Central Hypothesis

The central hypothesis⁶ has been postulated in the following terms: Under the condition that acculturation of the peasant women implies a decline in the incidence of premarital sexual intercourse, trial marriage, and consensual sexual unions, the adoption of the civil or the civil-religious marriage as part of the normative system of family formation provides a means conducive to longer periods spent at risk for conception (less incidence of marital disunion) and these facts are determinants for an increasing fertility of the peasant women in process of cultural change.

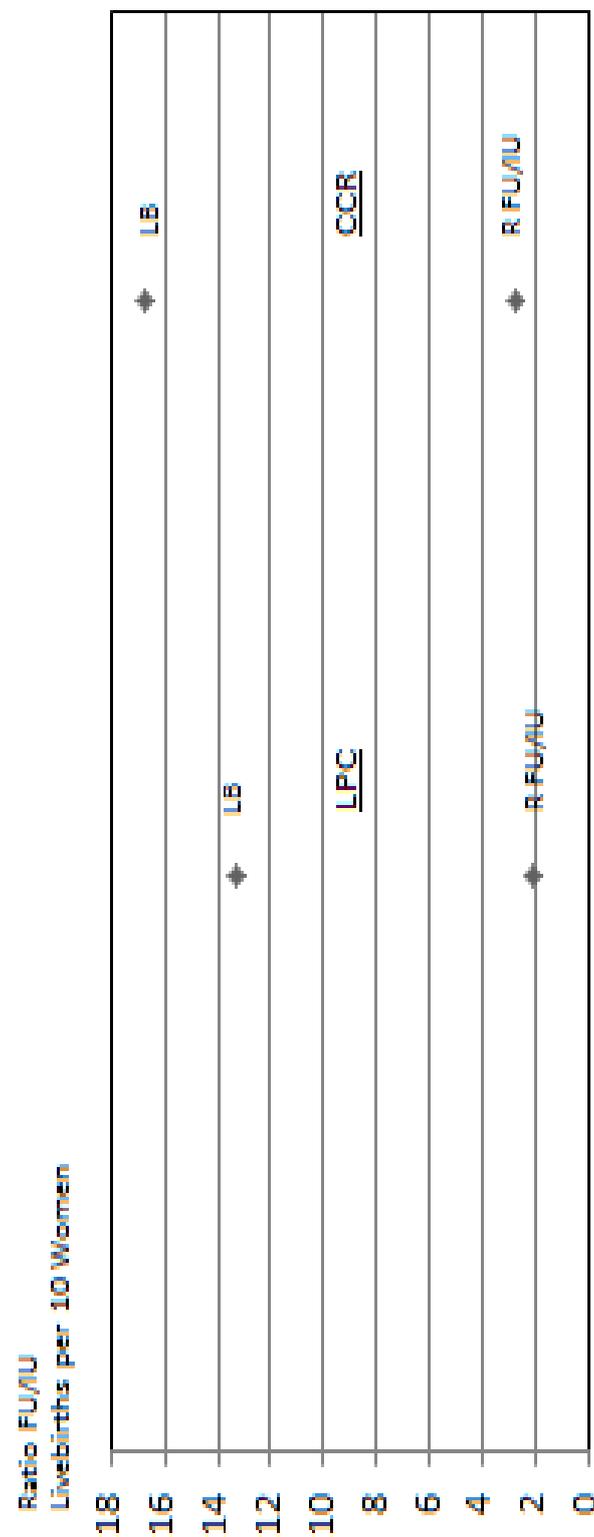
The empirical evidence examined has suggested the following results:

1. The most acculturated daughters of La Paz peasant women showed the greatest instead of a postulated smallest incidence of having had sexual intercourse before a sexual union: 28% of the young, 18% of the older generation, Table 36.

The least acculturated peasant women of Caquiaviri-Copacabana showed the smallest proportions: 3% of the young generation, 3% of the older generation, Table 36. Contrary to the presumption, the most acculturated young daughters of La Paz peasant women had (compared with Caquiaviri-Copacabana peasant women) the lowest fertility ratio: 133 live births per 100 women at risk of conception, Table 34. But La Paz women of the older

6. Advanced earlier, p. 63

Graph 9C. Cultural Rank, Incidence of Fertility of Young Women and their Formal Union / Informal Union Ratios. LPC and CCR, 1970



Sources: Tables 3.4 and Ratios in page 170

Notes: (a). Marital disunion comprises Union's separation from Trial Marriage, Consensual Union, Civil Marriage, and Civil and Religious Marriage.

1. Fertility: Number of Livebirths per 10 women at risk of Conception.
2. Exact Rank of Cultural Change has not been measured nor estimated.

generation have had the greatest fertility outcome: 383 live births per 100 women, Table 34.

These findings suggest that other intervening variables, like abortion, and contraception, may have lowered the fertility performance among young daughters of La Paz peasant women, and that among the older generation, those intervening variables were not practiced at all or at least to the same extent as among the young generation.

2. The most acculturated daughters of La Paz peasant women (compared to peasant women in Caquiaviri-Copacabana) had the smallest incidence of trial marriages (4% of the young, and 8% of the older generation, Table 33) and had the greatest fertility outcome (for the young, 120 and for the older generation 344 live births per 100 women, Table 34). These data may mean that acculturation influenced the decline of the trial marriage incidence and this factor may have been a cause for an increase in the fertility outcome.
3. Comparing incidences of consensual sexual unions between as first sexual union (Table 33) and as current sexual union (Table 32), it is clear that in the three areas, and in both young and older generations, the data show a declining incidence of consensual sexual unions. On the other hand, the most acculturated daughters of La Paz peasant women of both generations show fertility ratios (137 and 365 live births per 100 women, Table 34) that are smaller than both generations of the least acculturated peasant women of Caquiaviri-Copacabana (240 and 440 live births per 100 women, Table 34). In other words, contrary to the postulated event of a declining incidence of consensual sexual unions, rather than influencing

an increase in fertility outcome, it seems to operate otherwise (Table 34).

Declining incidence of consensual sexual unions; however, would favor to obtain greater FU/IU indexes to be examined next.

4. Formalization of both consensual sexual unions and trial marriages taken together, as measured by the FU/IU indexes: 2.1 young, 4.2 older generations, La Paz, against 1.3 young, and 1.1 older generation, Santiago de Huata (p. 170) shows that acculturation of the peasant women was probably a cause for the daughters of peasant women in La Paz to formalize their informal sexual unions in greater extent than the peasant women in Santiago de Huata. On the other hand, the fertility ratios for La Paz women in civil marriages (175 live births per 100 women, young generation, and 327, older generation, Table 34), and the fertility ratios for civil-religious marriages (200 young, 467 older generation) were shown to be higher than the fertility ratios for Santiago de Huata peasant women: 0 young, 283 older generation for civil marriages, and 75 young, and 360 older generation, for civil-religious marriages. In other words, formalization of informal consensual sexual unions was shown to be a positive factor for a higher fertility outcome among the most acculturated daughters of peasant women of La Paz⁷.

7. See the statement of the probably influence of the Catholic Church and the possible influence of the mining employment in Caquiaviri-Copacabana (p. 171).

5. In the following paragraphs, the length of separation is taken as an approximation to the amount of time lost at risk for sexual intercourse. It is also taken as the amount of time of marital dissolution.

The mean length of consensual separation (Table 39) for the most acculturated daughters of peasant women in La Paz is shown to be 0.4 years, and for the least acculturated peasant women in Caquiaviri-Copacabana is shown to be 0.5 years. The difference between these two lengths of separation does not seem to be statistically significant. The comparison of the fertility outcome for young women between 133 for La Paz and 168 live births per 100 women for Caquiaviri-Copacabana (Table 34) suggests that acculturation was a factor for a decreasing fertility among young women of La Paz. Intermediate variables like abortion and contraception, but not marital disunion, might have had an influence for a decrease in fertility outcome for young women of La Paz. On the other hand, among the older generation of women, the length of marital disunion for the most acculturated women of La Paz is .07 years and 0.5 years for the least acculturated peasant women of Caquiaviri-Copacabana (Table 39). And the fertility outcome for La Paz women (383 live births per 100 women, Table 34) is somewhat greater than for peasant women of Caquiaviri-Copacabana (374 live births per 100 women). Acculturation among the older generation of women might have been a factor for an increased fertility outcome in spite of a longer time of marital disunion.

Finally, the empirical evidence (examined above through statistical cross tabulations) has been indicative that positive cultural change has been a factor influencing fertility increase by a lesser incidence of trial marriages, that

it has been a factor influencing an unexpected fertility decrease by a higher incidence of premarital sexual intercourse; that it has been a factor in a decline in the incidence of consensual sexual unions but this fact instead of influencing an increase, it was influencing a decrease in fertility outcome.

In the examination a suggestion came out, as it would be expected, that other intermediate variables (e.g. abortion, contraception) due to positive cultural change have been affecting fertility outcome among Bolivian Aymara peasant women.

Among the conclusions suggested by the analysis of the bivariate and the multivariate correlations, the following seem to be outstanding:

- a. A combination of older age and a longer length of living (Table 41) are shown to have been a factor influencing a high fertility level.
- b. The length of separation (marital disunion) is shown (Table 41) to have been longer for women in concubinage than for women in marriage.
- c. Women in marriage seem to have had a more stable sexual partnership than women in concubinage (Table 42).
- d. The negative impact of age at first sexual union upon fertility is shown (Table 42) to have been stronger for women in marriage than for women in concubinage.
- e. The negative impact of length of dissolution of partnerships upon fertility is shown (Table 42) to have been greater for women in concubinage than for women in marriage in the city of La Paz.

- f. The positive impact of sexual intercourse before a sexual union upon fertility for women in concubinage in La Paz is shown (Table 42) to have been stronger than for women in marriage.
- g. The positive impact of five independent variables upon the dependent variable of fertility is shown (Table 43) to have been stronger for women in marriage than for women in concubinage.
- h. The positive or negative impact of factors such as abortion, use of contraceptives, and other factors is not known because they were not included in the equation.
- i. The explained variance of five independent variables upon the dependent variable of fertility for women in concubinage in the city of La Paz and in the Altiplano areas is shown (Table 44) to have been smaller for women in concubinage than for women in marriage.
- j. The unexplained variance due to factors such as abortion, use of contraceptives, and other factors is not known because these factors were not included in the equation. The unexplained variance is shown (Table 44) to have been greater for women in concubinage than for women in marriage.

APPENDIX I

CUESTIONARIO

Note: For purposes of this Appendix only but, of course, not in the actual questionnaire, parts of the questionnaire or parts of the questions strictly applying to the survey in the city of La Paz have been included within a double parenthesis ((...)).

(#). Questions 141 to 152 (if the respondent had 3 or more sexual unions), and questions 153 to 164 (if she had 4 or more sexual unions) are exactly equal to questions 129 to 140 for the sexual union previous to the current or last sexual union.

INVESTIGACION SOBRE MORTALIDAD Y MATRIMONIO - II ETAPA

CUESTIONARIO PERSONAL Y ANONIMO

Buenos días (Buenas tardes) Señora (Señorita):

Mi nombre es.....

((Mi nombre es y soy estudiante del curso de la Facultad de Asistencia Social de la Universidad de San Andrés)).

Un estudiante, compatriota nuestro, que quiere y admira a nuestra población campesina está haciendo un estudio sobre nacimientos, muertes de nuestros niños y sobre las familias en esta región.

((Un estudiante boliviano, candidato al doctorado en la Universidad de Cornell, Estados Unidos, está realizando un estudio sociológico sobre la formación y disolución de la familia boliviana y sobre la mortalidad en la niñez.))

La familia de Ud., está también incluida entre otras muchas que ya he visitado y que me han ayudado respondiendo a mis preguntas.

Aunque algunas autoridades como en el Instituto Indigenista Boliviano y en el Departamento Nacional de Desarrollo de la Comunidad saben de este estudio, los datos que le ruego proporcionarme no son para el Gobierno Nacional.

((Aunque algunas autoridades como en el Ministerio de Salud y en el Departamento Nacional de Desarrollo de la Comunidad saben de este estudio, los datos que le ruego proporcionarme no son para el Gobierno Nacional.))

Por otra parte, nuestra Escuela Normal Rural, Mariano Bautista Saavedra de Santiago de Huata, está muy interesada y colabora en este trabajo por los beneficios —aunque solamente futuros— que el éxito de este estudio podría significar para la población campesina de Bolivia y especialmente para la de esta región.

((Por otra parte, yo y mis compañeras en la Facultad de Asistencia Social, estamos muy interesadas y colaboramos en esta investigación por los beneficios futuros que el éxito de este estudio podría significar por el mejor conocimiento de los factores influyentes en la posición social de la mujer boliviana.))

La información que me dará Ud., será mantenida en absoluta reserva. Puesto que estoy preguntando las mismas cosas a muchas familias, es muy difícil que me acuerde qué me ha dicho cada una de ellas. En todo caso,

nadie más que Ud., y yo sabremos de quién son las respuestas en estos papeles y yo me olvidaré que me ha dicho Ud., tan pronto como visite otras familias.

Más todavía, en este cuestionario (SEÑALE EL CUESTIONARIO DE II ETAPA) el nombre de Ud., no se indica en ningún sitio, siendo por lo tanto la información completamente anónima.

Las respuestas que Ud., me dé son tan importantes para saber, por ejemplo cuántos de nuestros niños se mueren, que estoy seguro que Ud., me ayudará respondiendo a mis preguntas.

.....
NOMBRE COMPLETO DE ENTREVISTADORA

.....
FIRMA DE ENTREVISTADORA

FECHA

INVESTIGACION SOBRE MORTALIDAD Y MATRIMONIO - II ETAPA

CUESTIONARIO N°.....

- | | |
|--|--|
| 1. En la casa, habla Ud., a su padre (madre) en Aymara o Castellano? | (PADRE: Aymara - Castellano)
(MADRE: Aymara - Castellano) |
| 2. En la casa, habla Ud., a su hijo (a) Hermano(a) en Aymara o Castellano? | (HIJO(A): Aymara - Castellano)
(HERMANO: Aymara - Castellano) |
| 3. Fuera de la casa, habla Ud., a sus vecinos en Aymara o Castellano? | (VECINOS: Aymara - Castellano) |
| 4. Fuera de la casa, a los que le hablan en castellano, les contesta Ud., en Aymara o Castellano? | (A CASTELLANO CONTESTA EN:
Aymara - Castellano) |
| 5. ENTREVISTADORA: ANOTE QUE PRENDA USA LA ENTREVISTADA: | (Vestido:... Pollera Rural....
Pollera ciudad) |
| 6. Si tuviera Ud., un vestido nuevo y una pollera nueva, cuál de los dos se pondría para ir a visitar a sus parientes o amigos en la ciudad de La Paz? | (Vestido nuevo
Pollera nueva) |
| 7. Por qué se pondría Ud., (el vestido nuevo?) (la pollera nueva?) |
.....
..... |
| 8. Qué prefiere Ud., que use un hombre, zapatos o sandalias? | (Zapatos
(Sandalias) |

9. Por qué prefiere Ud.,
 (Zapatos?)
 (Sandalias?)
10. Entre el CHUÑO y la PAPA, cuál le gusta más?
 Cuál de los dos come más frecuentemente?
 Cuál de los dos es mejor alimento?
 Cuál de los dos es más caro?

ENTREVISTADORA: REPITA LAS CUATRO PREGUNTAS PARA CADA PAR DE ALIMENTOS EN LA SIGUIENTE LISTA.
 ESCRIBA EN CADA CASILLA EL ALIMENTO DADO COMO RESPUESTA/
 ESCRIBA RESPUESTAS ESPONTANEAS TALES COMO: Ninguno; Ambos.
 EN LA PRIMERA CASILLA (CONOCE?) ESCRIBA (NO) SOLAMENTE
 EN EL CASO DE UNA RESPUESTA ESPONTANEA DE LA ENTREVISTADA.

Mantequilla - queso
 Aceite de comer - manteca
 Carne seca - carne fresca
 Leche - sultana
 Plátano - durazno al jugo
 Lechuga - ají
 Cerveza - aguardiente

11. En caso de que se enfermara Ud., y no pudiera levantarse de cama, a quién le "rogaría" que le sane?
12. A quién haría Ud., buscar para que le cure?
13. Qué le sanaría más rápidamente, el "agua bendita"?
 o la "medicina"?
- Que le dió quién? (médico, curandero, pariente,
 amigo, boticario, enfermera)
14. Si Ud. tuviera una chacra, hubiera sembrado papas y no lloviera por mucho tiempo, a quién le "rogaría" mandar lluvia?
15. Cree Ud. que Titiviracocha o la Pachamama le podrían ayudar para que llueva?
16. De qué maneras podría uno regar lo que siembre?
17. Dígame, por favor, si conoce y las veces que ha usado las siguientes cosas:
 ENTREVISTADORA: ESCRIBA (SI) O (NO) EN CADA CASILLA
 (Conoce; Usó; alguna vez; Usa de vez en cuando; Usa muchas veces?)

Certificado de Nacimiento (Bautismo)
 Carnet de Identidad
 Certificado de Matrimonio
 Estampillas (de correo)
 Contrato ("escrito")

Receta (de médico)
"Colectivo"

18. Ahora, quiere decirme si conoce y las veces que ha usado los siguientes servicios públicos:

Sindicato
Correo
Hospital (Policlínica)
Tribunales (Notaría)
Registro Civil
Escuela
Iglesia

19. Ha escuchado Ud. hablar de las "campañas de Alfabetización? (Si No)
20. Asistió Ud. a clases de alfabetización? (Si No)
21. De las personas que viven con Ud., quién asiste a clases de alfabetización?
22. Qué aprendió Ud., en las clases de alfabetización?
23. Hasta qué curso de escuela primaria asistió Ud.?
24. Hasta qué curso de escuela secundaria asistió Ud.?
25. Tomó Ud. algún otro curso o entrenamiento? (Si ... No ...) Cuál?
26. Recibió Ud. algún certificado o "capacitación"? (Si ... No ...) Cuál?
27. Entre la TAQUIA y el CARBON, cuál le gusta más usar?
cuál de los dos usa más frecuentemente?
cuál de los dos es mejor usar?
cuál de los dos es más barato?

ENTREVISTADORA: REPITA LAS CUATRO PREGUNTAS PARA CADA PAR DE ARTEFACTOS EN LA SIGUIENTE LISTA.

ESCRIBA EN CADA CASILLA EL ARTEFACTO DADO COMO RESPUESTA.
ACEPTE RESPUESTAS ESPONTANEAS COMO: Ninguno; Ambos.
EN LA PRIMERA CASILLA (CONOCE?) ESCRIBA (NO) SOLAMENTE EN EL CASO DE UNA RESPUESTA ESPONTANEA DE LA ENTREVISTADA.
No conoce cuál?; Le gusta más; Usa con más frecuencia; Es mejor usar; Es más barato.

Anafe - Hornilla eléctrica
Silla - poyo (o patera)
Vela - mecha

Foco - lámpara a kerosene
 Máquina de coser - telar
 Radio - televisión
 Cama madera - catre metal
 Sábanas hilo- sábanas bayeta
 Almanaque - reloj
 Bicicleta - camión

28. En estos dos últimos meses de Julio y Agosto, cuantas veces

- a). visistó Ud. a sus parientes?
 b). sus parientes visitaron a Ud?
 c). se reunió Ud. con amigos u otras personas en:
 1. la Iglesia?
 2. la Escuela?
 3. el Sindicato?
 4. la Junta de Vecinos?
 5. El Club Deportivo?
 6. la Plaza del Pueblo?
 (Conoce? 0; 1-2; 3-4; 5 y más.

29. Si tuviera Ud. dinero para comprar una casa, a cuál de los dos le pediría consejo: a un pariente o a un desconocido que sabe comprar casas? ^{pariente} desconocido
30. Por qué (no) le pediría Ud. consejo al pariente?
31. Por qué (no) pediría consejo a ambos?
32. A cuál de los tres elegiría Ud. Alcalde del Pueblo?
 ((de la ciudad));
 a un pariente que fué a la escuela por 5 años?
 a un amigo que fué a la escuela por 10 años?
 a un desconocido que fué a la escuela por 15 años?
33. Por qué (no) elegiría Ud. al pariente?
34. Por qué (no) elegiría Ud. ald desconocido?
35. Es o no importante que una persona cumpla con sus promesas a amigas? Muy importante ... Importante...
 No importa
36. Es o no importante que una persona cumpla con sus promesas a extraños? Muy importante... Importante...
 No importa
37. Es o no importante que una persona llegue temprano al trabajo? Muy importante... Importante...
 No importa
38. Qué piensa Ud. que es mejor: trabajar con contrato escrito o trabajar sin contrato escrito Contrato escrito
 Sin contrato escrito
 No conoce contrato

39. Porqué es mejor trabajar con (sin) contrato escrito?
40. Cuando mujer y hombre viven unidos, cuánta plata puede la mujer gastar sin avisar al hombre? Toda la plata.... La mitad....
Un poco..... Nada.....
N.S. N.R.
41. Cuando mujer y hombre viven unidos, cuánta plata puede el hombre gastar sin avisar a la mujer? Toda la plata.... La mitad....
Un poco..... Nada.....
N.S. N.R.
42. Cuando mujer y hombre viven unidos, cuál de los dos tiene más derecho a decidir sobre cuántos hijos tendrán? Hombre Mujer.....
Ambos igual.....
N.S. N.R.
43. Cuando mujer y hombre viven unidos, cuál de los dos tiene más derecho a elegir el lugar donde van a vivir? Hombre Mujer
Ambos igual.....
N.S. N.R.
44. Cuando Ud. tenga 45 años, cuántos hijos e hijas que estén vivos quisiera Ud. tener? Número Muchos.....
Pocos N.S..... N.R.
Los que Dios mande
45. SI LA ENTREVISTADA NO DIO NUMERO:
Cuántos serían (muchos; pocos; los que Dios le mande?) Número N.S. N.R....
46. Cree Ud. que los niños pequeños se mueren ahora más o menos que cuando Ud. era niña? Más Menos
Igual
N.S. N.R.
47. De cada diez niños que nacen, cuántos cree Ud. que viven hasta ser adultos? Número
N.S. N.R.
48. Cuántas veces cree Ud. que una mujer debe estar embarazada para que a sus 45 años tenga 5 hijos e hijas vivos? Veces embarazada.....
N.S. N.R.
49. Según lo que piensan sus amigas y vecinas, cuántos hijos e hijas debe tener la mujer? Número Muchos.....
PocosN.S..... N.R.....
Los que Dios mande
50. SI LA ENTREVISTADA NO DIO NUMERO:
Cuántos serían (muchos; pocos; los que Dios mande?) Número N.S..... N.R.....
51. Según lo que piensan sus parientes, cuántos hijos e hijas debe tener la mujer? Número Muchos
PocosN.S.....N.R.....
Los que Dios mande

52. SI LA ENTREVISTADA NO DIO NUMERO: Cuántos serían (muchos; pocos; los que Dios mande?)	NúmeroN.S.....N.R.....
53. Algunos parientes quisieran que la mujer tenga muchos hijos. Para qué querrán muchos hijos?	Ayuda en pastoreo Ayuda en siembra y cosecha.... Felicidad Prestigio Religion ... Mortalidad Infan- til
54. Algunas personas quisieran que la mujer tenga pocos hijos. Por qué querrán pocos hijos?	Salud madre ... Trabajo madre.. Costo ... Viven más niños.... Educación
55. Qué es lo que más desearía para Ud. que le suceda en los próximos 5 ó 10 años?
56. Quisiera Ud. tener harta plata, o gozar de buena salud?	Harta plata N.S. Buena saludAmbos...N.R...
57. Quisiera Ud. ganar harta plata tra- bajando, o ser feliz al lado del hombre con quien vive (vivirá?)	Harta plata trabajando..... N.S. Ser feliz Ambos N.R.
58. Quisiera Ud. aprender bien un oficio o tener una buena cosecha ((trabajo))	Oficio ... Ambos ... N.S. ... Cosecha(trabajo)....N.R.....
59. Quisiera Ud. tener hartos o pocos hijos?	Hartos ... Pocos N.S. ... Los que Dios mande ... N.R....
60. Cuántos serían hartos (pocos; los que Dios mande?)	Número N.S. N.R....
61. Porqué quisiera Ud. tener hartos (pocos) hijos?
62. Qué es lo que más desearía Ud. para su primer hijo cuando él sea mayor?
63. Quisiera Ud. que sea agricultor, o que trabaje en la ciudad de La Paz?	Agricultor La Paz N.S. N.R.
64. Quisiera Ud. que maneje su propio camión o que trabaje en una fábrica?	Propio camión Fábrica.... N.S. N.R.
65. Quisiera Ud. que sea profesor o doctor?	Profesor Doctor N.S. N.R.
66. Quisiera Ud. que su primer hijo viva unido a una sola mujer, o que viva unido con una y después con otra hasta encontrar la mejor?	Unido a 1 sola Casado a 1 sola Unido a más de 1 N.S.... Casado a más de 1..... N.R....

67. Qué es lo que más desearía Ud. para su primera hija cuando ella sea mayor?
68. Hasta qué edad quisiera Ud. que su primera hija vaya a la escuela? No escuela Edad
..... N.S. N.R.
69. Hasta qué edad quisiera Ud. que su primera hija le haga caso en los asuntos de ella con amigos hombres? Edad hija ... N.S. ... N.R....
.....
.....
70. A qué edad quisiera Ud. que su primera hija empiece a vivir unida a un hombre? Edad hija unida N.S....
Edad hija casada
..... N.R.....
71. Aconsejaría Ud. a su primera hija que viva unida a un hombre y después a otro hasta encontrar el mejor? Unida a 1 solo
Casada a 1 solo N.S.....
Prueba con 1 N.R.....
Prueba con más de 1
72. Cuánto importaría que su hija tuviera algún hijo con un hombre y después con otro hasta escoger el mejor? Importaría mucho
Importaría poco No importaría.... N.S. ... N.R....
73. Aconsejaría Ud. a su hija que se uniera a un solo hombre hasta que él o ella muera? Sí unida Sí casada
No N.S. N.R.....
.....
74. Si su hija tuviera 25 años y ya tuviera 3 hijos vivos, cuántos más quisiera Ud. que ella tenga? Número (0, 1..)
Cuantos Dios mande
..... N.S. N.R.
75. Qué desearía Ud. más, que su primera hija estuviera unida a un hombre fiel, o aunque no fuera fiel con tal que él siempre esté unido a ella? Unido fiel
Casado fiel
Unido siempre N.S.
Casado siempre N.R.
76. Qué desearía Ud. más para su primera hija: que estuviera unida a un hombre por mucho tiempo, o aunque no fuera por mucho tiempo, con tal que él le diera a ella plata para sus hijos? Unida por mucho tiempo
Casada por mucho tiempo
Unida y plata
Casada y plata
N.S. N.R.
- SEÑORA (SEÑORITA): Ud. ES MUY AMABLE EN CONTESTAR MIS PREGUNTAS. LAS QUE AUNQUE SON INTIMAS SON MUY IMPORTANTES PARA SABER CUANTOS DE NUESTROS NIÑOS NACEN Y CUANTOS SE MUEREN.
77. Qué edad tenía Ud. cuando por primera vez tuvo relaciones sexuales con un hombre? Años Muy joven
Joven N° meses antes.....
después la menstruac.
..... N.S. N.R.

78. Qué edad tenía Ud. cuando por primera vez vivió unida a un hombre?
.....
- AñosMuy joven
N° meses antes ... después..
la. menstruación....N.S.....
Joven N.R.
- 79a. Qué edad tenía Ud cuando por primera vez estuvo Ud. embarazada (en cinta; esperando un niño)?
- Años Nunca
Muy joven Joven
N°. meses después.... la. Mens-
truación. N.S.... N.R.....
- 79b. Cuántas veces en toda su vida estuvo Ud. embarazada?
- Número Muchas
Pocas N.S..... N.R.....
- 80a. Tuvo Ud. algún hijo o hija que nació vivo, es decir, que pateó o lloró inmediatamente después de nacer?
- Si No
- 80b. Cuántos hijos e hijas vivos tuvo Ud.
- Hijos Hijas N.R...
- 80c. Cuántos de sus hijos y cuántas de sus hijas viven en esta casa con Ud.?
- Hijos
Hijas N.R.
81. Cuántos de sus hijos y cuántas de sus hijas viven en otra parte?
- Hijos
Hijas N.R.
- 82a. Cuántos de sus hijos y cuántas de sus hijas murieron? (TOTAL)
- Hijos muertos
Hijas muertas N.R.....
- 82b. Cuántos de sus hijos y cuántas de sus hijas se murieron antes de llegar a su primer cumpleaños? (santo)?
- Hijos m. menores 1 año.....
Hijas m. menores 1 año
..... N.R.
83. Cuántos niños y niñas le nacieron muertos, es decir, que no lloraron o no patearon al nacer después de 6 meses de embarazo?
- Hijos nacidos-muertos
Hijas nacido-muertas
Total nacido-muertos
..... N.R.
84. Cuántas veces "perdió" Ud. una criatura antes de los 6 meses de embarazo?
- Número Nunca
N.S. N.R.
.....

ENTREVISTADORA: REVISE PREGUNTAS 77 a 84.
SI LA ENTREVISTADA HUBIERA DECLARADO ALGUN EMBARAZO,
CONTINUE CON LO QUE SIGUE (AHORA, ETC.) Y PASE
A LLENAR LA HISTORIA DE EMBARAZOS EN LA HOJA GEN-
TRAL, PAGINA 10, PREGUNTA 85.

EN CASO DE QUE LA ENTREVISTADA NO HUBIERA DECLARADO EMBARAZO ALGUNO
(NINGUN EMBARAZO), PASE A LA PREGUNTA 105 a y b EN LA PAGINA 14.

Ahora le ruego darme el detalle de cada uno de sus embarazos incluyendo los que hayan durado muy poco tiempo.

ENTREVISTADORA: VUELVA A HOJA CENTRAL, PREGUNTA 85.
HAGA CADA PREGUNTA, EN EL ORDEN SEÑALADO, SOBRE EL PRIMER EMBARAZO.
LUEGO SOBRE EL SEGUNDO, ETC. EMBARAZOS EMPEZANDO CADA VEZ EN LA
PREGUNTA 85 Y TERMINANDO EN LA PREGUNTA 104 POR CADA EMBARAZO.

EMBARAZOS

1°

15°

85. Qué edad tenía Ud. en su ... embarazo?(AÑOS)
86. En qué fecha empezó su...embarazo?(MES,AÑO)
87. Nació el (la) niño(a) vivo(a)?
(NO) (SI)
- PASE A PREGUNTA 102
88. En qué fecha nació? (MES,AÑO)
89. Qué nombre (no apellido) le dieron?
90. Por cuántos meses le dió el pecho? (MESES)
91. Desde que nació...cuántos meses pasaron sin que Ud. tuviera relaciones sexuales?
(MESES)
92. Desde que nació cuántos meses pasaron hasta la menstruación de Ud. (MESES)
- 93.Cuál es el sexo de?
(MASCULINO, FEMENINO)
94. Nació sólo? o mellizos,etc.(S.M.T.C.)
95. Está vivo?
(NO) (SI)
- PASE A PREGUNTA 99
96. Vive en esta casa?
(NO) (SI)
97. Dónde vive? (COMUNIDAD; PUEBLO; CIUDAD)
98. Con quién vive? (MADRE DE ENTREVISTADA;
PARIENTE: QUIEN?; OTRO: QUIEN?
99. Qué edad tenía..... al morir?(MESES,AÑOS)
100. En qué fecha murió? (MES, AÑO)

101. Fataleó o lloró al nacer?(SI)(NO)
102. Después de cuántos meses de embarazo perdió Ud. esta criatura? (MESES, TEMPRANO; TARDE)
- 103.Cuál fue la causa de la pérdida de esta criatura?
104. Le atendió alguien en la pérdida de esta criatura? (SI) (NO) QUIEN?

ENTREVISTADORA: UNA VEZ QUE CUBRA USTED TODOS LOS EMBARAZOS DECLARADOS:

- A. COMPARE LA EDAD DE LA PRIMERA RELACION SEXUAL (PREGUNTA 77) CON LA EDAD Y FECHA DEL PRIMER EMBARAZO: LA DIFERENCIA DEBE SER MENOR A 24 MESES.
- B. COMPARE EDADES Y FECHAS ENTRE EMBARAZOS (1°. con 2°.; 2°. con 3°.; etc.) PREGUNTAS 85 y 86; LA DIFERENCIA DEBE SER MENOR A 24 MESES.
- C. COMPARE EDADES Y FECHAS ENTRE EL ULTIMO EMBARAZO DECLARADO Y HOY (DIA DE LA ENTREVISTA): LA DIFERENCIA DEBE SER MENOR A 24 MESES.

PASE A LA PREGUNTA 105 INTERCALANDO a; b; f, SEGUN CORRESPONDA, EN CADA UNO DE LOS PERIODOS DE 24 MESES O MAS HALLADOS SEGUN LAS INSTRUCCIONES A.; B.; C., ARRIBA.

105. Hay un tiempo bastante largo sin que Ud. indicó haber estado embarazada:
- a () antes de su primer embarazo
- b () entre su primera relación sexual y hoy día
- c () entre el y el embarazo
- d () entre el y el embarazo
- e () entre el y el embarazo
- f () desde su último embarazo

Hemos olvidado algún embarazo (antes de), (entre), (desde...).

COMPLETE LA FRASE INTERCALANDO a; b; f, SEGUN EL CASO

	a	b	c	d	e	f		a	b	c	d	e	f
SI	()	()	()	()	()	()		NO	()	()	()	()	()
	HAGA PREGUNTAS							PASE A PREGUNTA 106					
	85 a 104							a b c d e f					
	N.R. () () () () () ()							PASE A PREGUNTA 107					

106. Dígame, por favor, cuál fue la causa para no estar embarazada (antes de), (entre), (desde)
- COMPLETE LA FRASE INTERCALANDO a; b; ... f, SEGUN SEA EL CASO:

a () N° CAUSA (#)

APPENDIX II

QUESTIONNAIRE_AYMARA VERSION

INVESTIGACION SOBRE MORTALIDAD Y MATRIMONIO

VERSION AYMARAS

1. Utaman juma'jja tatamarusa, mamamarusa aymarata parlajjta, janucasti castellanotcha?
 2. Utaman juma'jja yockamarusa phuchamarusa aymarata paljayta, janucasti castellanotcha?
 3. Utamat mistusaj vecinonacamaru aymarata parljayta, janucasti castellanotcha?
 4. Utama ankanjja khititojj castellanot paljaytam ukhajj jumatajja aymaratti parljaypayta janucajj castellanotcha?
 6. Ma machakha pata-isi, ma machakha pollirampi utjiristam ukhaja, cauquiriraqui Chuquiago marca parientenacamaru, uñthatanacamaru uñthiritaki uchasisma?
 7. Cunatsa juma'j usousisma: machacka pata-isi? machacka pollera?
 8. Cunasa juma'j munasma chachanacan uscusuñapataqui zapatoti, janukhaja wiskucha?
 9. Cunatsa juma'j munta: sapatjja? (wiskjja?)
 10. Cauquirisa juk'ampi musstam jumaru, chuñuti jaukhaja papati?
Cauquirisa juk'ampi mack'tajja?
Cauquirisa juk'ampi alimentojja?
Cauquirisa juk'ampi chani irjjetata?
- | | | | | | |
|-------------------|--------|----------|-----------|-------------|---------------|
| Aca, pá alimentot | Jani | Juk'ampi | Juk'amp' | Juk'amp | Juk'amp chani |
| cauquirisa? | uñtha? | munstam | mak'tajja | alimentojja | irjjetata? |
- Ch'uño - ch'oke
mantequilla - queso
mank'am aceite - manteccha
waña aychati - fresco auchacha
Lecheti - sultanacha
Platanu - lateru durazno imatacha
Lechugasati - waykacha
Cervesati - awarinti (aguardienticha)
11. Usuntasma ukhajja jani iquifata sartaña pue diusin, khitirusa k'ollayasifataqui rogthasisma?
 12. Kitirusa thaktayasisma kolayasifataki?
 13. Cauquirisa juk'amp ratucjja kolliritam venditumacha, janucasti cokolacha?

Kitis churtam? (Doctoracha, yatiriti, parientimacha, uñthamata, boticariocha, enfermeracha)
 14. Ma cho'ke yapumajj utkirisma, o juma'j ma yapuru cho'ke satasisma ucat, jallujja jani purcaspati o janijalluspati ukajja kitirusa rogthasisma jalluñapataji?
 15. Titiwirajjchati janukaja Pachammamati jalluyañaojja juma'j creita?
 16. Cunjamatsa kech'asispa yapucha tanacjja?

17. Uñtthati aca cosasanaca; apnakafiaquiriritati?

Documentonaca	Uñtthati?	Apnaktati macutisa?	Avesisakit apnakta?	Sapacutit Apnakta?
---------------	-----------	------------------------	------------------------	-----------------------

Suti catuya papela
 Identidad papela
 Casamiento papela
 Estampillanaca
 Contratonaca (escritonaca)
 Doctoran recetanacapa
 Colectivonaca

18. Jichaja uñt'tati acaujanaca y sararaquriritati?

Sindicatumca	Hospitalanaca (Policlinionaca)	Registro Civila
Correonaca	Jacha jurznaca utapa (notarion utapa)	Escuelanaca

19. Jumajj ist'thathi parliri alfabetización tocketjja?

20. Sartati jumajj alfabetisayasiri?

21. Jumampi utjirinacatjja kitisa sariri alfabetizacionacaru?

22. Cuna jatekta jumaja aca alfabetizacionacata?

23. Cuna curscamasa yatisaña escuelarujja sarta?

24. Cuna curscamasa secundaria escuelaru sarta?

25. Jumajj sartati juck'ampinaca yatikeri?... Cauquiri? ...

26. Catokasti ma' certificado suma yatekatamatjja?

27. Thajjampita, K'illimampitjja cauquirimpisa jilaphayasta?

Cauquirimpisa juk'ampi phayastajja?
 Cauquiris juc'ampisuma phayañataki?
 Cauquiris juc'amp chani irakatajja?

Acapaya artefac- totjja cauquirsa?	Jani uñt'ta	Juk'ampit gustam	Sapacutit o Juk'ampti apnakta	Sumati Apnaka- ñajja	Juk'amp chani irakatati
...

Thajjati - K'illimti

Anafti - electric cosinilla

Silla - poyo (patera)

Vela - mechero

Focti - kerosen lamparti

Ch'ucusa maquina - telarati

Radioti - televisionati

Tabla iquifati - fierro iquifa catreti

Hilo iquifati - bayeta mankja iquifati

Almanakti - relojcha

Bicicletati - autoti

28. Aca Julio, Agosto jicha sarakata phajsinakana khaukha cutisa:

Parintinacamaru uñthiri sartati?
Parientinacama juma uñthiri juttampti?

Jiquistati amigunacamampi, janucaja
yakha jakenacampisa:

Iglesianjja?
Escuelana?
Sindicatuna?
Vecinonjuntana?
Anatiri Tantachasiwina?
Marcaplazana?

29. Kollikenisma ukhaja cunsalañataqui quitimpisa amuyasiñamayisma: ma' parientitcha janucasti
jan uñ'thatarutcha?

30. Cunatsa ma amuyasiña (jani) mayisma parientimata?

31. Cunatsa payanpachaniru (jani) ma amuyasiña mayismati?

32. Aca quimsat cauquirirusa ajllisma corregidorataqui:
Peshkamara escuelaru sarkejje uca parientimar ucha?
Tuncamara escuelaru sarkejje uca amistadamarucha?
Tunca peshkhanimara escuelaru sarquiuca jan uñthata jakeru?

33. Cunatsa (jani) parientimaru ajllisma?

34. Cunatsa (jani) jan uñthata jakerujja ajllisma?

35. Waliti janicha ma jaketaqui phokhañapacunti arsusipkejje uca amistadananacaparujja?

36. Waliti janicha ma jaketaqui phokhañapa cuntijje arsquijje uca jan uñ't'atanacaru?

37. Waliti janicha alwat trabajuparu purifa ma jaketaqui?

38. Cuns jumajje amuyasta: trabajñatake kelkat contrato waquisispa, janucaj janich waquisqui kel-
katacontratolurata?

39. Cunatsa juk'amp wali (jani) kelkata contratompi trabajañajja?

40. Warwimpi chachampi chikthapipjje ukhajje, warmijje khauka gastaspa kolkjje jani chacharu yati-
yasa?

41. Warwimpi chachampi chikthapipjje ukhajje, chachajje khauksa gastaspa kolkjje jani warmiru yati-
yasa?

42. Warmimpi chachampi chikthapipjje ukhajje, cauquiris juk'amp derechona utji khaukha wawanaca
utjañapa?

43. Warmimpi chachampi chikthapipjje ukhajje, cauquirisa juk'amp derechona ajllifñataqui caukhantejje
utjapcani ukjje?

44. Punitunca pheskhani maranicata ukhajja, khaukha jacquiri wawanaca munasma?
45. Khaukhaspasa (waljja; juk'aqui; khauk'ti Diosajj apayancatam ucjja) ?
46. Jumaaj amuyastati jisk'a wawanacan juk'amp waljja o juk'amp minusach jiwapje jichajj, naira wawacayatajj ucjjatjja?
47. Tunca wawat nacirinacatjja, khaukhasa jaki juman creyetamatjja achachiptanapcamajja?
48. Pheskha jacquiri wawanifatakejja, pusitunkapheskhani maranirujja jumajjamuyatamatjja ma' warmijj akhaukha cutisa wawanispa?
49. Uñthatacaman y colindantinacaman amuyatapatjja khaukha wawanisphajspasa warininacajja?
50. Khaukhaspasa (waljja; juk'aqui; khaukhatej Diosajj apayancani ukha) ?
51. Parientenacaman amuyatamatjja khaukha wawanifapasa warmijja?
52. Khaukhaspasa (waljja; juk'aqui; khaukakti Diosajj apayancan ukha) ?
53. Jakhepa parientenacamajja munapjjaspati warminjja waljja wawanifapjja. Cunataquisa waljja wawanaca munap-pacha?
54. Jakhepa jakenacaj munapjjaspati, warmi juk'a wawanifapacjja. Cunatsa juk'a wawanaca munap-pacha?
55. Cunsa juk'ampi munasma acá jutiri pheskha janucaja tuncamaranjja jumaru sucedistam?
56. Waljjakolkeniña janucasti jan ususa jacañampit munasma?
57. Waljjakolke ganaña trabajasama janucaja wali cusisita chachama thiyana jacaña?
58. Ma wali oficio yatecaña janucaja ma suma cosechamat munasma?
59. Waljja waniña janucaja juk'a waniñakchat munasma?
60. Khaukhaspasa waljja (juk'aqui; Diosajj khaukhatij apayancatamj ukha)?
61. Cunatsa jumaaj munasma waljja wawaniña (juk'a wawaniña) ?
62. Cunsa juk'ampi munasma jilir yok'amatakejja, waynajanukhajja?
63. Munasmati yapu jak'efiapa janucaja Chuquiago marcan crabajañapat munasma?
64. Munasmati camionapa apnakaña janucaja ma fabrican trabajañapcha munasma?
65. Munasmati maestroñapati janucaja doctorañapcha munasma?
66. Jilir yokamataqui ma warmimpichicaña munasma, kepjarujj yakhampi ucatjja yakhampiraqui suma warmi jekhatañapamat munasma?
67. Cunsa juk'ampi munasma jiliri phuchamataqui tawak'ojjani ukhajja?

68. Khaukha marani ñapcamasa munasma jilir phuchaman escuelaru sarañapjja?
69. Khaukha maranirusa munasma jilir phuchaman casuristam asuntunacapatjja uñit'at waynanacampijja?
70. Khaukha maranirusa munasma jilir phuchaman ma chachampi chichthapifapjja?
71. Amuyasmati jiliri phuchamaru ma chachampi chichthapifapjja, ucatjj yakhampiraqui suma chach jekhatañapcamat?
72. Phuchaman wawanifapjja ma chachataqui, ucatjja yakataquirarai wali jekhatañapcama walispati jumataqui?
73. Amuyasmati phuchamaru ma' chachampik chichthapifapjja wifaycama janucaja jiwañacamajja?
74. Phuchamatejj patunca pheskani maranisa, ña' kimsa jacquiri wawanijjaspas. Khaukhampa jumaj munasma wawanifapjja?
75. Jumajj cunsamunasma jiliri phuchachamataqui: wali suma chachampi chichthapifapa janucaja janisa sumacpan pero phuchamat jani jikiktaspa uc-cha?
76. Cunsamunasma jiliri phuchachamataqui, ma'chachampi wifayataqui chichthapifapa o' janis wifayataqui pan pero chachapaj jani kolke faltayaspas phuchamaru uccha?
77. Jumajj khaukha maraniyatasa naira chachampi junthaptajj ukajja?
78. Naira cuti ma' chachampi chichthaptajj ukajj khaukha maraniyatasa?
- 79a. Naira cuti wawataqui usuri uñjasta ukajja khaukha maraniyatasa?
- b. Khaukha cutisa wawataqui usuri uñjasta?
- 80a. Wawachastati jacquiri wawjja ma' cutisa?
- b. Jumajj khaukha jacquiri wawanacsa wawachasta?
- c. Khaukha yokamasa, khaukha phuchamariquisas utjapjje jumampi gea utana?
81. Jakaujan khaukha yokamasa khaukha phuchamasa jacapkke?
- 82a. Khaukha yokomasa khaukha puchamasa jiwapjje?
- b. Janira ma' ma' phockasaj, khaukha yokomasa khaukha puchamasa jivi?
83. Khaukha cutisa wawachasta jiwata wawanacjja. Ña sojjta phajsi usuricasajja?
84. Khaukha cutisa usuchjasta, janira sojjta phajsi usuricasajja?
85. Khaukha maraniyatasa wawataqui usuri uñjastaj ukajja?
86. Cunaorasasa wawataqui usuri uñjastajja?
87. Jiwat-ti wawachasta jacquiricha?
88. Cunaorasasa nacejja?

127. Walisuma trabajopajja: empleadorati? Empleado?
 cuentapata trabajador? Jani pagata familia?
 Jakha: cauquiri?
128. Janira jumampi chichthapcasajja cunamasa walisuma oficiopajja
129. Janirachichthapcasajja, jumajja utjayatati jakha chachampijja?
130. Cuna sutinimasa uca chachajja? (janin apellidupjja)
131. Khaukha phajjsisa o marasa jumajja chica utjtajja?
132. Khaukha maraninatasa jumajja chica utjayata ukajja?
133. Khaukha maraninasa jumampi chichthapqui ukajja?
134. Jumajja ma' cutisa jaljata
135. Khaukha cutisa jumajjjaljt-tajja?
136. Khaukha tiempusa pasatapa sapa cuti jalj-tatamajja?
137. Cunasa (cunacasa) motivona aca jalj-tafianacatakijja?
138. Cunjamatsa chichthaptajja?
139. Cuna marasa Notariaru kelkayasipta?
140. Cuna marasa Iglesiata casarasipta?
- 141 a 152 Igual traducción de preguntas 129 a 140
- 153 a 164 Igual traducción de preguntas 129 a 140
165. Janira.....chichthapcasajja jumajj utjayatati yakha chachampi?
166. Khaukha cutisa jumajj chachanacampjuntó utj-tajja janirachichthapcasajja?
167. Jumajj ma cutisa ma' chachampi junto utjtati?
168. Janira ma cutisa ma' chachampi suma chichthapcasa, jumajja ma waynaru janucaja chacharu cuerpoma churastati?
169. Utjiti ma jake jani jakana jaquiri, ucata jumarú yanapiri ma wawam uymafiatáqui, mank'afiapataqui isinacampitaqui?
170. Utjiti junthasitanacaja, janira, chichthapcasajj Registro Civilaru kelkayasipjje, juman creyetamatjja cunatsa uk'ama lurap-pacha?
171. Jani notariaru kelkayasir jakenacan wawanacapajj iguala, juk'amp o minusa derechonipjjeti, kitanakatejja kelkayasipjje notariaru ucaj jakenacan wawanacapampejja?

172. Jakpea junthaptanacaja utjapjjewa jani Iglesias casarasisa. Cunapachasa motivunacapajja juman creyetamatjja?
173. Jakep juntujakinaca utjiwa chichthapisac ma tiempo jacapjje. Ucat casarasipjje civilata o Iglesiata. Cunatsa jumajj creyesma kepjjaruqui casarase tanacapatjja?
174. Caukansawawachatam ujajtam? (utamana, hospitalana, clinicana, yakaujana)
175. Kitisa yanaptam wawachataman? (parientimati, amistadamati, matronati, doctorati)
176. Cunjamatsa jiji? (usuntiti: cauquiri?; accidentasiti; cauquiri?;)
177. Munasmati juk'ampi wawanacanifa?
178. Khaukha wawanifiemsa munasmajja?
179. Khaukhasa waljja, juk'aqui, Diosati apayancatam uka?
180. Jumajj cunatsa (jani) munasma juk'ampi wawanifijja?
181. Tucuyafataquiija pa'cutim piquiu jiskt'ama:
Jumajja cunatsa uma wayusirta umafataquiija?
182. Khaukha iquifa utanisa oca utamajja?

BIBLIOGRAPHY

- Back, K.W. and Stycos, J.M., "The Survey Under Unusual Conditions", Monograph No. 1. Society for applied Anthropology, 1959.
- Bandelier, A.F., "The Islands of Titicaca and Coati", The Hispanic Society of America, New York (1910:147).
- Barraclough and Domike (1969:95).
- Blake, J., "Family Instability and Reproductive Behavior in Jamaica", Milbank Memorial Fund, "Current Research in Human Fertility", 1955.
- _____, "Parental Control, Delayed Marriage and Population Policy", United Nations Population Conference, 1965, II, New York, 1967.
- Bouroncle, C. (1964:236,241).
- Bradshaw, B.S., "Fertility Differences in Latin American Fertility", Population Studies 23 (1969:5-12).
- Centro de Estudios de Poblacion, CEP, DESEC, "Condicionamientos Socio-Culturales de la Fecundidad en Bolivia", La Paz, Bolivia, 1969.
- Centro para el Desarrollo Social y Economico, "Cambio y Tradicionalismo", La Paz, Bolivia, 1968.
- Coale, A.J., "Factors associated with the development of low fertility: an historic Summary", United Nations conference 1965, II, New York, 1967.
- Coleman, J.S., "The Mathematical Study of Change" in H.M. Blalock, Jr. and A.B. Blalock, Methodology in Social Research, McGraw Hill, New York, 1968.
- Croxton, Frederick E., and Cowden, Dudley J., "Applied General Statistics", Prentice-Hall, Inc., 1946.
- Davis, K. and Blake, J., "Social Structure and Fertility: An Analytic Framework" in Economic Development and Cultural Change (1956 : 211-235).
- Direccion General de Estadistica, "Censo Demografico de la Ciudad de La Paz", La Paz, Bolivia (1943:66).
- Direccion General de Estadistica y Censos, "Censo de Poblacion de la Republica de Bolivia", La Paz, Bolivia (1955:57).
- Direccion Nacional de Estadistica y Censos, Peru, "Sexto Censo Nacional de Poblacion, Resultados de Primera Prioridad", 1964.
- Donayre, J., "Population Growth and Fertility at High Altitudes", Pan-American Health Organization (1966:74-)
- Economic Development of Bolivia, United Nations (1958:8).
- El Diario Newspaper, La Paz, Bolivia, Sep. 18, 1971.
- Foster, G.M. "Peasant Society", Anthropology, Boston (1967:2).
- _____, G.M., (1946:22).
- Franco-Suarez, B., "A reviewed analysis of the age group 10-14 years old in the 1950 Census of Bolivia", unpublished paper, Cornell University, 1969
- _____, "Estimacion de Tasas de Natalidad, de crecimiento y de mortalidad en la Republica de Bolivia, alrededor de 1950", CELADE, Santiago, Chile, 1962 (Mimeo).
- Freyre, J.M.C.V., "Costumbres y curiosidades de los Aymaras", La Paz (1964:5).
- Goode (1961:925).

- Harding, T.G., "Evolution and Culture", the University of Michigan Press, Ann Arbor (1970:46-47).
- Heath, D.B., Erasmus, C.J., and Buechler, M.C., "Land Reform and Social Revolution In Bolivia", Praeger, New York, 1969.
- Heer, D.M., "Fertility differences between indian and spanish speaking parts of Andean countries", *Population Studies*, 18 (1964:71-84).
- _____, "Fertility Differences in Andean Countries: A reply to W.H. James", *Population Studies*, 21 (1967:71-73).
- Heer, D.M. and Turner, E.S., "Area Differences in Latin American Fertility", *Population Studies* (279-292).
- Heyduk, D., "Huayrapampa Bolivian Highland Peasants and The New Social Order",
Ph.D. Thesis, Cornell University, 1971.
- Holmberg, A.R., "Changing Attitudes and Values in Peru: a case study in guided Change", in *Social Change in Latin America Today*, Vintage Books, New York (1961: 63-107).
- James, W.H., "The Effect of Altitude on Fertility in Andean Countries", *Population Studies* 20 (1966:97-101).
- Keesing, R.M., and Keesing, F.M., "New Perspectives in Cultural Anthropology", Holt, Rinehart and Winston, New York, 1971.
- Kroeber, A.L., "Anthropology", Hartcourt Brace and Co. (1948:284).
- Marino, A., "Family, Fertility and Sex Ratios in the British Caribbean", *Population Studies* 24,2 (1970:159-172).
- Mortara, G., "Appraisal of Census Data for Latin America", Milk Memorial Fund (Sep.17, 1963:3).
- Nie, Norman H., Bent, Dale H., and Hull, C. Hadlai, *Statistical Package for the Social Sciences (SPSS)*, McGraw-Hill Book Company, 1970.
- Osborne, M., "Indians of the Andes, Aymaras and Kechuas", Harvard University Press (1952:32-210).
- Parsons, T. and Shils, E.A., Editors, "Toward a General Theory of Action", Harper Textbooks, New York (1941:248).
- Patch, R.W., "Bolivia: U.S. Assistance in a Revolutionary Setting", in *Social Change In Latin America Today*, Vintage Books, New York (1961:111-144).
- _____, "Social Implications of the Bolivian Agricultural Reform", Ph. D. Thesis, Cornell University, June 1956.
- Pool, I.D., Professor, Cornell University, Ithaca, New York.
- Price, R., "Courtship and Marriage Institutions in Vicos, Peru", Columbia, Cornell-Harvard Field Studies Report, 1961 (Mimeo).
- _____, "Trial Marriage in the Andes" in *Ethnology*, 4 (1965:310-322).
- Redfield, R., "The Social Organization of Tradition" (1967:25-34).
- Reyerros, R.A., "Historia Social del Indio Boliviano", 2nd. Printing, 1963.
- Statistical Compendium of The Americas, IASI, Washington, D.C. (Table 50).
- Stycos, J.M., "Culture and Differential Fertility", Cornell U. Press, Ithaca, N.Y. 1967.
- _____, "Culture and Differential Fertility in Peru", *Population Studies*, 16,3. (1963:257-270).
- _____, "Family and Fertility in Puerto Rico", Columbia U. Press, N.Y., 1955.

- Stycos, J.M. and Back, K., "The Control of Human Fertility in Jamaica", Cornell University Press, Ithaca, N.Y. (1964:85-86).
- Treloar, Alan E., "Biometric Analysis", Burgess Publishing Co., 1951.
- _____, "Correlation Analysis", Burgess Publishing Co., 1949.
- Tschopic, H., "The Aymara of Chuquito, Peru", American Museum of Natural History, New York (1946:548-550; 1951:162).
- United Nations, "Manual IV", (1964:31-33).
- _____, "Population Bulletin No. 7, 1963, Ch. V. "Levels and Trends of Fertility In Middle and South America", New York (1965:72).
- Valentine, Ch. A., "Culture and Poverty", The University of Chicago Press, Chicago (1970:1-12).
- Walker, R., "Centrality, Solidarity, and Development in a Bolivian Peasant Movement", M.A. Thesis, Cornell University, 1968.
- Whitehead, L., "Altitude, Fertility and Mortality in Andean Countries", Population Studies 22,3(1968:335-).
- Yinger, J.M., "The Scientific Study of Religion), The MacMillan Co., N.Y.(1970:426).
- Zondag, H.C., "The Bolivian Economy, 1952-65", Praeger Pub., N.Y.(1966:6-244).