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CAEPR Centre for Aboriginal Economic Policy Research

The explosion of aboriginality: components of indigenous population growth 1991–96

A. Gray

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Summary

The aim of this paper is to set out what can be determined about the three essential components of Aboriginal population growth in the 1991–96 period, and then examine, if any, the characteristics of the residual 'identification change'.

Births

The 1996 Census indicates that age-specific fertility rates have continued to follow a gently downward path over the 15 years since 1981. This is in line with expectations expressed at the end of the 1980s. It suggests that results from the 1994 National Aboriginal and Torres Strait Islander Survey that fertility may have risen in recent years were misleading.

- While the majority of births to Aboriginal or Torres Strait Islander fathers are also to indigenous mothers, the size of the proportion contributed by non-indigenous mothers is high enough to contribute a significant extra proportion to Aboriginal population growth. The proportion of births to non-indigenous mothers with indigenous fathers is much higher in some parts of Australia than in other parts of the country.
- The highest proportion of non-indigenous mothers was recorded in Tasmania, where it was slightly more than half of births where either partner was indigenous, and the lowest proportion was in the Northern Territory, where the odds of the father as well as the mother being Aboriginal were nine to one.
- A priority for further analysis of 1996 Census data is to assess more precisely the speed at which the proportion of children born to non-indigenous mothers is changing and the implications for Aboriginal population growth. A preliminary model of this process is presented. This involves an adjustment factor to the births component of population growth. The largest adjustments are in the south-eastern States.

Deaths

Death rates of Aboriginal and Torres Strait Islander Australians show no signs of abating to the levels experienced by other Australians, or even of declining at all:

- Not only has there been no improvement in the overall level of Aboriginal survival, but there is some indication that it is actually deteriorating, especially for indigenous women.
- Life expectancy for indigenous males was static between 1991 and 1996 at 57 years.
- Life expectancy for indigenous females fell between 1991 and 1996 from 64.4 to 63.8 years.

- There is enough information available to undertake a thorough investigation of the reasons for lack of improvement in indigenous survival, and it is essential that this investigation should be undertaken as soon as possible.

Unexplained population growth

After allowance for population increase due to births to indigenous women, births to indigenous fathers and non-indigenous women, and deaths of Aboriginal and Torres Strait Islander people, there remains a sizeable residual component of population growth between 1991 and 1996.

- Unexplained growth accounted for just on 50 per cent of net intercensal growth between 1991 and 1996.
- The proportionate age distribution of the indigenous population in 1996 is more or less exactly what it would be expected to be, only the number of people is higher. Thus, the 'new' Aborigines have approximately the same age distribution as the 'old' Aborigines in having a far higher proportion of young people and a far lower proportion of old people than the non-indigenous population.
- It is preferable to avoid leaping to any unwarranted assumption that this unexplained growth is due to 'identification change'. The most logical place to look for explanation is in the way in which the census is carried out and processed, and the possibilities it presents for missing parts of the population.

Policy implications

It remains very important for policy purposes to gain more certainty about the size and geographic distribution of the indigenous population. This affects the allocation of grants to the States by the Commonwealth, and assessment of the appropriate scale for programs for indigenous Australians and where these are needed. In pursuit of greater certainty the following should be noted:

- Counting better requires a complete review of census approaches to enumerating indigenous people and adopting cost-effective methods which will work.
- A first step should be research into the way indigenous people identify themselves, how they reveal their identity on forms of various types, and why they might avoid being included on some types of forms.
- Studies on inter-marriage between indigenous and non-indigenous Australians are now needed to assess more precisely the rate of growth of the proportion of indigenous children born to non-indigenous mothers, and also to understand the nature of the phenomenon of increasing intermarriage in order to predict its future contribution to indigenous population growth.
- Indigenous births to non-indigenous parents will increasingly boost natural growth of the indigenous population way beyond the growth trend of the

rest of the Australian population, for as long as indigenous identity remains separable.

- The estimates in this paper show only slight decline in fertility and no decreases in disturbingly high levels of mortality. There is as much need as ever for action on Aboriginal death rates, especially in early to middle adulthood.

Acknowledgments

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Introduction and aim

Australia is more than 200 years into a process at the end of which virtually every Australian will be a descendant of the indigenous Aboriginal and Torres Strait Islander inhabitants of the continent, whether they are aware of it or not and proclaim it or not. Already the process has reached a stage where growth of the population identified as Aboriginal has a driving growth momentum. Prevalence of intermarriage between indigenous and non-indigenous partners means that traditional measures of the components of population growth can produce misleadingly low population prospects. By the same process and at the same time, the distinction between Aboriginal and non-Aboriginal ethnicity is becoming increasingly blurred at the edges. Perception of Aboriginal identity has been affected rather less, at this stage of the inevitable eventual merger.

Merely to state this long-term perspective on past and future history has the potential to evoke reaction based on painful memories of assimilation policies, of stolen generations of children, of being called 'half-Aborigine' (with the connotation of not even reaching the lowest 'full-blood Aborigine' rung of the settler social ladder). Strongly-held indigenous identity has the power to confront and blunt the subjugating power of the institutions of Australian society, while that power continues to be felt disproportionately by readily-identifiable groups at the margins of the society. The paradox is that separable identity will be eroded in the end by its continual encompassing spread. In the present and the immediate future, the social and economic disadvantages associated with Aboriginal identity and Torres Strait Islander identity have an immediacy which outweighs any substantial revision of analytical perspective, yet it can be agreed that description of Aboriginal demographic change is incomplete while it ignores growth generated by overlap between the indigenous and non-indigenous components of the Australian population (O'Reilly 1994).

Put simply, growth of the indigenous population of Australia has three essential components, a positive component due to births to Aboriginal and Torres Strait Islander women, an overlapping positive component due to births to Aboriginal and Torres Strait Islander fathers, and a negative component due to deaths of Aboriginal and Torres Strait Islander people. The first two components have always overlapped, but with decreasing completeness. Births involving a non-Aboriginal partner create a potential choice of identity for the child (when it reaches an age where choice can be exercised), but it is possible that today this choice is almost always resolved in favour of Aboriginal identity. This was not so in the past, when 'passing' as non-Aboriginal conferred social or economic advantages for many people of Aboriginal descent, while there were also many children taken from their parents when very young and raised as non-Aboriginal in ignorance of their identity. Such people sometimes discover and adopt their indigenous identity, while children with non-Aboriginal mothers or fathers might be listed on census and other forms as non-Aboriginal but will later reject that classification.

There is, therefore, a fourth component of growth, which is glibly summarized as 'identification change', and often advanced as the main reason for discrepancies between different census counts of the Aboriginal population. Two quite different concepts are confounded in the term 'identification change'. Indigenous identity is now well-defined in Australian and State Government legislation, to mean people of indigenous descent who are identified as indigenous both by themselves and the communities to which they belong. Census identification of indigenous people is based on a similar definition, excluding the criterion of community identification, but the definition implicit in a census or survey question does not necessarily entice people answering the question to answer in the way intended.

It would be naive in the extreme to accept that a further 12 or 13 per cent of Aboriginal and Torres Strait Islander people somehow discovered and adopted indigenous identity between 1991 and 1996, as it would be necessary to explain the increase in population size that apparently occurred between the censuses conducted in those two years. A more sensible initial standpoint is to observe that difference between expectation and enumeration can be attributed firstly to census procedures which might fail to include all Aboriginal people, and secondly to self-identification on census forms as distinct from asserting indigenous identity. If there is a residual which cannot be accounted for by census procedures, then it is not necessarily because people have changed their identity. Asserted and even assertive Aboriginal identity is not necessarily congruent with marking a box on a census form, or any other form, especially if there is any suspicion about the way in which the information might be used. An inverse complication is that lack of understanding, and mischief, can also lead people who are neither Aboriginal nor Torres Strait Islander to mark census forms incorrectly.

The aim of this paper is to set out what can be determined about the three essential components of Aboriginal population growth in the 1991–96 period, and then examine, if any, the characteristics of the residual 'identification change'.

Births to Aboriginal and Torres Strait Islander mothers

Recent analyses of trends in Aboriginal fertility have been inconclusive (Gray and Tesfaghiorghis 1993; Dugbaza 1994, 1995; Tesfaghioghis 1996a, 1996b; Australian Bureau of Statistics (ABS) 1997; Taylor 1997). The average number of children that would be born to indigenous mothers given estimated age-specific rates for recent periods since 1986 has been estimated, variously, to be as high as 3.5 to lower than 3.0 children per woman. This total fertility rate measures the contribution of Aboriginal and Torres Strait Islander mothers to indigenous population growth by summarizing the level of fertility. Both the high and low figures remain well above the level (approximately 2.1 children per woman) that would result in each generation replacing itself exactly, leading eventually to zero population growth in a population that has no other source of increase. As noted

in the introductory section, Australia's indigenous population *does* have other sources of increase, so the replacement level for the total fertility rate would actually be less than 2.1 children per woman.

The main reasons for inconsistency in the various recent estimates of Aboriginal fertility levels has been a lack of data obtained in a consistent manner at different points of time. Earlier estimates of Aboriginal fertility levels over time had been made using data on numbers of children ever born from the 1971, 1976, 1981 and 1986 Censuses (Gray 1983, 1990a) and by estimates using the own-children method from the 1986 and 1991 Censuses (Jain 1989; Dugbaza 1994). These two series of estimates were generally consistent. The ABS also publishes annual estimates for two States and the Northern Territory (ABS 1997), going back to the mid-1980s. While no data was available from the 1991 Census on children ever born, this type of information again became available from the 1996 Census, allowing comparison with the results of the 1986 Census to estimate Aboriginal fertility levels in the ten-year period 1986–96. The basis of the estimation method is that the difference in mean number of children ever born for a particular age group in 1996 (for example age group 35–39) and the average number of children ever born for the same group of women in 1986 (then aged 25–29) represents fertility of these women in the ten-year period. These cohort-specific increments are cumulated and differenced to estimate age-specific fertility rates.

Figure 1. Cumulated mean number of children ever born to indigenous women (synthetic cohort), 1986–96

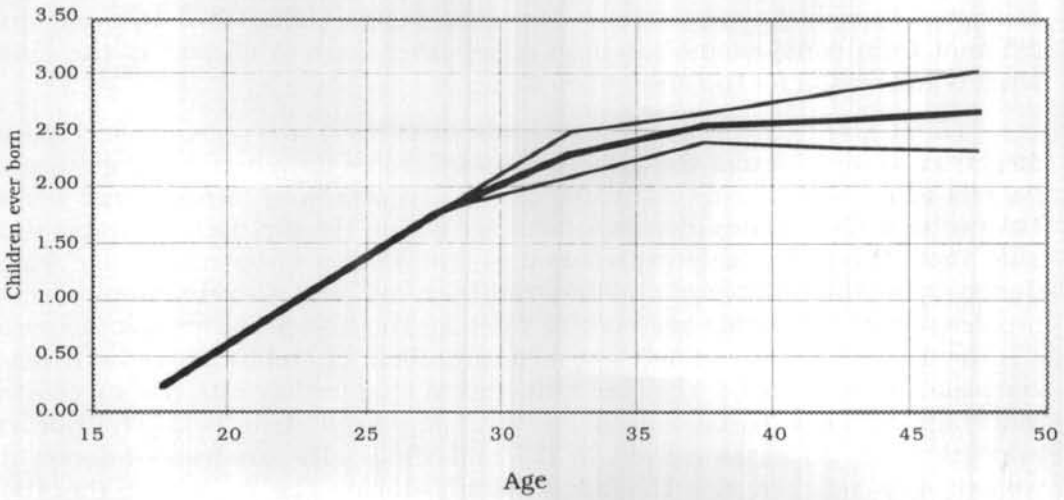


Figure 1 displays the cumulated fertility rates for the 1986–96 period based on number of children ever born. For a ten-year period, the method of analysis produces two series of estimates, which are shown as the lighter lines bracketing the averaged estimates. Figure 1 is based on separate estimates for major urban,

other urban and rural components of the population. The bracketing series serve the useful purpose of emphasizing difficulties that are associated with this method of estimation. While the two series are close up to age 30, they diverge after that, with the first implication that estimates of age-specific rates above age 30 are not as precise as those below age 30, and the second implication that the level of the total fertility rate is also inexact. These implications are less evident (but nevertheless exist) when this method of estimation is used with censuses five years apart.

For these reasons, the method can be expected to produce reasonably good estimates of age-specific birth rates for the peak years of child-bearing, between 15 and 30, and less precise estimates for higher ages. The total fertility rate from this analysis is 2.71, considerably lower than most other estimates at national level (but comparable to estimates for some States published by the ABS 1997). The value of this estimate is that it is consistent with the longer historical series based on similar data for the period since the 1960s. The complete series of estimates is reproduced in Table 1.

It should be noted that the last column of Table 1 is for a ten-year period, while the other columns are for five-year periods. For comparability, the estimates in the last panel of the table, for all indigenous women, are based on the geographical distribution given by the 1996 Census, so they are slightly lower than comparable estimates given in the sources for periods before 1986–96. The most notable feature of the table from a row-by-row inspection is that the age-specific rates seem to have been following a gently downward path over the 15 years since 1981, in the wake of steep decline during the 1970s, in conformity with expectations expressed at the end of the 1980s (Gray 1990a) and with official estimates from birth registrations for some States (ABS 1997: 57), but quite different from conclusions based on some other sources of data in the 1990s. What is the reason for this discrepancy?

To be quite sure that the estimates in Table 1 are reasonable, Figure 2 displays a comparison of the age-specific birth rates for relevant age groups and periods with 1996 Census estimates of children ever born to Aboriginal women. The two sets of estimates diverge around age 40 but the gap does not widen much after that. The most likely explanation is that as they enter middle age women under-report the number of children that they had, and if so this would confirm problems with estimating age-specific rates for the higher age groups. Above age 50, the 1996 Census estimates of mean numbers of children ever born record *completed* fertility, that is they are estimates of total fertility rates for successively older age cohorts. Women aged 50–54 experienced their peak child-bearing approximately 30 years earlier, in the mid-1960s. The analysis suggests that women who reached age 15 approximately during the decade of the 1940s recorded the highest levels of completed fertility, having more than five children each on average, while if the recollections of the oldest age groups of women are accurate, and there is no selectivity in survival to very old age, they were less likely to have had large numbers of children.

Table 1. Estimates of age-specific fertility rates of Aboriginal and Torres Strait Islander women, 1956–96

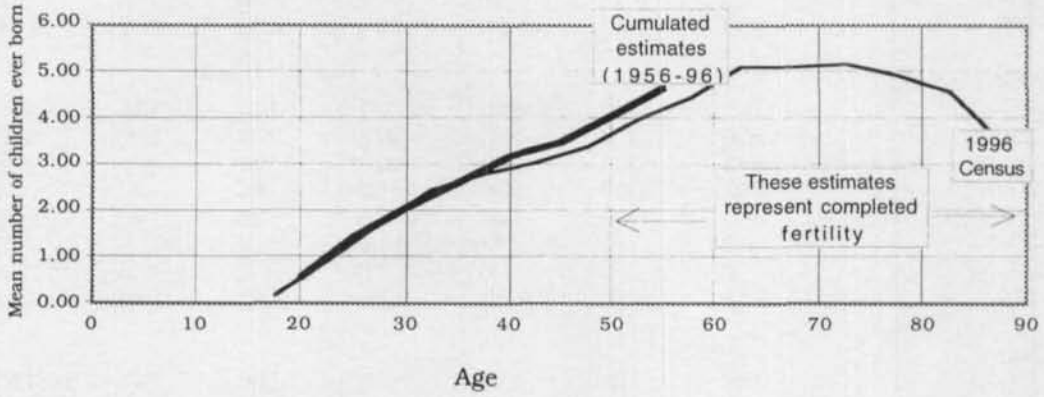
	1956–61	1961–66	1966–71	1971–76	1976–81	1981–86	1986–96
Major urban							
15–19	132	115	113	110	109	94	90
20–24	344	315	290	259	201	143	143
25–29	257	266	229	235	117	165	127
30–34	117	100	110	154	19	94	84
35–39	97	95	82	48	0	31	38
40–44	14	17	18	26	7	3	17
45–49	13	11	10	7	9	3	9
TFR	4.87	4.59	4.26	4.19	2.30	2.67	2.54
Other urban							
15–19	163	152	140	135	144	124	119
20–24	358	353	333	278	274	196	193
25–29	312	334	323	228	190	171	138
30–34	202	207	226	102	86	84	74
35–39	195	190	195	8	36	43	26
40–44	72	77	71	0	12	6	15
45–49	0	0	0	6	2	6	18
TFR	6.51	6.56	6.43	3.79	3.72	3.15	2.92
Rural							
15–19	182	182	179	178	168	141	130
20–24	266	272	273	250	228	197	178
25–29	256	273	283	234	184	165	120
30–34	238	254	287	178	117	88	69
35–39	103	120	136	7	0	32	16
40–44	58	54	58	18	7	8	1
45–49	54	56	58	0	3	8	1
TFR	5.79	6.05	6.38	4.33	3.53	3.20	2.58
Total (1996 geographical distribution)							
15–19	158	148	142	138	139	119	113
20–24	330	320	304	265	238	179	173
25–29	280	296	282	232	165	168	130
30–34	185	186	206	137	74	88	76
35–39	140	142	144	20	15	36	27
40–44	49	51	50	13	9	6	12
45–49	19	18	19	5	4	6	11
TFR	5.81	5.81	5.73	4.05	3.22	3.00	2.71

Sources: Gray (1983, 1990a); unpublished 1996 Census data, ABS.

It should be noted that the highest levels of completed fertility are somewhat lower than the total fertility rates estimated for periods in the 1960s in Table 1, suggesting that these very high levels were transient and reflected the particular social, economic and cultural conditions affecting indigenous Australians at that time. However, some caution is needed in interpreting the numbers for the same reason as mentioned above, that reported numbers of children ever born by older

women may be incomplete. There are also estimation problems arising from the grouping, in 1996 Census tabulations, of women with six or more children.[1] In general, Figure 2 provides strong support for concluding that the estimates of Table 1 are reasonable for young ages, and could not be particularly misleading for ages between 30 and 50 even if there are slight inaccuracies.

Figure 2. Comparison of mean number of children ever born, 1996 Census and cumulated estimates of age-specific rates, 1956–96, indigenous women



In explaining the discrepancy between the estimates in Table 1 and other recent estimates, an important factor is undoubtedly that detection of the direction of fertility change in the 1986–96 period was hampered by non-availability of data on children ever born from the 1991 Census. Gray and Tesfaghiorghis (1993) surmised that slight increases in child-woman ratios calculated from 1991 Census data compared with similar ratios from the 1986 Census meant that fertility must have increased slightly in the 1986–91 period compared with 1981–86. However, there are other possible reasons for such an increase, particularly if there was an increasing level of births to non-Aboriginal women with Aboriginal husbands.

Estimates from other sources are rarely at national level, and substantial variation among the States and Territories has been observed in previous analyses, so that even if numerator and denominator estimates were comparable there would be no particular reason to regard any single estimate for a single State or region as inconsistent with the more aggregated estimates in Table 1. Where available on a consistent basis, such estimates do show declining fertility and they also show an age pattern almost identical to that in Table 1 (ABS 1997).

There is a major exception to conclusions that fertility of Aboriginal women is slowly declining, in the form of estimates from the National Aboriginal and Torres Strait Islander Survey conducted in 1994 (Tesfaghiorghis 1996a, 1996b).

This survey used a national sample, and it provided information on children ever born that could in theory be used in a similar way to the data from censuses. There is no doubt that Tesfaghiorghis's estimate of a total fertility rate of 3.5 is consistent with the data, or even conservative. On the other hand, an examination of Table 2 shows that data from the 1994 survey are highly inconsistent with data from the 1996 Census.

Table 2. Comparison of information on children ever born to Aboriginal and Torres Strait Islander women, National Aboriginal and Torres Strait Islander Survey and 1996 Census

	1994 Survey		1996 Census	
Age group	Proportion of women with no children[a]	Mean number of children ever born, women with children	Proportion of women with no children[b]	Mean number of children ever born, women with children
15–19	0.84	1.28	0.85	1.35
20–24	0.39	1.93	0.47	1.84
25–29	0.17	2.76	0.28	2.50
30–34	0.10	3.22	0.17	2.97
35–39	0.06	3.53	0.13	3.25
40–44	0.08	3.83	0.10	3.40
45–49	0.07	4.28	0.10	3.75

Notes: [a] There were only very small proportions of women who did not answer questions on whether they had ever had children and how many children, if they had. The first group was assumed to have had no children.

[b] The data were adjusted according to a version of the El-Badry method for allocating most young women who did not answer the question to the category of 'no children'.

Source: Unpublished data, National Aboriginal and Torres Strait Islander Survey and 1996 Census, ABS.

Comparing the two sets of data, it is evident that in most age groups the proportion of women recorded in the census as having no children was higher than in the survey while the mean number of children recorded for mothers was lower than in the survey, increasingly so for higher age groups. These results are so incompatible that the sample simply cannot represent the same population identified as indigenous in the 1996 Census, at least in terms of number of children ever born, and the discrepancies apparently have nothing to do with the uncertainties mentioned earlier about intercensal estimates of age-specific rate for higher age groups. The implication is that either the level of all estimates in historical series should be adjusted upward, or else the 1994 survey results should be regarded as misleading; the latter view is adopted here.

Establishing trends in fertility levels of indigenous women is important not only as a component of population growth. The most evident feature of the estimates given in Table 1 is that while the overall level of Aboriginal and Torres Strait Islander fertility has declined markedly, by more than 50 per cent, from the historically high levels of the 1960s, the high fertility of young women has been

least affected, and current levels of teenage births are vastly higher than in the non-Aboriginal component of the population (ABS and Australian Institute of Health and Welfare (AIHW) 1997: 61–62). Babies born to physically and psychologically immature women are much more at risk of perinatal morbidity and mortality, there is more risk of impaired reproductive health for young mothers, and opportunities for social and economic participation of young women through education and the adoption of valued roles in their communities can be curtailed by early pregnancies. These reproductive health and developmental implications of high levels of teenage pregnancy remain urgent matters for policy and program attention.

Births to Aboriginal and Torres Strait Islander fathers

The second component of indigenous population growth consists of births to Aboriginal or Torres Strait Islander fathers. While the majority of such births are also to indigenous mothers, which have been considered in the previous section of this paper, the size of the proportion contributed by non-indigenous mothers is high enough to contribute a significant extra proportion to Aboriginal population growth. Just how high was revealed by Dugbaza (1994), who found using 1991 Census data that in couple families with at least one indigenous partner, the proportion of children with a non-indigenous mother was 27 per cent for children aged less than one year decreasing, in very close to linear fashion, to 20 per cent for children aged 14. Dugbaza also found that the proportion varied from State to State, with the highest proportion in Tasmania (42 per cent) and the lowest in the Northern Territory (6 per cent).

Similar data recorded from birth registrations in 1993 (ABS/AIHW 1997: 125) also shows that the proportion of births to non-indigenous mothers with indigenous fathers is much higher in some parts of Australia than in other parts of the country, as shown in Table 3. There were a further 1,171 births, or an extra 27 per cent, where the mother was recorded as indigenous, but the father's details were not recorded. The highest proportion of non-indigenous mothers was recorded in Tasmania, where it was slightly more than half of births where either partner was indigenous, and the lowest proportion was in the Northern Territory, where the odds of the father as well as the mother being Aboriginal were nine to one.

There is an evident source of incompleteness in this assessment, arising from the exclusion of single mothers. While inclusion of single Aboriginal mothers would reduce the proportions shown significantly, from 26 per cent to 20 per cent, there is simply no information at all about births to non-Aboriginal single mothers where the father might have been indigenous but no details were recorded in the birth registration process. In the absence of any information at all, it is reasonable to assume that the number of these events would be approximately proportional to the occurrence of non-Aboriginal mothers among births where details of both parents are known.

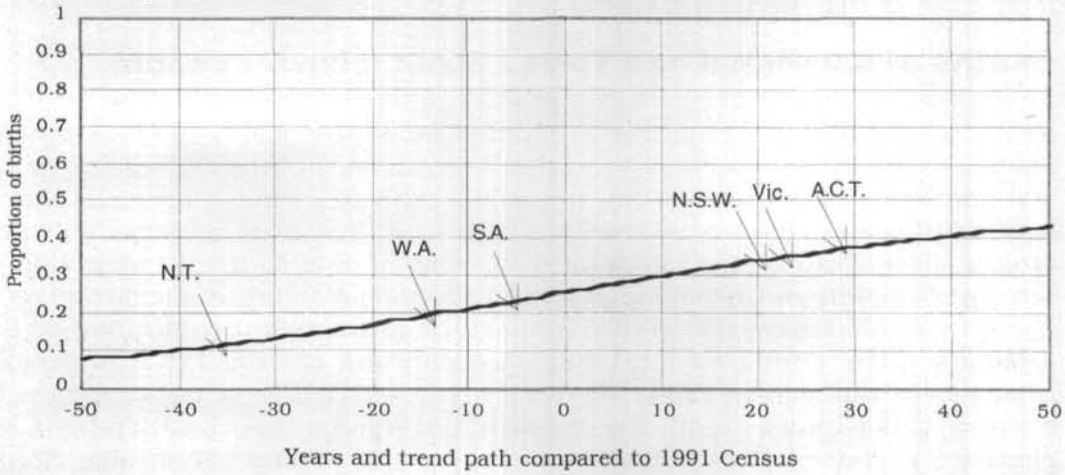
If it is assumed that the scale provided by the 1991 Census proportions cited above can be generalized to processes of outmarriage at different stages in different parts of Australia, then it would seem that a logistic lift-off has already occurred, as illustrated in Figure 3. If the model is accurate, then it could be another 40 years before the proportion of indigenous births to non-indigenous mothers in the Northern Territory reaches the level recorded for Australia as a whole in 1991, but by that time at least 30 per cent of indigenous births in all other parts of Australia will be to non-indigenous mothers. In south-eastern Australia it will be over 40 per cent.

Table 3. Birth registration, either father or mother indigenous, 1993

State or Territory	Mother and father indigenous	Mother indigenous, father non-indigenous	Mother non-indigenous, father indigenous	Total (excluding single mothers)	Proportion with non-indigenous mother
New South Wales	351	407	390	1,148	34%
Victoria	96	191	155	442	35%
South Australia	180	163	104	447	23%
Western Australia	729	242	232	1,203	19%
Tasmania	21	99	126	246	51%
Northern Territory	618	88	87	793	11%
A. C. T.	15	11	15	41	37%
Australia (exc. Queensland)	2,010	1,201	1,109	4,320	26%

Source: ABS/AIHW (1997: 125).

Figure 3. Proportion of births to non-indigenous mothers either parent indigenous (logistic model)



Source: State and Territory figures are from 1993 Birth Registrations.

No strong claims are made for this model and its scale of change, other than that it illustrates the potential for rapid increase in the contribution to Aboriginal population growth from non-indigenous mothers, and suggests a way to model it. It should be a priority for further analysis of 1996 Census data to assess more precisely the speed at which the proportion is changing and the implications for Aboriginal population growth. If the model is accurate, then the proportion of Aboriginal children aged less than one year in indigenous couple families with non-indigenous mothers should be about 30 per cent in the 1996 Census data.

There can be no doubt that the contribution of births to indigenous population growth is assessed incompletely by restricting attention to births to Aboriginal and Torres Strait Islander mothers, even if restricted attention has more relevance in the context of assessment of health status and health program needs of indigenous people. It is also meaningless to adjust age-specific birth rates or total fertility rates of Aboriginal and Torres Strait Islander women to allow for births to non-indigenous mothers in order to calculate total indigenous births.

The most reasonable approach is to continue to assess fertility in terms of births to indigenous mothers, and then, for the purpose of estimating population growth, to calculate the total contribution from births using the following formula:

$$\text{Total Indigenous Births} = \text{Births to Indigenous Mothers} * 1/(1-p)$$

Here p is obtained from a model of the proportion of births to non-indigenous mothers among total indigenous births, or in other words births to indigenous fathers that are not also births to Aboriginal mothers. The crude version of the model given here would make the adjustment factor equal to 1.37 in 1991 increasing to 1.42 in 1996. These are evidently large adjustments, and their size is much greater in the south-eastern States where Aboriginal population growth has exceeded expectations in various intercensal periods, including the most recent period from 1991 to 1996. There should also be no doubt that indigenous population growth in the major urban areas benefits much more from intermarriage than in the rural areas.

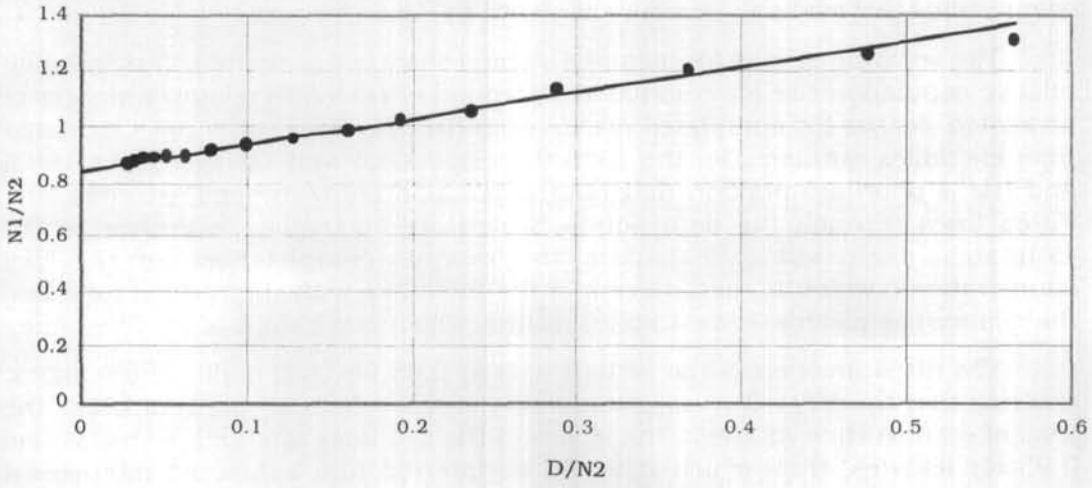
Deaths of Aboriginal and Torres Strait Islander people

Death rates of Aboriginal and Torres Strait Islander Australians show no signs of abating to the levels experienced by other Australians, or even of declining at all. The reluctance of official agencies to publish estimates which they could make, with a little more effort, is strangely at odds with their more commendable and largely successful efforts to improve the quality of data sources. Publication of incomplete estimates unintentionally obscures understanding of the directions of change and the dimensions of disadvantage, as in the recent publication by the ABS and AIHW (1997: 85–92, citing Thomson and Briscoe 1991; Anderson, Bhatia and Cunningham 1996). There is neither conscience nor consciousness in drawing a downward trend line through age-standardized death rates from circulatory system disease for Aboriginal men in Western Australia, South Australia and the Northern Territory (ABS and AIHW 1997: 90) when for both men

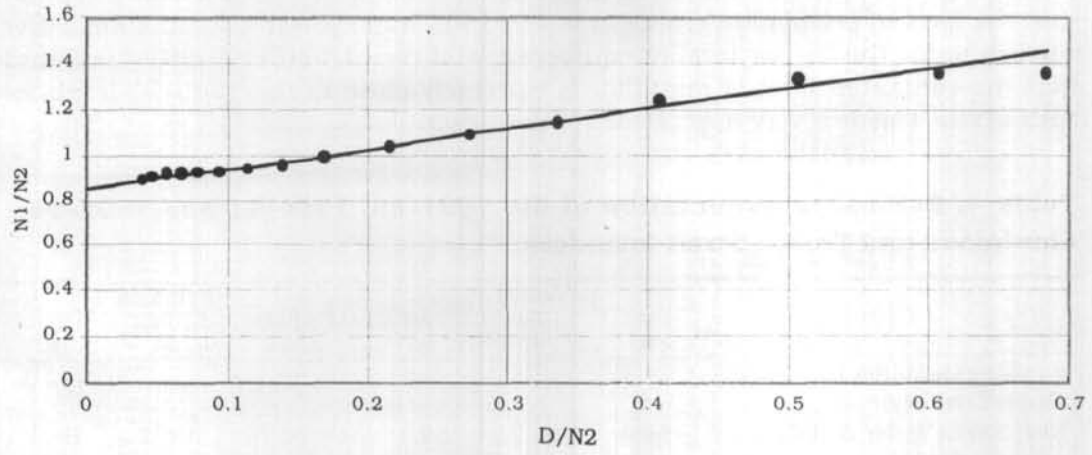
and women there is a clear upward trend during the most recent years, and while circulatory system disease remains the single largest contributor to excess Aboriginal mortality.

Figure 4. Preston-Hill intercensal analysis, Aboriginal females and males, 1991–96

Females



Males



There is now a great deal of data available about Aboriginal mortality, and consequently about Aboriginal survival. While a review of all these sets of data is necessary and urgent, it is also possible to employ again the methods developed to produce national estimates of Aboriginal mortality and differences between the States and Territories (Gray 1990b; Gray and Tesfaghiorghis 1993) to

demonstrate that Aboriginal mortality rates were approximately the same at national level during the 1991–96 period as during the 1986–91 period, possibly slightly lower for males and slightly higher for females. This is done using the same balancing procedure due to Preston and Hill (1980) that was used as the basis of previous estimates. This procedure uses relationships which must hold between successive censuses, and deaths in the intercensal period, to estimate the completeness of the first population count relative to the second census, and the completeness of the estimates of deaths relative to the first census. The comparisons, for men and women, are shown in Figure 4.

The separate graphs for men and women show two series of points, relating relative population size for cumulated age cohorts (N1/N2) to relative numbers of estimated deaths for cumulated age cohorts (D/N2). The deaths are calculated from life tables estimated for the 1986–91 period (Gray and Tesfaghiorghis 1993) and the *a priori* assumption that both population enumerations are complete. Fitted lines through the data points, which are ostensibly very close to the estimates, are used to calculate the relative completeness of the two enumerations, which is the intercept of the fitted line with the vertical axis, and the relative completeness of estimated deaths, which is the slope of the fitted line.

The fitted lines cross the vertical axis at 0.85 for both males and females, showing that the 1991 Census enumeration was at a level 15 per cent below the level of enumeration in 1996. The slopes of the two lines are 0.89 for males and 0.93 for females, from which it would be inferred that estimated intercensal deaths were too low relative to the 1991 enumeration. Part of the discrepancy for deaths is due to the calculation of intercensal deaths from the prior assumption that the level of population enumeration in 1991 was the same as in 1996. After correcting for the higher level of enumeration of population in 1996, it is found that the estimated level of mortality is extremely close to the 1986–91 level, for both sexes. This is a very approximate calculation.

Table 4. Estimated expectation of life 1981–86, 1986–91 and 1991–96, Aborigines and Torres Strait Islanders

	Males			Females		
	1981–86	1986–91	1991–96	1981–86	1986–91	1991–96
Expectation of life by State/Territory:						
New South Wales & A.C.T.	56.9	58.7	58.4	65.0	66.4	64.9
Victoria & Tasmania	57.2	60.1	61.4	66.6	71.0	68.1
Queensland: total	55.6	56.0	56.4	63.9	63.8	62.8
T.S.Islanders	n.a.	n.a.	56.3	n.a.	n.a.	62.8
South Australia	56.2	56.4	56.3	65.1	66.4	63.9
Western Australia	55.3	55.7	54.7	63.2	63.1	62.1
Northern Territory	53.7	55.1	55.4	61.8	61.8	62.7
Australia	55.7	56.9	57.0	63.9	64.4	63.8

A further balancing procedure can then be used to produce more refined estimates of age-specific mortality (Gray 1990b; Gray and Tesfaghiorghis 1993; Luther and Retherford 1988; Luther, Gaminiratne and Gray 1995). Table 4 shows estimates of expectation of life derived in this way for the States and Territories. The estimates for previous periods are as previously published, and so reflect different geographical distribution of the indigenous population in previous censuses. The overall result is an increase of 0.1 years in expectation of life for males and a decrease of 0.6 years for females.

This dismal outcome is *not* dependent on change in the denominators for calculation of rates, because the rates are calculated relative to levels of enumeration. Put simply, there has not only been no improvement in the overall level of Aboriginal survival, but there is some indication that it is actually deteriorating, especially for indigenous women. Decreasing life expectancy for indigenous women has also been recorded by the ABS and AIHW (1997: 92) for Western Australia, South Australia and the Northern Territory. As noted at the beginning of this section, there is enough information available to undertake a thorough investigation of the reasons for lack of improvement in indigenous survival, and it is essential that this investigation should be undertaken as soon as possible.

Unexplained population growth

After allowance for population increase due to births to indigenous women, births to indigenous fathers and non-indigenous women, and deaths of Aboriginal and Torres Strait Islander people, as estimated in the preceding sections of this analysis, there remains a sizeable residual component of population growth between 1991 and 1996. For reasons that have already been explained, it is preferable to avoid leaping to any unwarranted assumption that this unexplained growth is due to 'identification change'.

Table 5. Components of intercensal growth, 1991–96 Aborigines and Torres Strait Islanders

		Total		Male		Female
1991 population		265,465		131,443		134,022
Births (indigenous mothers)	+	41,294	+	21,150	+	20,143
Births (non-indigenous mothers)	+	16,352	+	8,376	+	7,977
Deaths	-	13,632	-	7,789	-	5,843
Unexplained	+	43,543	+	20,650	+	22,893
1996 Population		353,022		173,830		179,192

Table 5 shows the components, including the unexplained numbers as well as the natural increase due to births and deaths. The unexplained component of growth is about 12 per cent of the 1996 population in the case of males, and 13

per cent in the case of females. This is smaller than the proportion of 15 per cent estimated from the Preston-Hill analysis in the previous section of this paper, mainly because the components have been calculated relative to 1996 population size. On the other hand, the unexplained growth amounts to just on 50 per cent of net intercensal growth.

The annual growth rate implied by these estimates is just over 2.6 per cent, at which rate the indigenous population will double in size in 26 years. Without the component due to non-indigenous mothers, the growth rate would be only 1.6 per cent, implying a doubling time of 42 years. This perspective on the contribution of intermarriage to indigenous population growth gives considerable insight into the potential for explosive growth as the incidence of intermarriage continues to rise.

A certain amount of information about the unexplained component can already be inferred from the analysis in this paper. For example, while it is certainly possible that the people concerned contributed to the decreased fertility rates which have been estimated in this paper, if they had lower fertility than the indigenous Australians enumerated in 1991, it is also certain that they must have survival rates that are just like those of other indigenous Australians. The more reasonable explanation for fertility decrease is its secular trend. If the demographic characteristics of people in the unexplained component are similar to those of Aborigines and Torres Strait Islanders, then these characteristics must be totally different from those of other indigenous Australians. In other words, the 'new' Aborigines must be just like the 'old' Aborigines.

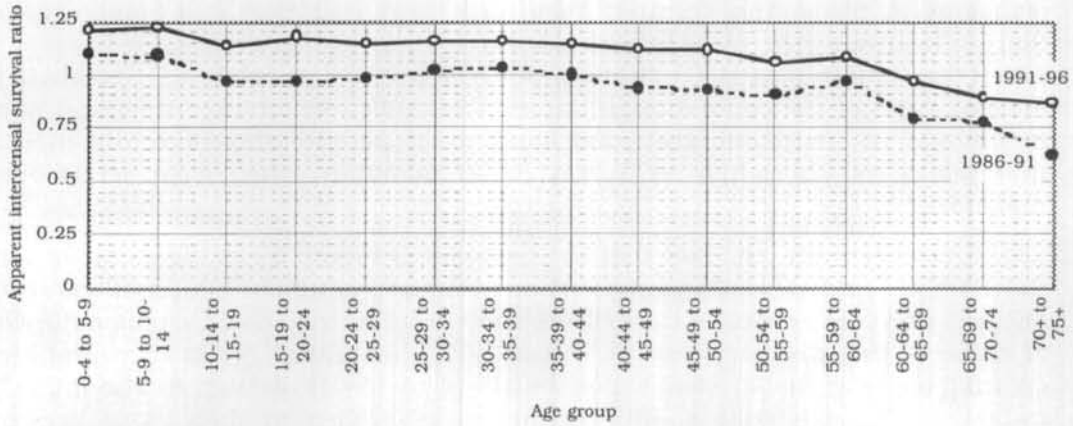
This can be seen most clearly in the age structure of the 1996 indigenous population compared with the 1991 and 1986 enumerations. Figure 5 shows age groups for the 1996 and 1991 Censuses compared with the same group at the previous census. For example, the 5–9 age group in the 1996 Census is divided by the size of the 0–4 age group five years earlier in the 1991 Census to produce the left-most survival ratio for the 1991–96 period. The same calculation is done for each age group to produce a series which has been linked up by lines in the Figure to show the pattern clearly. Theoretically, survival ratios should be less than 1, but only if the only thing affecting the comparison is deaths. Other factors which need to be taken into account are inconsistent recording of age, in either census, systematic undercounting of particular age groups, and for present purposes the 'unexplained' component of population growth.

The reason for comparing these ratios for 1986–91 and 1991–96 is immediately apparent from the figure. It is that the pattern of irregularity in the survival ratios is almost exactly the same for 1991–96 as for 1986–91, only shifted upward. This means that the proportionate age distribution of the indigenous population in 1996 is more or less exactly what it would be expected to be, and only the number of people is higher. If this is so, then the 'new' Aborigines have approximately the same age distribution as the 'old' Aborigines, and nothing like the age distribution of other Australians, which contains a far lower proportion of

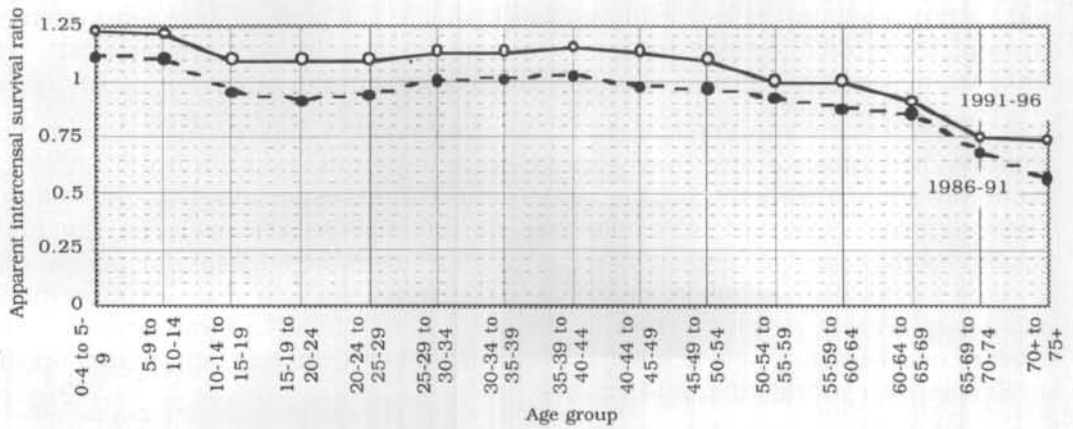
young people and a far higher proportion of old people than the indigenous population.

Figure 5. 1996 indigenous age structures compared to 1991 and 1986 enumerations

Females



Males



As a corollary to the finding that the age structure is as expected, the 'new' Aborigines seem also to have come into scope in the form of entire families or households, rather than age-specific groups of people. This provides important information about the nature of the newly-identified component, because entire households and families can come forward in only two ways. The first way is if they were present in the population previously, but not included in the previous census. The second way is if they were included in the 1991 Census but the

whole household was not identified as Aboriginal or Torres Strait Islander, when in the 1996 Census everyone in the household was. Neither possibility allows 'identification change' to take the form of random, spurious or mischievous claims of Aboriginality, which simply could not conform to expectation so nearly.

In summary, if any of the change in enumeration level is 'identification change', in the sense of newly-discovered or newly-claimed Aboriginality, then the people concerned must look very much like other indigenous Australians in demographic terms and 'changed' their identity as households or families rather than individuals. The most logical place to look for explanation is in the way in which the census is carried out and processed, and the possibilities it presents for missing parts of the population. If the term 'identification change' refers primarily to change in inclusion and identification of people who normally identify themselves as Aborigines or Torres Strait Islanders, then it is perniciously misleading.

Coincidentally, the fact that the patterns in Figure 5 are the same for both the 1986–91 and 1991–96 periods means that any enumeration problems which affected previous censuses exist in the same form in the 1996 Census data. One of these is the absence from the count of a substantial group of young men, creating a dip in the survival ratios for 10–14-to-15–19 through to about 25–29-to-30–34. The existence of this dip in the 1996 Census data as in previous censuses is a certain sign that this enumeration problem has not yet been solved by the ABS and that the census count definitely remains an under-enumeration. The bump in survival ratios around 55–59-to-60–64 shows the survival of a very old pattern, now much less evident than it was in the past, of age over-statement around the qualifying age for age pensions. Relatively high survival ratios for children apparently reflect continuing under-enumeration at the youngest ages.

The most evident implication of this discussion is that the ABS should avoid making the implication that change in indigenous population numbers is something to do with the people being enumerated, especially that they change their identity. It would be preferable for the ABS to acknowledge the many problems that exist in getting Aboriginal and Torres Strait Islander people onto census forms and being recorded as indigenous, and to claim the credit for achieving greater coverage than in the past. It is difficult to know whether the level of enumeration now achieved is approximately complete (apart from specific problems with young men, and infants).

Conclusion

Uncertainty about the total size of the indigenous population does not affect conclusions about the components of growth, because the components were estimated using relative methods. However, it remains very important for both Commonwealth and State Government purposes to gain more certainty about Aboriginal population size and geographic distribution, for the purposes of allocation of grants to the States by the Commonwealth, for judging the

appropriate scale for programs for indigenous Australians, and for placing programs where they are needed. This creates a problem, for producing official estimates of Aboriginal population size, which can really only be solved by counting better. If 'identification change' is illusory, as argued in this paper, then allowance for some rate of changing identification should not be included in official estimates because the allowance made would also be illusory. Counting better requires a complete review of census approaches to enumerating indigenous people and adopting cost-effective methods which will work.

The first step in this process should be research into the way indigenous people identify themselves, how they reveal their identity on forms of various types, and why they might avoid being included on some types of forms completely. No doubt this research topic has not attracted attention because it lacks the quality to excite, but there can be no certainty about census coverage until procedural design can draw on sound findings about these matters.

Studies on inter-marriage between indigenous and non-indigenous Australians are now needed to assess more precisely the rate of growth of the proportion of indigenous children born to non-indigenous mothers, and also to understand the nature of the phenomenon of increasing intermarriage in order to predict its future contribution to indigenous population growth. There are also policy and program implications for this kind of study, since it is already known that differentials in need are associated with family types, as in the case of single-parent families (Daly and Smith 1997).

There is as much need as ever for *action* on Aboriginal death rates, especially in early to middle adulthood. If participants in a national workshop in 1989 could issue a communiqué describing action as a matter of life and death (Gray 1990b), it is a sad reflection on the impact of that message that the situation might actually have worsened in the 1990s.

The explosion of Aboriginality has two components, one controlled and another which will inevitably lead to increasingly higher indigenous population growth. The controlled component is, strange as it may seem, the level of enumeration of the indigenous population. The Aboriginal and Torres Strait Islander population does have a size, even if we do not know what it is, and the process of increasingly higher levels of enumeration in censuses must have an upper limit, after allowing for population growth.

The uncontrolled part of the explosion is the result of increasing out-marriage, which results in far higher numbers of births of children who will be identified as Aboriginal than would be the case if the only factor was the fertility of Aboriginal women, itself high. A simple example tells why. If an Aboriginal man and an Aboriginal woman each have two children, and the man and woman are married to each other, then the next generation has exactly the same size as the parents' generation; but if each is married to a non-Aboriginal person, the number of children is four and the next generation is twice as large. Indigenous births to non-indigenous parents are experiencing logistic lift-off, and will increasingly boost natural growth of the indigenous population way beyond the

growth trend of the rest of the Australian population, for as long as indigenous identity remains separable. Rapid growth will occur even if fertility and mortality patterns of indigenous Australians come to resemble those of the rest of the population, which shows little sign of happening. The estimates in this paper show only slight decline in fertility and no decreases in disturbingly high levels of mortality.

Note

1. Estimates of mean number of children ever born are calculated by assuming that the parity progression ratio (Women with 6+ children)/(Women with 5+ children) applies also for higher parities. This is a reasonable assumption, on empirical evidence from many populations, but estimates become less certain for age groups where the proportion with six or more children is high.

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