NEWS IN FOCUS

BIOSPHOTO\AVALON

Activities such as collecting honey ants (pictured) have a strong cultural value for many Indigenous Australians.

AUSTRALIA

Historical separations still affect Indigenous children

Kids living with adults who were taken from their families are at increased risk of challenges.

BY BIANCA NOGRADY

Indigenous children in Australia who live in families that experienced forced separations in much of the twentieth century are more likely than other Indigenous children to have poor health and negative school experiences, according to a landmark government report released this month.

As many as one in three Aboriginal and Torres Strait Islander children were taken from their families and communities between 1910 and the 1970s, under racist government policies that tried to force Aboriginal people to assimilate with white Australians. The children were brought up in institutions or foster homes, or were adopted by white families. The Australian government formally apologized to members of these 'Stolen Generations' in 2008.

In the latest report, the Australian Institute of Health and Welfare, a government-funded statistics agency, used existing data from surveys of Aboriginal and Torres Strait Islander people to conduct the first national study of how the forced separations have affected children in subsequent generations. Previous reports looked at the impacts of these policies on the Stolen Generations themselves, and on their adult descendants.

"What all of this work around Stolen Generations is showing is that compared to other Aboriginal and Torres Strait Islander ▶

people, the Stolen Generations and their descendants are far worse off," says Richard Weston, a descendant of the Meriam people from the Torres Strait, and chief executive of the Healing Foundation in Canberra, a government-funded organization that is working towards healing for the Stolen Generations and their descendants, and which commissioned the report. "Trauma stays with people, and its impacts are far-reaching and they're profound," says Weston.

The report examined health, cultural and socio-economic measures for about 7,900 Aboriginal and Torres Strait Islander children under the age of 15 who were living in households with at least one member of the Stolen Generations. These measures were compared with those of about 40,800 Indigenous children whose households included no adults who had been removed from their families as children. The relationships between the children and the members of the Stolen Generation in their households were not reported.

The analysis showed that 17.2% of Indigenous children living in Stolen Generations households reported having missed school without permission in the previous year, compared with 4.1% of the reference group. Children in Stolen Generations families were also nearly twice as likely to report having been "treated unfairly" at school because they were Indigenous, and 26% of Indigenous children living in Stolen Generations households rated their health as poor, compared with 19.2% of the comparison population.

"The results from the survey show how much suffering is still being endured from these policies."

Children living in Stolen Generations households were also 1.8 times as likely to have experienced stress in the previous 12 months, and 60% less likely to live in a home owned by a household member.

The analysis also considered the effects of other factors on the children's health and socio-economic measures irrespective of whether they lived in a Stolen Generations household, such as age and gender, and whether the children lived in a remote area or in a household with someone who was employed, had completed school or had been incarcerated. The results show that removal has intergenerational effects even after controlling for these factors.

The report concludes that children living in a Stolen Generations household were more likely to experience adverse outcomes than were other Indigenous children, and that this "demonstrates a transfer of intergenerational poverty and trauma".

"The results from the survey show how much suffering is still being endured from these policies," says Maggie Walter, a Palawa woman from Tasmania and a sociologist at the University of Tasmania in Hobart. "It is ricocheting through generations."

But the report did find that Indigenous children living in Stolen Generations households were twice as likely as Indigenous children not living in these households to identify with a clan, tribal or language group, and to recognize an area as homeland.

Although the report highlights the difficulties these children face, Walter worries that focusing on households will inadvertently place the blame on them. "What we need to be looking at is wider social and cultural reality in which that family, both current and previous generations, have lived their lives." ■

METROLOGY

Pressure gets an upgrade

A 400-year-old method for measuring the quantity has a rival based on quantum physics.

BY ELIZABETH GIBNEY

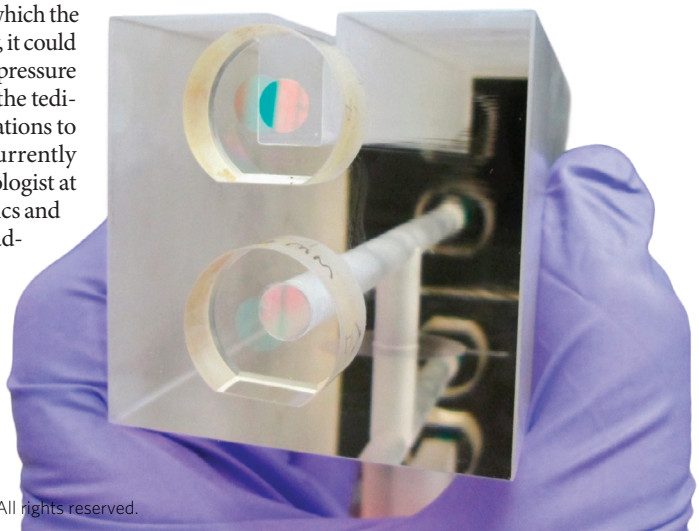
Researchers in the United States have developed a new way to define and measure pressure and its unit, the pascal — one that they say will, within a year, begin to replace the mercury-based measurement methods that have been in use since 1643.

Pressure is conventionally defined as force per unit area, and the pascal is a force of 1 newton per metre squared. For nearly 400 years, values at air pressure and below have been measured using mercury-based instruments called manometers. The US National Institute of Standards and Technology (NIST) in Gaithersburg, Maryland, holds one of a handful of the world's most precise manometers, known as primary standards — huge instruments that serve as the benchmarks against which all other pressure sensors are calibrated. But NIST scientists have now developed a highly precise method for measuring pressure that is based on treating it as energy density. This is an equivalent physical description to force per unit area because it is derived from the same combination of 'base' units, the most fundamental units of measure in the International System of Units (SI).

The NIST method involves probing atoms of gas in a cavity directly with a laser to determine their pressure. The team hopes to show in the next year that its apparatus can rival the manometer — and to encourage other metrology labs to use it as their primary standard.

If widely accepted by the metrology community, the method would do away with the need for mercury, which is toxic and faces international bans. Moreover, the new technique allows metrologists to measure pressure directly, using a fundamental constant of nature, and does not rely on previous measurements of other quantities, such as density, on which the manometer depends. In theory, it could also allow anyone to measure pressure from first principles without "the tedious work of" a chain of calibrations to a primary standard that is currently required, says Bo Gao, a metrologist at the Technical Institute of Physics and Chemistry of the Chinese Academy of Sciences in Beijing, who works on a related method to measure low temperatures. The technique could enable faster measurements with more-portable equipment, benefiting industries such as aviation and semiconductor manufacturing.

Metrologists have long wanted to replace manometers, the principles of which date back to the mercury pressure gauge invented by Italian physicist Evangelista Torricelli in 1643. Modern manometers have two tall columns of mercury, and measure the force exerted on a surface due to a pressure by balancing it against the force generated by the weight of mercury.



NIST

The FLOC measures gas pressure using lasers.