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Short communication

Tsimane' Amazonian Panel Study (TAPS): The first 5 years (2002–2006) of socioeconomic, demographic, and anthropometric data available to the public

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ABSTRACT

The Tsimane' Amazonian Panel Study (TAPS) is making available the first five years (2002–2006, inclusive) of annual socioeconomic, demographic, and anthropometric data available to the public. The information comes from a foraging-farming society of native Amazonians in Bolivia and includes 13 villages, 332 households, and 1985 people who have been tracked annually since 2002. The article provides a brief overview of the data covered and the steps needed to access the data.

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1. Introduction

Panel (longitudinal) studies – repeated formal measures taken over time from the same people and households – generally yield valuable data sets; however, to date they have not been widely applied in anthropology to study rural indigenous peoples. Panel studies have been effectively used by human biologists and other population health researchers to study growth and maturation and their long-term health consequences in populations around the world (e.g., the FELS Longitudinal Study: Roche, 1992; the South African birth to ten study: Cameron, 2003; Steyn et al., 2000; The Amsterdam Growth Study: Kemper, 1995). In rural areas of low-income nations, panel research has been used by development economists (e.g., International Crops Research Institute for the Semi-Arid Tropics, ICRISAT, 2006) and international health and nutrition researchers (the INCAP Longitudinal Study: Martorell and Scrimshaw, 1995; the Cebu Longitudinal Health and Nutrition Survey: Adair and Popkin, 2001; Adair et al., 1990) to explore the impact of changing patterns of food production and availability on human health and nutritional status.

Cultural anthropologists have often followed people from selected communities over decades (e.g., Kemper and Royce, 2002), but the information they have collected does not meet the requirements of a panel study because typically the same individuals or households are not systematically tracked over time. Panel studies in cultural and biological anthropology are potentially valuable because they allow one to assess maturation and development as they unfold over the life cycle. The use of cross-sectional information to infer life-cycle dynamics can produce misleading results in the presence of strong cohort effects (e.g., Tanner, 1986). Panel studies are particularly valuable for studying indigenous peoples who are now experiencing rapid changes whose effects are traceable over a short time (e.g., 5 years). The study of those changes through

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panel observations can yield very valuable information about how processes such as integration into the market economy affect cultural (identity, traditional knowledge), economic (income, consumption), psychological (happiness), and biological (health, nutrition, growth) dimensions of well-being.

Here we describe an ongoing panel study among the Tsimane', a farming and foraging society of native Amazonians in Bolivia experiencing rapid integration into the National and International Market Economy. The panel includes 13 villages, about 332 households, and about ~1985 people who have been tracked annually since 2002. We believe this panel study is unique in anthropology and, more broadly, in the behavioral sciences. The purpose of the Tsimane' Amazonian Panel Study (TAPS) is to document the effects of exposure to the market economy and to the modern world on a broad range of socioeconomic, cultural, health, psychological, and biological indicators of well-being measured once a year (June–August). The first 5 years of data, 2002–2006 (inclusive), are now available to the public at <http://people.brandeis.edu/~rgodoy/research/pgs/panel.html>. Core funding for TAPS has mainly come from the programs of cultural and biological anthropology of the National Science Foundation (USA).

2. Background

The present panel study was preceded by 7 years (1995–2001) of pilot research that served to identify communities, win the trust of villagers, train local researchers, build logistical infrastructure, and refine methods of data collection. The team includes researchers from the following institutions: (i) CBIDSI (Centro Boliviano de Investigación y Desarrollo Sociointegral), a local non-government organization that specializes in development work among native Amazonians in Bolivia, (ii) Northwestern University, (iii) the Autonomous University of Barcelona, (iv) the University of Georgia, (v) Cornell University, (vi) ICRISAT (International Crops Research Institute for the Semi-Arid Tropics), and (vii) Brandeis University. The team includes cultural (R. Godoy, T. Huanca, and V. Reyes-García) and biological anthropologists (W. Leonard, T. McDade, and S. Tanner), an agronomist (V. Vadez), and an experimental development economist (O. Heffetz).

The purposes of TAPS are threefold (a) to document the effects of market exposure and modernization on diverse indicators of well-being, (b) to provide on-the-ground training to indigenous and Bolivian researchers and international students in methods of data collection and analysis, and (c) to implement development projects that help the Tsimane'.

3. Methods and analytic approaches

No study can survive in a rural area of a low-income country without making meaningful contributions back to the community. Any payment will affect the integrity of the study in the sense that one cannot track the unbiased effects of market exposure and modernization on well-being since the payback might affect the indicators of well-being measured. This caveat aside, the approach includes research, training, and development.

3.1. Research

Annual measures of the following indicators of well-being were taken, typically at the individual level:

- (i) *Economy*. Income, food consumption (including wildlife and other natural resources), barter, expenditures (since 2004), and individual and household wealth.
- (ii) *Social capital*. Expressions of pro-social behavior with the rest of the community and with outsiders, borrowing of physical assets.
- (iii) *Biological and health indicators*. Anthropometric indicators of short and long-run nutritional status, perceived health, and (for selected years) objective indicators of health (e.g., parasite load, C-reactive protein, and anemia).
- (iv) *Psychological states*. e.g., smiles and self-reported fear, anger, and sadness.
- (v) *Human capital*. Ethnobotanical knowledge, school attainment, academic skills (tests of math, reading, and writing).

In the TAPS website we have uploaded the data dictionary as text file and as an Excel spread sheet indicating the definition of the variable each year and the years for which we measured the variable.

3.2. Development

Our work to benefit the Tsimane' has included randomized and non-randomized development interventions. Examples of interventions include the introduction of a new crop (e.g., pigeon pea) and new practices to improve health (e.g., vaccination campaigns coordinated with the local hospital). The core of the interventions center on the introduction of a cover crop new to the area that has the potential to fix nitrogen, improve human nutrition, and reduce pressure to clear forest. Development interventions also include projects to reduce parasitic infections, widespread in the area. A novel-applied research in progress includes the use of an experimental research design to assess the impact of participatory community mapping of village territories on land encroachment.

3.3. Training

The core of the training program has centered on Ph.D. students in cultural anthropology and related disciplines, such as biological anthropology and human ecology. TAPS trains Ph.D. students in a broad range of methods to collect socioeconomic and biological data. In addition, we have provided more targeted training in the form of workshops to enhance the skills of Bolivian undergraduate students and Tsimane' working on the research team.

4. Results and accessing TAPS data

To date, the TAPS data have been mainly used in cross-sectional analysis by TAPS staff, but the data is now ready for use by the public as a panel. TAPS has put its research in progress as working papers on its web site to encourage rapid dissemination of results. Most working papers are afterwards published in journals in human biology, anthropology, history, psychology, and development economics. The TAPS web page includes PDF files of all working papers and published articles. *The Economist* and the *BBC* recently featured TAPS research. Since 2004 TAPS has trained 20 doctoral students from USA universities and six doctoral students from European universities. Six students in cultural and biological anthropology have received or will soon receive their Ph.D. using TAPS data.

To access TAPS data. Researchers should go to the TAPS web site noted earlier to obtain information on the variables for the 2002–2006 panel data. The 2002–2006 panel data is in STATA 10, already stacked across years, and ready to use as a unified data set.

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