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Hannum, EC, *et al* (2011) The Gansu Survey of Children and Families, Wave 3
 ESRC End of Award Report, RES-167-25-0250. Swindon: ESRC

ECONOMIC AND SOCIAL RESEARCH COUNCIL END OF AWARD REPORT



For awards ending on or after 1 November 2009

This End of Award Report should be completed and submitted using the **grant reference** as the email subject, to **reportsofficer@esrc.ac.uk** on or before the due date.

The final instalment of the grant will not be paid until an End of Award Report is completed in full and accepted by ESRC.

Grant holders whose End of Award Report is overdue or incomplete will not be eligible for further ESRC funding until the Report is accepted. ESRC reserves the right to recover a sum of the expenditure incurred on the grant if the End of Award Report is overdue. (Please see Section 5 of the ESRC Research Funding Guide for details.)

Please refer to the Guidance notes when completing this End of Award Report.

Grant Reference	RES-167-25-0250		
Grant Title	The Gansu Survey of Children and Families (GSCF) Wave 3		
Grant Start Date	May 1 2007	Total Amount Expended:	\$ 415,607.28 (USD)
Grant End Date	December 31 2010		(conversion to GBP at current exchange rates) £ 256,571.00 (GBP)
Grant holding Institution	University of Pennsylvania		
Grant Holder	Emily Carroll Hannum		
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Co-Investigators (as per project application):	Institution		
Albert Park	Oxford		
Jennifer Adams	Stanford		
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Xuehui An	Northwest Normal University/National Center for Educational Development Research		
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1. NON-TECHNICAL SUMMARY

Please provide below a project summary written in non-technical language. The summary may be used by ESRC to publicise your work and should explain the aims and findings of the project. *[Max 250 words]*

The GSCF is a longitudinal study of education, health and economic outcomes of poor children in a poor, developing country setting. The project measures economic, social, and cultural attributes of families, schools and communities, and contains an extensive set of educational, economic, and psychological and physical health indicators. The GSCF's prospective, longitudinal design enables more convincing estimation of causal relationships than cross-sectional, retrospective data. Broad conceptualizations of health and education draw on the interdisciplinary perspectives of GSCF researchers. Finally, the GSCF focuses exclusively on a disadvantaged, rural subpopulation to achieve a higher degree of measurement validity than would be possible in a survey designed for the general population. The GSCF research design has been informed by consultations with China's Ministry of Education and Centers for Disease Control, and the World Bank, particularly in relation to their work with DfID in Gansu Province. The project has supplied reports on both health and education issues to the World Bank, and work from the project has been presented at numerous conferences. Collaborative analyses made possible by the GSCF data have enabled policy insights about public health, education, and poverty. More broadly, the GSCF suggests new measurement strategies in the fields of sociology, economics, public health and education. Finally, and most significantly, the GSCF is contributing to scholarly understanding of the role played by human capital, defined to include both health and education components, as a catalyst for upward mobility among the world's rural poor.

2. PROJECT OVERVIEW

a) Objectives

Please state the aims and objectives of your project as outlined in your proposal to the ESRC. *[Max 200 words]*

This project was motivated by the following questions:

1. What are the impacts of childhood nutrition and health on subsequent education outcomes?
2. What are the impacts of childhood nutrition and health on indicators of psychological well-being?
3. What is the correlation between psychological well-being and education outcomes, and how does the evolution of behavioral and psychological problems over time vary by family, school and community characteristics?
4. What are the impacts of childhood nutrition and health on the decision to stay in school or enter the workforce?
5. How do education outcomes, including specific cognitive skills, affect the labor force productivity

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of young adults?

6. What are the impacts of childhood nutrition and health, both directly and indirectly through education, on the labor productivity of young adults?

To address these questions, we extended the GSCF, a longitudinal survey of 2000 children who were 9 to 12 years old when they were first interviewed in the year 2000 (GSCF-1), and who were re-interviewed at ages 13 to 16 in 2004 (GSCF-2). We proposed to collect and analyze a third wave of data, when the original sample would be young adults.

Findings are listed below, with citations to a reference list and papers uploaded to the ESRC website.

b) Project Changes

Please describe any changes made to the original aims and objectives, and confirm that these were agreed with the ESRC. Please also detail any changes to the grant holder's institutional affiliation, project staffing or funding. *[Max 200 words]*

Changes to project: We initially proposed to collect wave 3 in 2008. We secured funding from the World Bank for collecting data from a new sample, along with our original sample, if we were able to collect the data in 2007. We thus collected household information from our sample in 2007, along with the new sample full survey. We returned in 2009 and collected survey information from all original children in the sample.

A grant extension was provided due to maternity leave of Emily Hannum.

Changes in personnel: Emily Hannum moved to Oxford during the course of the project, but returned to Penn and so the grant was not transferred.

Changes in funding: we were able to secure outside funding to supplement support for a project workshop and conference at

Oxford: http://www.ccsp.ox.ac.uk/_data/assets/word_doc/0011/10271/Conference_tentative_program_2.doc

We also secured additional outside support to cover personnel costs, qualitative data collection (retrospective interviews with subjects in two villages) and some student work on the project.

We consulted and received approval from ESRC for 1. We were in regular contact and provided reports to ESRC about 2 and 3.

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c) Methodology

Please describe the methodology that you employed in the project. Please also note any ethical issues that arose during the course of the work, the effects of this and any action taken. *[Max. 500 words]*

We employed survey data collection and analysis, along with a small qualitative component that involved retrospective interviewing with members of the original sample in two of the 100 villages in the sample. The project team is interdisciplinary, including scholars in sociology, economics, education, and human development. The research team employed statistical methods traditional in their disciplines to address research questions. In general, the approach taken was to estimate statistical models (of a type appropriate to the outcome variable) to investigate the effects of the background factors discussed in the objectives section on children's outcomes (health, psychosocial well-being, educational achievement and attainment, migration decisions, labor outcomes). The specific relationships addressed are listed in the findings section.

The project's IRB (REC) certification is current at Penn, and to our knowledge, no ethical issues arose during the course of the project.

d) Project Findings

Please summarise the findings of the project, referring where appropriate to outputs recorded on the ESRC website. Any future research plans should also be identified. *[Max 500 words]*

1. The poorest children are at greatest risk of poor nutritional environments, food insecurity, stunting, and wasting, and evidence suggests a causal impact of income shocks on nutritional deprivation (Yu and Hannum 2007; Hannum, Liu and Frongillo 2010; Leight 2010; Glewwe, Leight, and Park 2011). Home nutritional environment, food insecurity and early nutritional deprivation predict achievement, though some effects of early nutritional deprivation on achievement dissipate over time or with controls for earlier achievement (Yu and Hannum 2007; Hannum, Liu and Frongillo 2010; Glewwe, Leight, and Park 2011). Ongoing research is investigating the impact of micronutrient deficiency on education-related behaviors and outcomes.

Analyses of Gansu data and an add-on randomized trial suggest significant unmet need for vision correction in rural Gansu; show a significant effect of improved vision on scores, literacy tests, and likelihood of achieving passing grades; and highlight the socioeconomic and academic selection into vision problems (Glewwe, Park and Zhao 2010; Hannum and Zhang 2008).

2. The impact of early childhood health shocks on psychological well-being is more pronounced at age 9-12 than at age 13-16 (Glewwe, Leight, and Park 2011). Children's reports of immediate hunger are associated with disruptive behavior in the classroom, and with internalizing and externalizing problems (Hannum, Liu, and Zhang 2011).

3. Boys and girls in later stages of adolescence are increasingly vulnerable to internalizing problems, and higher levels of "cumulative adversity" are associated with more internalizing problems among

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boys (Davidson 2010). Indicators of psychological well-being are moderately negatively correlated with academic achievement test scores, and externalizing behaviors are associated with receiving corporal punishment in school and a lower likelihood of staying in school (Adams and Hannum 2010; Glewwe, Huang, and Park 2010). Migration of fathers may increase the likelihood of behavioral problems at school (Lee and Park 2010; Adams and Hannum 2010), whereas parental warmth and teacher support operate as protective factors in the impact of adversity on internalizing problems (Davidson 2010).

4. Psychological well-being is positively associated with staying in school and negatively associated with entering the workforce (Glewwe, Huang, and Park 2010). Nutritional deprivation and poor nutritional environment in early life predicts years of schooling completed (Zhao and Glewwe 2009; Hannum and Yang 2011).

5. Test scores and early performance predict school continuation, for girls and boys (Zhang, Kao and Hannum 2007; Hannum and Adams 2008; Hannum, Kong and Zhang 2009; Glewwe, Huang, and Park 2010). Performance on high-stakes exams at the upper secondary and tertiary stage condition the likelihood and type (vocational or academic) of educational transitions (Hannum, An and Cherng 2011). However, test scores exert little impact on early labor market wages, conditional on years of schooling (Glewwe, Huang, and Park 2010).

6. Psychological well-being during youth is positively associated with years of schooling and with subsequent labor market earnings, even after controlling for years of schooling (Glewwe, Huang, and Park 2010). As described earlier, early childhood health conditions cognitive and noncognitive skills, which are associated in turn with years of schooling and, for psychosocial well-being, labor productivity.

e) Contributions to wider ESRC initiatives (eg Research Programmes or Networks)

If your project was part of a wider ESRC initiative, please describe your contributions to the initiative's objectives and activities and note any effect on your project resulting from participation.

[Max. 200 words]

Consistent with the ESRC/DfID Joint Scheme for Research on International Poverty Reduction, another goal of the GSCF was to investigate institutional contexts of children's social mobility. Selected findings follow.

Families: Educational mobility is a key goal of parents in rural Gansu (Kong 2010), but sons and daughters of wealthier, better educated parents enjoy a better home environment for learning and greater chances achieving educational mobility (Hannum and Park 2007; Hannum, An and Cherng 2011; Cherng and Hannum 2011). Parental educational expectations are consistently tied to subsequent outcomes (Adams and Hannum 2007; Zhang 2011c).

Schools: The GSCF team has produced policy reports cataloging resources in schools (Hannum and Kong 2007) and evaluating fee remission policies (Park and Shi 2010) and papers on finance and

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management (Li, Park and Wang 2007; Liu, Murphy, Tao and An 2009); teacher quality (An 2008; An and Xie 2008; An, Hannum and Sargent 2008; Karachiwalla and Park 2010); teacher expectations for children (Adams and Hannum 2008; Yiu and Adams 2011; Zhang 2011); teacher work satisfaction and career development (Sargent and Hannum 2005; An 2008a; Sargent and Hannum 2009); curricular reforms (Sargent 2009; Sargent 2011; Adams and Sargent 2011); and disciplinary climate (Adams and Hannum 2011).

3. EARLY AND ANTICIPATED IMPACTS

a) Summary of Impacts to date

Please summarise any impacts of the project to date, referring where appropriate to associated outputs recorded on the ESRC website. This should include both scientific impacts (relevant to the academic community) and economic and societal impacts (relevant to broader society). The impact can be relevant to any organisation, community or individual. *[Max. 400 words]*

- Download counts and citations. The GSCF repository (<http://repository.upenn.edu/gansu/>) serves as an archive of working papers, publications, and student papers from the project, and facilitates download and citation. Download counts are provided to each author; the majority of the papers in the series have received hundreds of full-text downloads. Though a lag is to be expected between downloads and citations, papers based on GSCF data are beginning to show citations in Google Scholar and other citation databases.
- Hannum has made two presentations at the World Bank on gender and education in rural China, using GSCF data: "Gender and Educational Access among China's Youth: Evidence from Recent Censuses and Surveys," at the World Bank Global Symposium on Gender, Education and Development (Washington DC: October 2007), and "Family Sources of Educational Gender Inequality in Rural China," at the Human Development Network meetings at the World Bank Human Development Forum (Washington DC: November 2008).
- Park presented the results of his study with Lee on the impact of parental migration on child development at a Young Lives Conference in Oxford in December 2008, and plans to present it at the annual World Bank-IZA Migration Conference in Washington DC in May 2011. Both conferences include an international audience of policy makers, development organizations, and researchers. Park, Lee, and De Brauw contributed a chapter to a Young Lives edited volume targeting this broader audience.
- Park made a presentation on the importance of longitudinal studies of children, drawing from the experience of the GSCF, to the Young Lives International Conference in Oxford in March 2009, which included an international audience of policy makers and development practitioners.
- Based largely on experiences fielding the GSCF, Hannum was invited to join the International

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Advisory Committee of the China General Social Survey, and participated in a February 2011 International Advisory Committee meeting to discuss modifications to design.

- Results of the Gansu Vision Intervention Project are being featured in a Freakonomics Radio broadcast on NPR Marketplace program, April 2011. They have also been publicized by the Rural Education Action Project at Stanford University via policy briefs, and been written into policy briefs on challenges facing children in poor areas submitted by the China Center for Agricultural Policy of the Chinese Academy of Sciences to the Chinese government (Premier's office).

b) Anticipated/Potential Future Impacts

Please outline any anticipated or potential impacts (scientific or economic and societal) that you believe your project might have in future. *[Max. 200 words]*

Ongoing research is investigating migration decisions and consequences for rural youth (e.g., Chiang, Kao and Hannum 2011) and non-traditional modes of upward mobility (Adams and Hannum 2011). Adams and Hannum are also using GSCF data, along with retrospective interview transcripts collected in 2009 from respondents in two villages, to develop a book-length manuscript on sources of and barriers to mobility in poor rural communities. Park and Lee are working on parental migration and child development (e.g., Lee and Park 2010; Park, Lee and De Brauw 2010). We anticipate that these projects will have a scientific impact in the fields of sociology, economics, and education.

Additional impacts of the project are anticipated to occur through students trained on the project, and through other users of the data. Penn, Michigan, Harvard, Stanford, Minnesota, Northwest Normal and Oxford students have participated in the GSCF, and many have written theses or dissertations with the data. Many students have gone on to academic careers, and are continuing to work on GSCF data or related projects. In addition, at least 40 new users have registered (<http://china.pop.upenn.edu/Gansu/data.htm>) in the year since access to waves 1 and 2 opened, and more requests come in every few weeks.

You will be asked to complete an ESRC Impact Report 12 months after the end date of your award. The Impact Report will ask for details of any impacts that have arisen since the completion of the End of Award Report.

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4. DECLARATIONS

Please ensure that sections A, B and C below are completed and signed by the appropriate individuals. The End of Award Report will not be accepted unless all sections are signed. Please note hard copies are NOT required; electronic signatures are accepted and should be used.

A: To be completed by Grant Holder

Please read the following statements. Tick ONE statement under ii) and iii), then sign with an electronic signature at the end of the section (this should be a image of your actual signature).

i) The Project

This Report is an accurate overview of the project, its findings and impacts. All co-investigators named in the proposal to ESRC or appointed subsequently have seen and approved the Report.	<input checked="" type="checkbox"/>
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ii) Submissions to the ESRC website (research catalogue)

Output and impact information has been submitted to the ESRC website. Details of any future outputs and impacts will be submitted as soon as they become available.	<input checked="" type="checkbox"/>
OR This grant has not yet produced any outputs or impacts. Details of any future outputs and impacts will be submitted to the ESRC website as soon as they become available.	<input type="checkbox"/>
OR This grant is not listed on the ESRC website.	<input type="checkbox"/>

iii) Submission of Datasets

Datasets arising from this grant have been offered for deposit with the Economic and Social Data Service.	<input checked="" type="checkbox"/>
OR Datasets that were anticipated in the grant proposal have not been produced and the Economic and Social Data Service has been notified.	<input type="checkbox"/>
OR No datasets were proposed or produced from this grant.	<input type="checkbox"/>