

## SOCIAL POLICY

# Targeting programmes effectively

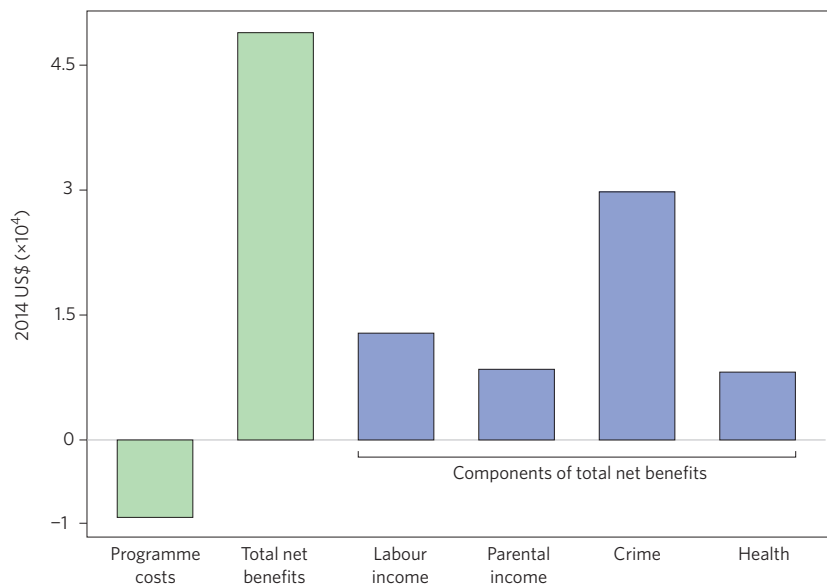
A study now shows that 20% of the population accounts for 60–80% of several adult social ills. Outcomes for this group can be accurately predicted from as early as age 3 years, using a small set of indicators of disadvantage. This finding supports policies that target children from disadvantaged families.

James J. Heckman and Jorge Luís García

In the past 10 years or so, there has been growing public support for early-childhood programmes. The most effective programmes target children from disadvantaged families<sup>1</sup>. Despite this evidence, many politicians and thought leaders continue to promote universal programmes, primarily on political grounds<sup>2</sup>.

A new study by Caspi *et al.*<sup>3</sup> contributes substantially to the body of evidence supporting targeted early-childhood programmes by analysing rich longitudinal data from a large and representative sample of New Zealand children. The authors follow subjects over the course of their lives from birth through to age 38 years<sup>4</sup> and enrich their primary sample with matched individual records from a variety of administrative data sources. They report that 20% of the sample accounts for 60–80% of a variety of adult social ills manifested by sample members. A small set of childhood indicators of disadvantage (low IQ, low self-control, childhood maltreatment and low family socioeconomic status) are powerful predictors of multiple lifetime problem behaviours related to health, crime, education, earnings and social engagement.

This study advances well beyond the approach typically used in studies of child development. The standard approach predicts one outcome at a time using measures of family disadvantage. Instead, the authors predict constellations, or aggregates, of behaviours, and show that a short list of indicators of early disadvantage is powerfully predictive of who exhibits the clusters of adverse adult outcomes. There are many possible measures and clusters of measures of adverse adult outcomes that might be included in the aggregates. However, the authors show that their compelling results do not rely on the choice of any particular measure. There is a core group of disadvantaged children who contribute to many social ills when they are adults even when aggregates are formed in different ways. Their analysis identifies a



**Figure 1** | Net present value of the main components of the life-cycle benefit-cost analysis of the Carolina Abecedarian Project (ABC) and the Carolina Approach to Responsive Education (CARE). Programme costs indicate the total cost of ABC/CARE, including the welfare cost of taxes to finance it. For total net benefits, all of the components were considered. These include labour income, the total individual labour income from age 20 years to the retirement of programme participants (assumed to be at age 67 years); parental income, the total parental labour income of the parents of the participants from when the participants were ages 1.5 to 21 years (this arises from subsidizing childcare); crime, the total cost of crime (judicial and victimization costs); and health, gain corresponding to better health conditions until predicted death. The per-annum rate of return and the benefit-cost ratio for males and females was 13% (standard error 5%) and 6.3 (standard error 2.1), respectively. Figure adapted from J. L. García, J. J. Heckman, D. E. Leaf & M. J. Prados, manuscript in preparation.

group of individuals for whom interventions might be effective. It suggests a source group for major social problems.

The emphasis of this paper is, however, on predicting adverse adult outcomes. Evidence that childhood adversity predicts adult adversity is an important building block for shaping an effective policy intervention. But the paper stops short of providing any evidence on which, if any, interventions might be effective in preventing the adverse adult behaviours grouped in their clusters. It does not inform us of whether their empirical relationships are due to genes or environments, nor does

it conduct any mediation analyses to unpack the channels of environmental influences that produce adult adverse outcomes.

Fortunately, there is a body of literature that is consistent with the evidence in this paper that provides guidance on the effectiveness of early-childhood interventions and their channels of influence. Early-childhood interventions in the United States, evaluated by the method of random assignment, have followed disadvantaged children up to ages 30–40 years, the same range of ages reported in this paper. The interventions provide enriched early-childhood environments to

disadvantaged children. Their findings are relevant today because they are founded on basic principles of child enrichment that are widely implemented in a variety of new and ongoing programmes.

The economists studying these interventions use benefit–cost and rate of return analyses to place diverse outcomes on a common and interpretable footing of a money metric. Doing so produces policy-relevant aggregates. If a social programme provides benefits above the market opportunity cost of funds, it is socially efficient to invest in that programme.

These programmes enrolled disadvantaged children comparable to those in the Dunedin New Zealand sample analysed by Caspi and co-workers. Multiple adult outcomes are measured that are similar to the ones used by the authors, including health, healthy behaviours, crime and smoking.

For example, the High/Scope Perry Preschool Program targeted disadvantaged 3–4-year-old children<sup>5</sup>. An analysis of this programme<sup>6</sup> reports an overall benefit–cost ratio of 7 to 1 with a rate of return of 7–10% per annum<sup>6</sup>. (The rate of return is the rate at which a dollar investment increases in value each year after the programme is implemented.) These benefits account for the welfare cost of using public revenue to

finance the costs, counting various forms of tax avoidance.

The Carolina Abecedarian Project (ABC) and the Carolina Approach to Responsive Education (CARE) started earlier (subjects were first enrolled at age eight weeks) and children stayed in the programme until they were 5 years old. Follow-up continued through their mid-thirties<sup>7</sup>. A recent study reports a benefit–cost ratio of 6 to 1 with a rate of return of 13% a year, again accounting for any distortions caused by public funding (J. L. García, J. J. Heckman, D. E. Leaf & M. J. Prados, manuscript in preparation). Figure 1 shows the total value of the monetized benefits and their components across major life domains.

Recent papers<sup>8,9</sup> show the causal channels through which these effects are obtained. It would be productive to examine the mediators of the Dunedin study to assess the role of family and social influences. The authors are well positioned to do so.

The body of evidence in the cited papers, coupled with the evidence from Caspi and colleagues, all point to the multiple benefits to society of detecting and addressing the conditions of disadvantaged children at an early stage. Targeting disadvantaged children is effective social policy. □

James J. Heckman is Director of the Center for the Economics of Human Development, 5750 S. Woodlawn Avenue, Chicago, Illinois 60637, USA; Henry Schultz Distinguished Service Professor in the Department of Economics at the University of Chicago, 1126 East 59th Street, Chicago, Illinois 60637, USA; and Research Professor at the American Bar Foundation, 750 North Lake Shore Drive, Chicago, Illinois 60611-4403. Jorge Luís García is a PhD candidate in the Department of Economics at the University of Chicago, and a Senior Research Assistant at the Center for the Economics of Human Development. e-mail: [jheckman@uchicago.edu](mailto:jheckman@uchicago.edu)

## References

1. Elango, S., García, J. L., Heckman, J. J. & Hojman, A. in *Economics of Means-Tested Transfer Programs in the United States* Vol. 2 (ed. Moffitt, R.) Ch. 4, 235–297 (Univ. Chicago Press, 2016).
2. *Ready to Launch: New York City's Implementation Plan for Free, High-Quality, Full-Day Universal Pre-Kindergarten* (New York Department of Education, 2014).
3. Caspi, A. *et al.* *Nat. Hum. Behav.* **1**, 0005 (2016).
4. Poulton, R., Moffitt, T. E. & Silva, P. A. *Soc. Psych. Psych. Epid.* **50**, 679–693 (2015).
5. Weikart, D. P. *Longitudinal Results of the Ypsilanti Perry Preschool Project* (Monographs of the High/Scope Educational Research Foundation No. 1, High/Scope Educational Research Foundation, 1970).
6. Heckman, J. J., Moon, S. H., Pinto, R., Savelyev, P. A. & Yavitz, A. Q. *J. Public Econ.* **94**, 114–128 (2010).
7. Ramey, C. T., McGinness, G. D., Cross, L., Collier, A. M. & Barrie-Blackley, S. in *The Social Life of Children in a Changing Society* (ed. Borman, K. M.) Ch. 7, 145–174 (L. Erlbaum Associates, 1982).
8. Conti, G., Heckman, J. J. & Pinto, R. *Econ. J.* (in the press).
9. Heckman, J. J., Pinto, R. & Savelyev, P. A. *Am. Econ. Rev.* **103**, 2052–2086 (2013).