# A New Method for the Detection of Multiple-Partner Fertility in Social Surveys: The Age Reporting Discontinuity (ARD)

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## Abstract

Demographers have developed a number of methods to estimate cohort and period fertility. With changes in rates of nuptiality, increased marital dissolution, and growth in cohabitation and recoupling, new methods are required to estimate multiple-partner fertility. Recently a new, exploratory method for the study of reproduction with multiple partners was proposed: The Age Reporting Discontinuity (ARD). Yet, the formal model and its sensitivities were not specified. Using inmate data on the number, ages, and reporting order of children by incarcerated fathers, I show that ARD has an overall accuracy rate of 91.8% when benchmarked to data on ever incarcerated men in the 2002 National Survey of Family Growth (NSFG) Male Supplement. This method is particularly useful for analyses of father absence and family disruption, but general usage may allow for calculating historical estimates of multiple-partner fertility in social surveys that do not inquire about reproduction with several partners.

Key words: incarceration, multiple partner fertility, measurement, ARD, reproduction

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## Introduction

A recent issue of *The Annals of the American Academy of Political and Social Science* focuses on increasing family complexity and the implications for children in the United States (Carlson and Meyer, 2014). Furstenberg (2014: 13), for instance, discusses the decoupling of sex from marriage, the general weakening of institutional marriage, and changes in nonmarital childbearing over the last fifty years. A consequence of this demographic shift in nuptiality and fertility has been the emergence of, and increases in, multiple-partner fertility (MPF). Recent estimates indicate that about 13 percent of men 40-44 and almost 1-in-5 women 41-49 have children with more than one partner (Guzzo, 2014). Overall, nearly 8% of all American men 15-44 had a child with more than one partner (Guzzo and Furstenberg, 2007), although research finds that the incomplete reporting of births in different surveys varies by the socioeconomic characteristics of men (Joyner et al., 2012).

Nevertheless, the changing landscape of reproduction, union formation, and relationship dissolution means that demographic techniques must keep pace with shifts in social life. Currently there is no method to estimate historical changes in multiple-partner fertility in surveys that do not ask about children with several partners. Classic methods like the Princeton Fertility Indices focus on fertility limitation and the conductivity of reproduction within marriage independent of birth order (Wachter, 2014: 141-145), and parity progression ratios mix marital and non-marital fertility by birth order in ways that make detecting and distinguishing changes in period and cohort reproduction difficult to measure.

Sykes and Pettit (2014) presented an exploratory, indirect method for the detection of multiple-partner fertility over time called the Age Reporting Discontinuity (ARD). However, due to space constraints and the aims of their article, they did not provide a formal model, elaborate on assumptions, or show sensitivities to their method. This paper extends their work by interrogating and validating ARD as a possible method for multiple-partner fertility in demographic research. Using data from the Survey of Inmates and the National Survey of Family Growth (NSFG) Male Supplement 2002, I show that, at aggregate population levels, ARD performs very well, with an accuracy rate of 91.8%. This method may be useful for analyses of father absence and family disruption, but general usage may allow for calculating historical estimates of multiple-partner fertility in social surveys that do not inquire about reproduction with several partners.

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