

2000-7

**A LOG-MULTIPLICATIVE ASSOCIATION MODEL FOR ALLOCATING  
HOMICIDES WITH UNKNOWN VICTIM-OFFENDER RELATIONSHIPS**

**Steven F. Messner  
Glenn Deane  
Mark Beaulieu**

**University at Albany, SUNY**

**Draft  
September 2001**

**DRAFT COPY – NOT FOR CITATION OR QUOTATION WITHOUT THE AUTHORS’  
PERMISSION**

Abstract

This research note critically evaluates conventional methods for allocating homicides with unknown victim/offender relationship to meaningful categories and proposes an alternative approach. We argue that conventional methods are based on a problematic assumption, namely, that the missing data mechanism is “ignorable.” As an alternative to these methods, we propose an imputation algorithm derived from a log-multiplicative model that does not require this assumption. We apply this technique to estimate levels of homicides disaggregated by victim/offender relationship using SHR data for 1996 and 1997, and we compare the resulting estimates with those obtained from the application of conventional procedures. Our results yield a larger proportion of stranger homicides than are obtained from the conventional methods.

\*Support for this research was provided by the National Consortium on Violence Research (NCOVR). NCOVR is funded through grant #SBR 9513040 from the National Science Foundation. Support was also provided by grants to the Center for Social and Demographic Analysis from NICHD (PD30 HD32041) and NSF (SBR 9512290). Any findings, conclusions, or recommendations expressed herein are those of the authors and do not necessarily reflect the views of funding agencies.