

**COMMENT ON "THE FEDERAL STATISTICAL SYSTEM'S  
RESPONSE TO EMERGING DATA NEEDS" BY JACK E. TRIPLETT \***

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**1. Introduction**

Jack Triplett's lucid plea for the establishment and nurturing of analytical research groups within federal agencies and for sustained interaction between such groups, external advisory boards, and the academic research community deserves strong support and further elaboration. The purposes of this note are:

(a) to describe some current controversies in which the uncertainty associated with competing claims could be reduced substantially if Triplett's proposals were implemented;

(b) to list some specific items that should be part of academic research agendas, as illustrations of the important stimuli provided by Federal statistical questions. Resolution of some or all of these problems would clearly influence congressional mandates for data collection and, correlatively, agency practice.

**2. Controversy 1. Title VII Legislation and the Economic Status of Blacks**

In 1964 Congress enacted Title VII of the Civil Rights Act outlawing employment discrimination in response to a growing national consensus that racial discrimination sustained the economic, social, and political disadvantages of black Americans. Although black wages and occupational status had been improving and even approaching the levels of whites during the period 1940–1964, the *rate* of improvement increased following the enactment of Title VII and persisted roughly thru 1975. Since 1975 relative black economic status has not advanced, and there is considerable controversy about the potential impact of this law on racial disparity in the 1990's (Heckman and Verkerke, 1990; Epstein, 1990). Much of the debate is fueled by our inability – to date – to deal with measurement issues and quantification of laws and their impact. A major component of the measurement problem is the need for clear specification of a theory about formation and stability of shared beliefs (norms) which led to Whites maintaining Blacks in subordinate social positions. Furthermore, as clearly documented by Heckman and Payner (1989), *simultaneous* federal pressure on multiple facets of the southern segregationist system

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– e.g., integration in housing and schooling – also affected local labor markets. Disentangling the impact of Title VII from these other effects is of major importance for guiding future legislation, but this represents a difficult analytical problem which needs to be addressed by academics *and* research personnel in Federal Statistical Agencies.

### **3. Controversy 2. Life Expectancy and Active Life Expectancy**

A provocative paper of Fries (1980) has stimulated an intensive debate about biological limits to human length of life, expected length of life at birth and expected length of disease and disability-free life (for alternative claims and counterclaims see Fries, 1990, Olshansky et al., 1990 and particularly the full collection of papers in Johansson, 1991). From an empirical point of view, most of the estimates and forecasts in this literature are based on multiple-cause mortality data, collected and disseminated by the National Center for Health Statistics. The methodological difficulty that arises is that only trends in terminal state information (i.e. data based on assigned causes of death after the event) are used to produce estimates of upper limits to life and morbidity-free life despite the clear and extensive discussion of the enormous uncertainties associated with such practice presented by Sacher, 1977.

A notable exception to this practice appears in a series of papers of K.G. Manton and colleagues (see especially Manton et al., 1991 and the references therein). Here specific models of disease and/or disability progression are estimated, tested, and used to develop mortality forecasts based on longitudinal data from fine-grained community studies (e.g., Dawber, 1980; Huntley et al., 1986) external to the Federal Statistical system but integrated with survey data from Federal statistical sources. This integrated forecasting framework is essential for the provision of defensible estimates of life expectancy and active life expectancy and statements of uncertainty about them. The increasingly intense congressional deliberations about health care costs for the elderly and particularly about the demand for long-term care facilities requires assessments of active life expectancy and of the progression and distribution of diverse disabilities. Analytical capabilities and data resources internal and external to the Federal statistical system are essential for the provision of the most meaningful information to guide legislation on health care programs.

### **4. Controversy 3. Asbestos Regulation**

The current and pending regulations against asbestos in buildings could lead to expenditure of public funds on the order of 100 to 150 billion dollars (Mossman and Gee, 1989). Asbestos abatement programs are the result of a protracted debate carried out over the past twenty years about the risk of lung cancer, mesothelioma and asbestosis attributable to exposure to various forms of asbestos fibres. Alternative projections of asbestos-related deaths have differed

by a factor of 2 (see e.g., Selikoff, 1981; Walker, 1982) and much of the disparity revolves around arguments concerning a multiplicity of data sets and the extent to which one can properly ascertain asbestos exposures with them. For a penetrating evaluation of alternative forecasts of the implications of occupational exposure to asbestos, the reader should consult Manton (1983). The relevance of this controversy to Triplett's paper is that substantial analytical capability integrating measurements from both federal and private data bases are central to the projections that guide Congressional legislation. Furthermore, the asbestos risk controversy is a generic example of the need for more analytical strength focussed on environmental monitoring within Federal agencies and the importance of addressing the tension associated with decisions about what data collection should be part of the Federal Statistical system and what should be relegated to the private sector.

Each of the above controversies is associated with challenging unresolved methodological questions that belong on academic agendas and where the solutions would greatly benefit the Federal Statistical System. Prominent among these are:

(a) understanding the tradeoffs between combining the results of published studies (Meta-Analysis) and combining multiple data sets for assessing the impact of interventions (e.g., the impact of Title VII legislation on the economic status of blacks);

(b) developing a rigorous and operational measurement strategy to ascertain community norms, their formation, and their evolution over time;

(c) quantifying uncertainty in the ability of indirect assessments of exposures to potentially toxic hazards to provide defensible surrogates for difficult-to-obtain direct measurements. Such measures of uncertainty should play a prominent role in projecting the consequences of exposures to environmental hazards.

Although this list could be readily extended, these items serve to highlight where a close interface between academic statisticians and analytical groups within Federal Agencies could not only be symbiotic, but also facilitate the resolution of statistically-based controversies that are central to the development of informed legislation. Indeed, Jack Triplett's proposals deserve wide discussion and movement toward operationalization.

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