DESIGNING RESPONSIVE ADMINISTRATIVE SYSTEMS IN THE 1980's

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The purpose of this paper is to conduct a critical evaluation of the Negative Income Tax/Income Maintenance Experiments (NIT/IM) which were completed between 1968-1983. The main issue that will be examined is whether we can identify variations in administrative procedures, rules and regulations that impact on: a) labor-supply response; i.e., going to work; and b) the break up of marital or household units.

The NIT/IM experiments were primarily conducted to determine the overall labor supply effects of individuals and families when administered a guaranteed income. An equally compelling reason, however, for conducting the experiments was to test an administrative model. Beginning with the first experiment, it became readily apparent that the manner by which cash allotments were administered; i.e., the rules, regulations, and policies denoting program restrictions and defining the amount of administration, was intricately linked with the measurement of labor-supply effects. By varying technical program requirements, labor-supply effects could be observed under different types of administrative conditions. This in turn would create a broader picture by which to assess the responsiveness of an administrative system and also permit selection of those key elements and technical features that could be incorporated into current income maintenance programs such as AFDC/AFDC-UP.

Overview of the NIT/IM Research Design

It is important to understand the essential features of the experimental design in order to evaluate the administrative procedures, rules, and regulations tested in the four NIT/IM experiments. Historically, governmental agencies have used nonexperimental data; i.e., program evaluation and statistical analyses of cross-sectional data to analyze potential social welfare policies and programs in this country. What is innovative about the NIT/IM studies was the idea of using experimental data to assess the potential effects of a program on public policy.

The NIT/IM resesarch design involved the scheduling of observations; the choice of treatments and comparisons; the selection of measured control variables; and the manner of assigning units to treatments; for example, a modified version of random assignment. It is this last aspect which characterized the NIT/IM experiments as more quasi-experimental in practice (Cook & Campbell, 1979, p.343) because a random selection of the entire population was not drawn in selecting participants for the NIT/IM field studies.

Despite the administrative complexities, legal and political pressures as well as other analytical problems in administering a quasi-experiment, it was believed to be a superior research method by which to collect quality data and study complex social influences, processsess, and changes in life-like settings. (Boruch & Riecken, 1975; Cook & Campbell, 1979; Ferber & Hirsch, 1978; Rivlin, 1974) Because quasi-experimental designs approximate more closely criterion based on the scientific method, they seem to have a "halo" effect among legislative officials who trust the programmatic results as being more reliable.

In comparison to non-experimental data sources, social experimentation/quasi-experimentation has certain advantages. For example, social experimentation's strength lies in its ability to determine the direction of causality between a dependent variable (effect) and an independent variable (cause). Since the experimenters were analyzing data generated by an experiment, some degree of uniformity was observed in assessing similar behavioral outcomes in all of the NIT/IM field studies. To illustrate, the basic goal of the NIT/IM experimental resesarch was to determine the effects of a series of experimental treatments on individual and family behavior. Experimental effects were recorded and evaluated for many types of behavior such as a desire for marital stability, expenditure patterns, occupational choices and changes, and child care usuage. Because these experimental effects (independent variables) were "manipulated" in the environment and observed over a period of time, the direction of causality between changes in income (net wage rates) and behavioral responses was measured fairly accurately.

Another essential feature of quasi- experimentation is that of controlled comparison. A quasi- experiment seeks to provide information on the effects of a given treatment which can be generalized to populations other than the one being studied. Experimental results can be generalized to the larger population because random assignment is used in creating a comparison and experimental group. Individuals in both the comparison and experimental group are followed over a designated period of time; their behavior is assessed before, during, and after the experimental treatment. This "panel feature" of experimental data enables the experimenter to observe changes such as inconsistencies in the behavior patterns of program participants. This provides a valuable source of information to that of nonexperimental data.

In each of the experiments, sample low-income families were assigned either to one of several income conditioned transfer programs or to a control group. The behavior of all control and experimental families was carefully monitored over a designated time period.

## The New Jersey-Pennsylvania NIT/IM Experiment (Urban) 1968-1971

Conducted for three years, this field study, concentrated on the urban poor in five eastern cities (four in New Jersey and one in Pennsylvania). The purpose was to test the response of primarily

White, Black, and Spanish-American male-headed non-welfare families between the ages of 18-58 to a "NIT" program (N=1359).

## North Carolina-Iowa NIT/IM Experiment (Rural) 1969-1973

The principle purpose of the Rural experiment was to measure the effect of a "NIT" on the work effort of low income families in small towns and farms. A large proportion of the rural poor were self-employed farmers. The responses of the rural families was expected to provide a comparative data base with that of the urban poor. Program eligibility was extended to single households as well as those headed by females and the aged (N=809).

## Gary NIT/IM Experiment (GIME) 1971-1974

GIME focused on a key segment of the welfare population which had been largely ignored in prior NIT/IM experiments; i.e., Black families with only one adult present usually female headed and with at least one dependent. The preponderance of female-headed households with small children led to the incorporation of a day-care treatment variable. GIME also included a social service treatment variable in which selected families were eligible for both day care subsidies and information and referral services. Families eligible to participate were selected from both experimental and control groups (N=1780).

## Seattle-Denver NIT/IM Experiment (SIME/DIME) 1971-1983

SIME/DIME represents the culmination of experience and knowledge acquired from administering the preceeding field studies. Displaying a higher degree of complexity, SIME/DIME has the notriety of being the largest, longest, and most elaborately administered social experiment yet undertaken in this country. A sample of White, Black, Chicano two parent and one parent households were enrolled. SIME/DIME administered an educational; i.e., training/counseling subsidy program to estimate the effectiveness of implementing manpower/work training programs in current and future income maintenance policies (N=4800).

### Labor Supply Results

Several plans of varying generosity were tested in each of the experiments. The choice of particular benefit reduction rates and support levels partially reflected the generosity of the public assistance program in each of the states selected as experimental sites; i.e., AFDC and Foodstamps. The average tax or benefit reduction rate was about 50%. The average guarantee or support level was slightly less than 100% of the poverty line. SIME/DIME provided the most generous experimental plans--eleven combinations of guarantees and tax schedules were tested. (Refer to Table 1)

Practical considerations required that the experimental payments exceed the existing public assistance payments in each of the site locations. This assured that experimental families would be better off, for example, as compared to those participating in a local AFDC

program. There were important differences in the level of benefits available to families enrolled in the AFDC and Foodstamp programs between the Urban and SIME/DIME sites. In the SIME/DIME site, the guarantee levels exceeded the maximum benefits available from AFDC and Foodstamps for the designated medium and high guarantee levels. For example, the lowest guarantee level was approximately equal to the AFDC and Foodstamp support level. In the Urban, the experimental support levels were initially more generous than the state's AFDC and Foodstamp programs; however, shortly after enrollment began, New Jersey significantly increased the level of AFDC benefits as well as extended AFDC benefit levels to cover two parent families. This obviously biased the research design whereby administrative rules regarding income level were in actuality lower than experimental payments.

One of the major problems in administering the NIT/IM field studies was extracting data on earnings over a limited time period. For example, the Urban, Rural, and GIME were administered for only three years. It is very difficult to assess the long term effects of these experiments when the experimental treatment was of such short duration. To resolve, in part, time limitations, the duration of the financial treatments was extended in SIME/DIME to three subsamples consisting of three, five, and seven years.

Even though overall results indicated that participants will work less when given money, on average, experimental participants did not massively withdraw from the labor market.

## Urban

In the Urban, white males reduced their hours of work only 1.5% less than that of the comparison group. White wives were observed to work 23% fewer hours than wives in the comparison group. The experimental wives' employment rate was 24% less than the comparison group; their average earnings per week were 20.3% less relative to the comparison group. It was predominantly secondary earners (wives, teenagers, and older workers) who withdrew from the labor force. However, this behavioral response can be interpreted as highly appropriate in that a women by choice may desire to work inside the home; a teenager may decide it is better to complete his/her education; and older workers approaching retirement may desire spending more time devoted to leisure activities.

## Rural

In the Rural, a small percentage of husbands, predominantly non-farm wage earners, quit work and/or reduced the number of hours worked. This decline in hours worked tended to be smaller on average than in the Urban. With respect to farm families, it was generally discovered that farmers in the experimental group reduced their hours of work for wages relative to the control group of farmers. As the designers of the experiment had not expected farmers to reduce their time on non-farm gainful activities, but rather to increase the amount of time spent on farming, these labor supply responses are puzzling.

GIME

Prime age married males reduced their hours of work from 2% to 6.5%. Female heads of families reduced their hours of work from 25% to 30%. (Kehrer, McDonald, & Moffitt, 1980, pp. 59-106) No significant response was found for wives. These differences in labor-supply response rates may be due to particular characteristics of the sample population in Gary. Gary's job market was rather inflexible during the time of the experiment. Differences observed in hours of work may be due to differences in recipient's employment status. The lower income of female headed households in GIME may point to their greater dependency on such public assistance programs as AFDC in comparison to female heads of households in SIME/DIME, who did not display as great a tendency to rely on such income assistance programs. The findings for wives was disconcerting in that it was observed that the wives experienced the greatest work disincentive of any group. This may have been due to the lack of job opportunities in the area for both full-time, career-oriented workers as well as for part-time casual workers.

SIME/DIME

In general, the labor supply response in SIME/DIME was similar for each family group. It was observed that annual hours of work in the second experimental year declined by 9% for husbands; 21% for wives; 14% for single female heads; 24% for male youths; and 18% for female youths. These estimated impacts in SIME/DIME are averages over the eleven NIT treatments tested and combine the responses of three and five year sample families, truncated on the basis of income. (Robins & West, 1983, p. 94)

For all groups, a major impact of the experiment was on the periods of nonemployment which increase between 40% and 70%. The labor force participation rate of women in the control group increased significantly during the experiment. It appears that the experiment may have delayed entry in the work force for a sizeable number of women receiving NIT benefits. Males in general, rather than withdrawing from the labor force, appeared to have spent more time searching for employment in response to the experiment. (Robins & West, 1983, pp. 91-198)

In the three and five year subsample, it appeared that Blacks and Chicanos responded more to the experimental treatment as compared with Whites. For three-year families, the maximum response for annual hours of work was a 15% decline. The maximum response for five-year families was approximately a 27% decline. As was found with husbands, there were no significant race-ethnic or site differences in response for wives. White wives appear to respond somewhat less than Black and Chicano wives, but this difference is present only for three-year families. (Robins & West, 1983, p.124)

For single females enrolled in the three-year subsample, the response was approximately a 22% decline. During the first three

years, the responses of three and five-year single female heads are not significantly different (unlike husbands and wives), although the responses of five-year families exceed the responses of three-year families by a slight amount. In the fourth and fifth years, the responses of five year families continue to grow. The maximum response in hours of work is approximately a 32% decline. Hence, while there was no evidence for differential response according to the length of treatment for single female heads, there is evidence that adjustment to the NIT treatments takes longer than the five years the experimental group was observed.

## Comparison of Labor Supply Results for All Experimental Sites

Robins and West (1983) have analyzed labor supply findings across the four experiments, selecting those estimates that are based on the most similar sample selection criteria, time period, and variable specification. Their estimates exhibit a fairly consistent pattern for each of the experiments. For example, reduction in hours worked varied between 5% and 25%; employment rate reductions ranged from about 1% to 10%. Robins and West also observed that single female heads are the least likely group to be responsive to a nationwide "NIT" because they already face a fairly generous welfare system that is not universally available to dual-headed families. Robins and West (1983) conclude:

> on average...husbands reduced their labor supply by about the equivalent of two weeks of full time employment...wives and single female heads reduced their labor supply about three weeks of full-time employment...youths reduced their labor supply about the equivalent of four weeks of full-time employment. (p. 16)

These outcomes must be examined in relationship to rules and regulations administered in each of the experiments. It may be possible to identify particular administrative variables, which variables when taken together, create a situation that makes going to work not as attractive as receiving experimental payments. To illustrate, the administrative procedures for the accounting period, definitions of income, and tax rate associated with different income categories may have had a strong impact on experimental participants' decision to seek employment or not to seek employment. The accounting period comprised "both the frequency with which income and other information was reported by experimental participants and the length of time during which participants could be taxed." (Kershaw, 1978, p. 47) Experimental payments made within a brief accounting period, for example, a period of one month, are highly responsive to the immediate needs of low income individuals, as individuals receive larger payments at one time. On the other hand, a longer accounting period, such as the annual accounting period employed in our current income tax system, would probably fail to respond to a low income family's immediate needs.

In each of the experiments, a retrospective self-reporting system was·utilized  so that the accounting period was of relatively short duration to take into account participant's immediate needs.  It was hoped that this monthly retrospective reporting system would increase the accurate reporting of income as well as lower overall administrative costs.  This is important to bear in mind in extrapolating the NIT/IM research findings.  The carry-over accounting period in each of the experiments influenced the experimental tax rate; i.e., the accounting period stream-lined the payments resulting from changes in income.  Consequently, this changes the tax rate for some experimental participants which may have influenced participants' decision either to work more or opt for more leisure.

Each of the NIT/IM experiments treated private and public transfer payments differently than they did other benefit programs.  The Urban, Rural, and GIME rules provided that private transfer payments such as alimony, child support, and voluntary support to individuals outside the household, be treated as income and taxed at the experimental rate. However, SIME/DIME's rules stated  that such private transfer payments were to be taxed at 50% of the value of the transfer payment.

Although SIME/DIME and GIME taxed public transfer payments such as Unemployment Insurance and Social Security at 100% of its value, the Urban and Rural experiments taxed such public transfer payments only at the experimental rate.  In addition, SIME/DIME's rules were more liberal than the other three experiments in the number of public transfer payments that were permitted.  For example, the Urban, Rural, and GIME rules automatically excluded families from further participation if they received such public transfers as Aid to the Blind, Aid to the Totally and Permanently Disabled and General Assistance.  In GIME, there appeared to be a "middle ground" in that Unemployment Insurance and Social Security were taxed at the experimental rate;  however, Foodstamps and other public assistance transfer payments such as Old Age Assistance, Aid to the Permanently and Totally Disabled, Aid to the Blind and General Assistance, excluding AFDC, were taxed at 100%.

Another important administrative variable to take into account in intepreting behavioral outcomes of experimental participants was the definition of income.  As long as a family's income was less than the specified percentage of their assigned break-even level of income, that family was fully reimbursed for federal and state income and social security taxes.  If the family's income, however, rose above the break-even level of income, they were reimbursed  " at a declining and ultimately disappearing tax rate."  (Christophersen, 1983, p. 56)

In order to account for fluctuation of income in the Urban, Rural and GIME, the concept of carry-over income was utilized.  If the family's income in any given month exceeded the break-even level, that amount remaining was carried over and added to the income of future months in the calculation of experimental benefits.  No income was carried over and added to the income of future months in the calculation of experimental benefits.  By way of contrast, in SIME/DIME, in addition to the use of carry-over income, the

experimenters drew upon a second and separate calculation each month--a continuous historical accounting of twelve months of income. This produced a composite sum of annual benefits amount to which a family would have been entitled over the past twelve months. In turn, this annual entitlement was subtracted from the sum of the payments sent to the family in each of the past eleven months. The amount which was paid in the current month was the difference between the annual entitlement and the sum of the payments sent to families.

These administrative variables; i.e., definition of income, tax rate, and accounting period, must be weighed in interpreting experimental participant's employment decisions. Administrators of social welfare programs and policy-makers also need to take into account other important administrative variables in measuring rules and regulations on behavioral outcomes. These administrative variables would include: 1) the definition of the filing unit; 2) the frequency and method of contacting program participants; 3) participants' understanding of program regulations and payment changes; 4) length and complexity of the forms used to report income, assets, family size and changes in family composition; and 5) extent and nature of audits of self-administered reports, including problems pertaining to the underreporting of income. (Kershaw, 1978, pp. 47-51)

## Marital Dissolution Results

Although there was great interest in the relationship between family instability and welfare dependency in the administration of all the NIT/IM experiments, it was perhaps SIME/DIME that lent the greatest opportunity to study the effects of a negative income tax on family dissolution incentives. The NIT plans tested in SIME/DIME dramatically increased the rate at which marriages dissolved among White and Black couples; i.e., 40% to 60% and decreased the rate at which Chicano women entered marriages; i.e., over 60%. (Hannan, Tuma, & Groeneveld, 1983, p.365)

The differences in rules among the experiments are important in understanding and interpreting differences in marital break-up. Rules defining family composition patterns can be identified as having a noteable impact on a family's decision either to separate or to remain together, especially the rules defining cohabitation. To illustrate, SIME/DIME permitted new families who were either married or living together to spin-off from already enrolled families and remain eligible for further experimental payments. Family heads who split up would each retain eligibility for income maintenance grants. When an individual; i.e., a family head entered into a new family arrangement either through marriage or through cohabitation, the individual would still continue to receive experimental payments. If this newly formed family eventually separated during the course of the experiment, the eligible individual enrolled in the original family unit would still receive experimental benefits. This ruling, labeled the "dowry effect" by Christophersen (1983) actually allowed an originally enrolled person to enter into a whole sequence of marital/cohabital relationships during the experiment. Whenever, the marital or cohabital union ended,

the spouse/cohabitee and their respective families would also be eligible to receive benefits and thus free to form new family units. A flat rate of $1000 (1971 dollars) was payable to adult members who left the household unit regardless of what experimental plan the families had been assigned. This flat rate amount was adjusted by cost of living increases every year the individual was enrolled in the experiment. To contrast, in the Urban, there were no provisions for cohabitation per se, although the initial eligibility rules defined a household as people living together who pooled income and expenses. In the Rural, families could split, remarry or cohabit and still remain eligible to receive experimental payments. However, if an originally enrolled person left his or her cohabitee, the cohabitee did not remain eligible for benefits. It is interesting to note that because of Indiana law, GIME did not explicitly provide for cohabitation in its family composition unit definitions. However, if the cohabitation commenced subsequent to enrollment, such cohabitation among family units was permitted.

Rules defining cohabital relationships in each of the experiments further can be correlated with rules pertaining to income guarantees based on family composition changes. Rules pertaining to income guarantees may also be identified as having a noteable impact on a family's decision to either remain together or to separate. To illustrate, if one spouse left with the children in SIME/DIME, that new family unit would retain 83% of the original guarantee for an original family of four. In comparison to SIME/DIME, a family enrolled in the Urban and Rural would have retained less than 70% of the original guarantee. Thus, it was far less costly for a family in SIME/DIME to break up than for a family in the Urban and Rural, especially for a spouse who had custody of the children. (Christophersen, 1983, p.48) In contrast, a husband who left his wife and children in GIME was not eligible to receive payments. It is postulated that these differences in rules between GIME and SIME/DIME may have contributed to a family's decision either to remain together or to separate. Specifically, the rules in GIME provided a disincentive for marital break-up relative to the rules in SIME/DIME.

In examining administrative rules and regulations written for each experiment, varied explanations for the increase in the break-up of household units may be given. For example, it was observed that an experimental NIT resulted in less marital conflict among married women who remained with their husbands than was experienced by similar control women. However, in family situations with a history of conflict over child-rearing practices, experimental payments may have provided the economic alternative for families wanting to separate to split earlier. Knowledge that it may be economically feasible to separate from a family may make the ending of an unhappy union more frequent. Evidence pointing to marital instability might also have been shaped by whether or not traditional views about marital roles were held among household units; i.e., the male being the traditional "breadwinner."

These findings suggest that differences in administrative rules and regulations must be carefully integrated into any cross-experimental

analysis of the four NIT/IM experiments. To date, in the NIT/IM literature, only Kershaw and Fair (1976) and Christophersen (1983) have attempted to relate the differences in rules pertaining to family unit and income definitions among all four NIT/IM experiments and the probable effects of these rules on behavioral outcomes not only in the NIT/IM experiments themselves but also at the national level.

## Implications for Social Work

This paper has attempted to identify particular variations of administrative procedures, rules, and regulations which may impact on program participants' behavior in making decisions about going to work and/or remaining married. These two behavioral outcomes tested were of central concern to policy-makers during the field testing of the NIT/IM experiments, and they remain so today, exemplified by Reagan's emphasis on helping welfare clients attain "self-sufficiency" by getting a job. To illustrate, many states have implemented work-support/work-oriented programs as a condition of receiving public assistance payments, specifically in AFDC/AFDC-UP and Foodstamps. This emphasis on work programs provides an excellent opportunity to identify and evaluate many of the administrative variables tested in the NIT/IM experiments, such as determining the level a welfare participant is better off by working as compared to receiving public assistance benefits.

The NIT/IM experiments can also be used as an illustrative model denoting the importance of developing evaluation procedures before an actual program is implemented in the social environment. Because program evaluation is always tied to fiscal concerns, evaluation is necessary to ensure program accountability, efficiency, and cost-effectiveness. Program evaluation can serve as an architectural framework to identify program goals, objectives, and anticipated outcomes in designing more responsive administrative systems to address an identified target population's needs. Many social welfare agencies in the past have not drawn upon controlled field studies; i.e., quasi-experimentation in measuring program outcomes. Given the fact that social welfare programs and activities are complex sets of activities, administered, and evaluated by numbers of individuals, it is extremely important to know which variables tested did or did not contribute to the overall outcomes. Conducting controlled field studies to determine program impacts on client behavior may present a clearer picture to assess the relationship between variables; i.e., program inputs and outputs. To illustrate, in measuring the overall effectiveness of work-oriented programs, evaluation under conditions of controlled experimentation might focus on: a) the implementation of a case-management system; and b) the relationship of job training to job placement. By carefully defining variables to measure a client's progress as well as measuring the client's progress against a comparison group, results can be replicated to establish program validity and reliability.

Secondly, rules and regulations defining family composition patterns in the NIT/IM experiments can be used as case examples to

acknowledge that clients come from a variety of family backgrounds and choose to establish their own families in various forms. Program administrators must recognize that the way administrative rules and regulations are defined; for example, eligibility requirements may in actuality not be supportive of family life. Therefore, program rules and regulations must be evaluated to determine if they are supportive of different family composition patterns and if they address the wholistic needs of families, regardless of the lifestyle of that particular family unit. To date, very little if any research has been done to ascertain the effect of program rules and regulations on client/family behavior, ranging from participation rates to the impact of rules and regulations on attainment of selected treatment goals.

In designing more responsive administrative systems, evaluation research is a necessary prelude to generate data to: streamline overall program costs; coordinate and integrate existing social services; and respond more effectively to the needs of clients. In evaluating human service programs in the future, it is hoped that administrative rules and regulations will carefully be measured in assessing program impacts on behavioral outcomes.

TABLE 1: MAIN FEATURES OF THE NIT/IM EXPERIMENTS

| EXPERIMENT | SITE(S) | LENGTH OF TREATMENTS | NUMBER OF FAMILIES ENROLLED | TYPES OF FAMILIES ENROLLED | RACIAL COMPOSITION OF SAMPLE PARTICIPANTS | GUARANTEE LEVELS (FAMILY OF 4) | TAX RATES (AVERAGE) | OTHER TREATMENT |
|---|---|---|---|---|---|---|---|---|
| Urban (1968-1972) | Trenton (12%) Paterson-Passaic (36%) Jersey City (29%) Scranton (23%) | 3 years | 1,357 | Dual-headed | Black (37%) White (32%) Hispanic-American (31%) | $1,650 2,457 3,300 4,125 (1968) | .3, .5, .7 | None |
| Rural (1969-1973) | Iowa (38%) N.C. (62%) | 3 years | 809 | Dual-headed Single-headed | Black (35%) White (65%) | $1,741 2,612 3,482 (1969) | .3, .5, .7 | None |
| GIME (1971-1974) | Gary (100%) | 3 years | 1,780 | Dual-headed Single-headed | Black (100%) | $3,330 4,300 (1971) | .4 .6 | Daycare Subsidies of 35%, 60%, 80% and 100% |
| SIME/DIME (1971-1983) | Seattle (43%) Denver (57%) | 3 years (71%) 5 years (25%) 7 years ( 4%) | 4,800 | Dual-headed Single-headed | Black (43%) White (39%) Chicano (18%) | $3,800 4,800 5,600 (1971) | 0.5, .7, .8 w/ average rates of decline of zero & .025/ $1,000 | Counseling, education and training subsidies of 50% and 100% |

Sources: Robins & West. (1983). SIME/DIME Final Report, Vol.I, Part III, p. 62.

Spiegelman & Yaeger. (1980). Journal of Human Resources. 15:4, p. 466, Table 1.

## References

Boruch, R. & Riecken, H. (1975). Experimental testing of public policy: the proceeding of the 1974 research council on social experiments. Boulder, Colorado:  Westview Press.

Christophersen, G. (1983). Final report of the seattle-denver income maintenance experiments (Vol. II). Princeton, N.J.: Mathematica Policy Research, Inc.

Cook, T. & Campbell, D. (1979). Quasi-experimentation: design and analysis issues for field settings. Chicago: Rand NcNally.

Ferber, R. & Hirsch, W. (1978). Social experimentation and economic policy: a survey. Journal of Economic Literature, 16, 1379-1414.

Hannan, M., Tuma, N., & Groeneveld, L. (1983). Marital stability. In Final report of the seattle-denver income maintenance experiment (Vol. I). Menlo Park, Calif: SRI, International.

Kehrer, K., McDonald, J., & Moffitt, R. (1980). Central findings: husbands, wives and female heads of families.  In Gime final report. Princeton, N.J.: Mathematica Policy Research, Inc.

Kershaw, D. (1978). Comments. In Palmer & Pechman (Eds.), Welfare in rural areas: the north carolina-iowa income maintenance experiment. Washington, D.C.: Brookings Institution.

Kershaw, D. & Fair, J. (1976). The new jersey income maintenance experiment (Vol.I). New York: Academic Press.

Rivlin, A. (1974). Systematic thinking for social action. Washington, D.C.: Brookings Institution.

Robins, P. & West, R. (1983). Labor supply response. In Final Report (Vol.I).  Menlo Park, Calif.: SRI, International.