Group Model Building to Support Welfare Reform in Cortland County

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Purpose of This Paper. This paper continues efforts to document how group modeling takes place at Albany by providing full documentation of a single case study--the construction of a model of welfare reform for a team of county managers responsible for implementing federal and state mandates in Cortland County, a rural county in upstate New York.

Group Model Building Practice. Increasingly, approaches to systems thinking (Senge 1990; Richardson et al. 1994; Morecroft & Sterman 1994) and strategic planning for organizations (Bryson 1995; Eden 1989) are coming to rely on the practice of building a model directly with a group as a method to accelerate a management team's work (Vennix et al. 1992; Vennix 1996). Researchers at the University at Albany, building on nearly two decades of experience with decision conferences (McCartt & Rohrbaugh 1989; Reagan-Cirincione et al. 1991; Rohrbaugh 1992; Vari & Vecsenyi 1992; Milter & Rohrbaugh 1985), have recently set out to document one approach to building system dynamics models directly with groups (Richardson & Andersen 1994; Andersen & Richardson 1997). These efforts have been part of a larger movement both to document how various groups build system dynamics models with groups (Richmond 1987) as well as to document the outcomes of these group modeling efforts (Huz et al. 1997).

Project Background: Welfare Reform in New York State. In 1996, President Clinton signed into law the "Personal Responsibility and Work Opportunity Rehabilitation Act" that mandated broad changes in how welfare would be administered in the United States. Heralded as "an end to Welfare as we know it," this legislation ended basic entitlements for women with dependent children that had been in place for over five decades and provided for a major restructuring of all aspects of the welfare system. New York's Governor Pataki in 1997 proposed a package of reforms at the state level that would provide for the implementation of federal reforms within the specific context of New York State. As Governor's Pataki's reform package was scheduled for debate in the New York Legislature, researchers within the New York State Department of Social Services (DSS) approached the University at Albany with a proposal to undertake a series of group model-building sessions designed to focus on how local providers might respond to both federal and state reforms. (In New York State counties provide welfare services that must conform to state and federal guidelines and funding polices.)

These group modeling sessions were scheduled to take place in one rural county, one medium sized county, and one large county (such as a borough of New York City). The purposes of these efforts were three-fold: (1) to assist the three participating counties to think through welfare reform strategies for their counties using a system dynamics modeling framework, (2) to provide state

policy makers opportunities to observe the group modeling process and hence to learn how local communities were responding to state and federal initiatives, and (3) to create a "management flight simulator" for welfare reform viewed from the county level. This flight simulator is intended to be used by county-level teams in New York's 64 counties as well as by teams of cross-agency managers at the state level who are responsible for creating the detailed regulations that will guide local implementation. This work reports on the first of three model-building sessions completed in Cortland County, a small county of approximately 12,000 families in upstate New York.

Overview of the Group Model-Building Process and Products in Cortland County

The Cortland Welfare Reform modeling project took place over five months (January to May of 1997) and involved four full days of intensive meetings with the modeling team and the management team. This project is forming the basis for work in the next two counties and work within Cortland is still on-going. The sections below describe the three major work phases and their products--project negotiation and design, model building, and model presentation, refinement, and use. The interim and final products of this effort have been loaded on the Internet and are available for downloading. Our hope is to provide as complete documentation of the intervention as possible.

Phase I--Project Negotiation and Design. The basic plan for this project was conceived in discussions between Rohrbaugh, a faculty member at the Rockefeller College, and Johnson, a researcher at DSS. Johnson made contacts within DSS and promoted the idea of three county-level models culminating in a management flight simulator and Rohrbaugh lined up a university-based modeling team to complete the technical modeling portions of the project. Johnson, as part of his work in DSS, frequently used management teams at the county level and knew that the Cortland County team was an active management team led by an energetic commissioner. Johnson approached the Cortland County team and arranged for the first full-day modeling conference. The Cortland team had had prior exposure to systems approaches and was enthusiastic about working on the project.

The first full day meeting between the modeling team and the Cortland management team took place on February 11, 1997. This session did not begin any formal model building. Instead, the session was a problem finding session using group approaches and techniques common in the strategic planning literature (Bryson 1995; Eden 1989). Working for a full day, the group completed a "Hopes and Fears" exercise, a stakeholder analysis, a resource inventory detailing the tools that Cortland had available to implement welfare reform, and a preliminary listing of policy options as well as some preliminary reference mode sketches that the group associated with those policy options. Finally, the modeling team led the management team in a nominal group exercise designed to estimate the size of the several client stakeholder stocks and resource stocks available in Cortland County. A full transcript of the February 11 meeting along with all of the products produced is available in Zagonel (1997A).

Phase II--Model Building. The formal model building portion of the project began with a two-day group modeling session that used teamwork and scripts approaches (Richardson and Andersen 1995; Andersen and Richardson 1997). The two day modeling session is documented by Zagonel (1997B). A three-layer concept model were presented within the first hour of the first day and

most of the first day was spent on clarifying policy options being considered by the group, arriving at a stock and flow diagram for client movement through the system, and agreeing on how to view types of resources within the system. The second day was spent nailing down the final definition of key stocks and feedback loops.

The modeling team returned to Albany and began to assemble a workable model from the products developed in the two-day modeling session. The model to be presented to the Cortland team was built in six layers with additional complexity being added one stage at a time. The modeling team expended approximately 200 hours of effort between the two-day modeling conference on March 17 and 18 and the meeting to present model results on April 29, refining and working on the various versions of the model.

Phase III--Model Presentation, Refinement, and Use. On April 29, the modeling team rejoined the Cortland management team to present a running simulation model. A complete record of that meeting is contained in Zagonel and Lee (1997). Figure 1 presents the main view of CORTLAND 6, the model presented in April. The main view illustrates how clients flow through the system, the major system resource stocks that control or modulate this flow, as well as the major points where resources can have an impact on client flow.

Figure 1: Stock & Flow Diagram With Resources and Unemployment Scenario
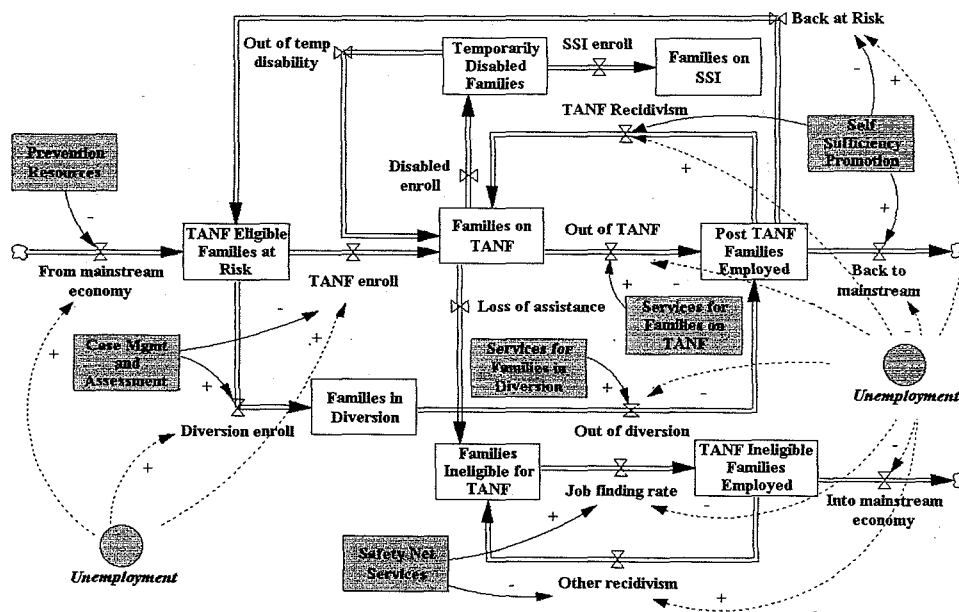

Figure 2 (parts A, B, and C) show the base run of the model. Figure 2.A shows the major stocks associated with clients eligible for "Temporary Assistance for Needy Families" (TANF) over a time frame between 1995 and 2020. The model shows a steady decline in families on TANF,

Families in Diversion from TANF programs as well as eligible Families at Risk of needy welfare assistance and families who are employed and recently off TANF. The major dynamic leading to the decline in all these levels is the fact that the new legislation makes families ineligible for TANF benefits after they have been on benefits for a cumulative total of five years. Figure 2.B shows the other side of the welfare reform story. Starting in the year 2002 (five years after the implementation of welfare reform), the number of families ineligible for TANF rises precipitously from none to approximately 800 families in 2020. Figure 2.B also tracks TANF ineligible families who are employed. This relative lower trajectory reflects the model's assumptions that harder to employ families will be those who tend to loose TANF eligibility and hence will not be easily employed.

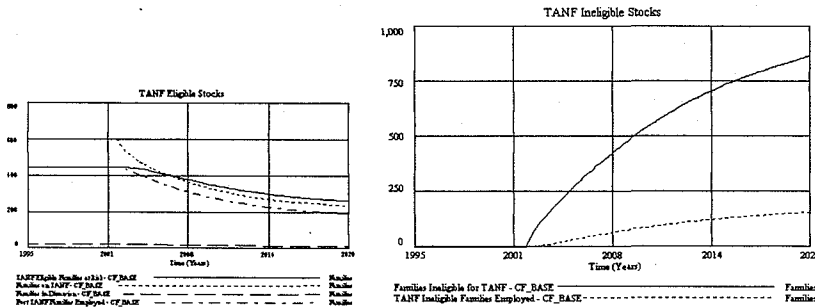### Figures 2.A and 2.B: Base Run for Cortland 6 Model

Figure 2.C Shows the key rate controlling the flow between TANF eligible and TANF ineligible stocks--Loss of Assistance. Loss of Assistance spikes suddenly in the year 2002 as clients become ineligible for TANF for the first time. A co-flow structure in the model tracks the average time used up for families in TANF and this variable rises to a peak value of about 2.5 years in 2002 when the Loss of Assistance rate starts to drain TANF ineligible clients from the system. The Loss of Assistance rate declines from 2002 through 2020 reflecting the general shrinking of the TANF system over that time period.

Figure 2.C: Base Run for Cortland 6 Model
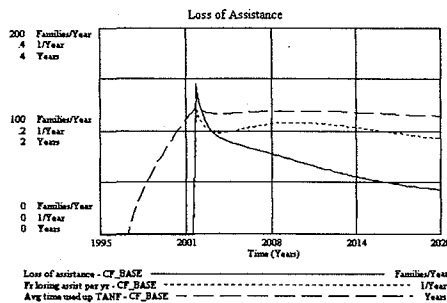
In the April 29 meeting, the management team experimented with the model, changing a number of scenarios (e.g., implement a 3 year recession beginning in 1999) and policy options (e.g., implement an aggressive prevention program starting in 1997 designed to keep young persons off of TANF). Approximately 50 policy experiments were conducted that day as documented in Zagonel and Lee (1997). Figure 3 (parts A and B) are a sample run from the April 29 meeting. Figure 3 shows the Base Run of Families on TANF plotted against the same variable with a policy emphasizing prevention and a policy emphasizing self-sufficiency. In these runs a budget limit has been imposed on the whole system. The policy emphasizing prevention actually performs worse than the base run because the increased emphasis on prevention comes at the expense of other resources such as the resources used to support the self-sufficiency of clients who have just gotten jobs.

Figures 3.A and 3.B: Sample Comparative Policy Run -- Base *v.* Prevention *v.* Self-sufficiency Promotion
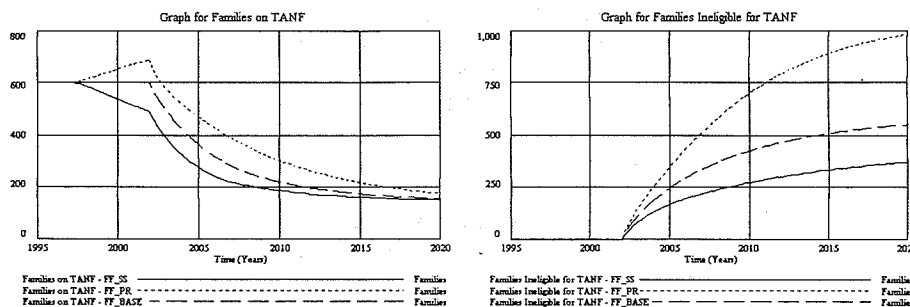
On the other hand, emphasizing self-sufficiency performs better than both the base and the prevention policy. By paying attention to the back end of the system (that is, working to keep clients who have just found jobs at work) resources are freed in the middle of the system to work with clients and move more of them off of TANF. This touches off a positive feedback loop that works with the system to improve overall performance. Early emphasis on prevention (at the expense of working on self-sufficiency) fails to touch off this positive loop and hence fails to move clients off early on and further clogs the system over time.

Self-sufficiency Promotion. A key feedback loop makes self-sufficiency promotion a powerful policy. To understand how this loop works, begin with the stock of "Families on TANF," a stock that starts to decline as families loose eligibility. As that stock declines, the number of families flowing "out of TANF" also declines. This decline in "Post TANF Families Employed" has the effect of enriching "self-sufficiency resource intensity" (assuming that resource allocations do not change). Because of this system-induced resource enrichment, "recidivism" declines and hence "Families on TANF" declines further. To sum this all up, an initial decline in "Families on TANF" leads to a further reinforcing decline of families on TANF--initial success at getting families off of TANF reinforces itself by getting even more families off of TANF. It is important to note that this reinforcing loop is working for welfare reform when TANF clients are declining. If for some

reason the number of TANF clients were to start to increase (as in a recession) this snowball effect would work in the opposite direction and tend to make a worsening situation even worse.

It is important to note that not all types of services touch off this reinforcing dynamic whereby initial success snowballs into further success. Initial success with reducing clients on TANF touches off balancing dynamics that will eventually slow further success, just the opposite type of effect from what we just saw. Tracing this loop around in Figure 1, we see that an initial decline in "Families on TANF" increase the "TANF services resource intensity" (again, assuming no shift in resource allocations). This system-induced increase in resources being used to serve TANF clients will over time increase the number of clients flowing "out of TANF." This increases the number of "Post TANF Families Employed," which strains "Self-sufficiency Resource intensity," thereby increasing "recidivism" and families flowing "back at risk." Hence, over time an initial decline in "Families on TANF" touches off system-level forces that strain downstream capacity and eventually keeps even more families from flowing off of TANF.

Of course, when the model is running, both of these loops run at the same time and there is competition between the "reinforcing loop of self-sufficiency promotion" and the "balancing loop of services to families on TANF." These interacting loops create the very interesting dynamics of this system that we must strive to understand better. We need to seek out policies that touch off snowball effects that work in the right direction and avoid policies that touch off balancing effects that tend to slow progress toward our policy goals. Although this modeling effort is still rather preliminary, a potentially strong hypothesis seems to be emerging--"Self-sufficiency Promotion" appears to be a high leverage policy point precisely because it touches off these snowball effects that cause a small initial success to generate even greater future success.

Use of the Model in Cortland County

The project has been used in Cortland County by the Department of Social Services to meet several community needs:

- It provokes the participants to examine the impact of changes in the administration of welfare programs as having community-wide consequences. Traditionally, changes in this department's budgeting have been viewed as being an isolated problem which allowed a "business as usual" response for providers of services.

- The opportunity to develop a planning tool with the world-recognized SUNY Albany modeling team functioning as experts gives greater credibility to the planning process than would have been achieved by state and local "authorities." The development process involved, however, promotes the creation of a grass roots plan. Counties adopting the simulator can avoid the "our plan" versus "state plan" (or worse, "New York City plan") scenarios which does not foster local ownership yet takes advantage of the "outside expert" phenomena.

- The discoveries in the simulation have been utilized as the foundation for welfare reform presentations in the community as well as at several statewide forums. The model provides a structure for discussions for community-wide strategy sessions by identifying validated high