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Caseworker Turnover in Foster Care Services: Problem or Symptom? A System Dynamics Approach

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Caseworker Turnover in Child Welfare Services: Problem or Symptom?
A System Dynamics Approach

by
Marian Stahlschmidt

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Mary Jo Stahlschmidt

Washington University in St. Louis

August 2019

Dedicated to Papamimi
Thank you for being just the way you are

ABSTRACT OF DISSERTATION

Caseworker Turnover in Child Welfare Services: Problem or Symptom?

A System Dynamics Approach

by

Marian Stahlschmidt

Doctor of Philosophy in Social Work

Washington University in St. Louis

2019

Professor Patricia Kohl, Chair

Problem: Child welfare (CW) caseworkers perform a crucial role in our society--ensuring the safety, permanency, and well-being of one of our most vulnerable populations, victims of child maltreatment. Yet, since its inception in the early 20th century, CW, including foster care services, has been plagued by high turnover rates that have been associated with delayed permanency and recurrent maltreatment. This dissertation aimed to develop a dynamic hypothesis about the system structure that produces turnover in foster care services, to create a formal system dynamics simulation model representing the problem, to develop an intervention to reduce the problem, and to test it for effectiveness and sustainability.

Methods: The study was a single case study using mixed-methods including semi-structured interviews and group model building workshops with stakeholders to create a qualitative systems map representing the structure that causes turnover. The qualitative map was re-specified as a formal system dynamics simulation model. Computer simulation using Vensim PLE tested whether the model was able to produce behavior that matched historical trends and to determine how the system may be restructured to reduce turnover.

Results: Qualitative and quantitative results both indicated that turnover operates as a vicious cycle with detrimental effect on an agency's ability to build human and social capital. Findings suggested that improving supervisor case support, supervisor emotional support, and staff camaraderie, while reducing caseworker frustration, were the highest leverage interventions to reduce turnover.

Conclusion: Caseworker turnover in foster care services can cause an agency to get caught in a trap that is difficult to break out of. Training programs that make supervisors aware of the importance of acknowledging caseworkers for a job well done, and those that train supervisors on team- and camaraderie-building programs, are likely to improve caseworker turnover at a low cost.

Chapter 1

Overview and Research Aims

1.1 Introduction

Foster care caseworkers provide services to the more than 400,000 children and youths living in the United States foster care system on any given day (US Department of Health and Human Services [USHHHS], Administration for Children and Families [ACF], 2017). The work they do is critical given the numerous serious and negative outcomes for children and youth in the system and the financial cost to society. Trends show the number of children entering the system is increasing. Further, changes to the context in which services are provided—including a shift to service provision by private agencies, increases in kinship placements, and children and parents presenting with more complex needs—means a better understanding of the organizational structure in which foster care services are provided is crucial.

Unfortunately, the child welfare (CW) workforce, including the foster care workforce, appears to be headed in the opposite direction. Caseworker turnover has long been cited as a major problem facing the system. Average turnover rates hover between 20% and 40%, caseworker tenure is usually less than two years, and agencies spend up to $50,000 to replace each caseworker that leaves (Annie E. Casey Foundation, 2017). High turnover rates leave the system with an inexperienced workforce that is less likely to provide high quality services that are crucial to improving outcomes for children (Gansle & Ellet, 2002). Even more troubling, research indicates that caseworker turnover is linked to delayed permanency, recurrent

maltreatment, and the re-traumatization of children served by the foster care system (Curry, 2019; Strolin-Goltzman, Kollar, & Trinkle 2010).

High turnover rates in CW and a constantly changing CW system are not new. The history of CW is characterized by numerous legislative acts that have changed the CW service context. The Social Security Act of 1935 shifted the burden of CW away from private agencies (Myers, 2008). For the first time, the federal government began funding public CW workers including partnering with states to train a competent workforce of social work professionals (Myers, 2008). In 1974, the Child Abuse Prevention and Treatment Act (CAPTA) mandated the reporting of suspected abuse and neglect, which caused the number of reports to skyrocket. The unprepared CW workforce experienced a shortage of experienced workers. As it struggled to respond to the onslaught of reports it received, the proportion of professional social workers in CW decreased. Not surprisingly, scholars in the field responded by launching what would turn out to be an extensive body of research on excessive CW caseloads and the accompanying problem of caseworker turnover (Bernotavics, 1997; Dickinson & Perry, 2002; Shapiro, 1974). The bulk of this work lacked theoretical bases and used research designs and analytic methods unable to establish causation. Although this research produced some valuable descriptive information, it neither led to sustainable solutions for reducing turnover, nor significantly improved the effectiveness of CW service provision.

Some CW scholars now argue that a shift away from the focus on individual difference variables toward a focus on the organizational structures in the CW system is needed if we are to implement interventions to improve services quality (Blome & Steib, 2014; McBeath et al., 2014). Further, research methods that can accommodate the changing, uncertain, and complex environment in which CW operates are required. In its *New Directions in Child Abuse and*

Neglect Research, the Institute of Medicine (IOM) and National Research Council (NRC) went so far as to say, "to be effective, change efforts and the policies designed to sustain them must include a rigorous analysis of system dynamics" (Institute of Medicine [IOM] and National Research Council [NRC], 2014, p. 26). This dissertation aims to identify strategies to improve the quality of foster care services by using a system dynamics approach to improve our understanding of the organizational context of foster care work and the structure that produces turnover.

1.2 System Dynamics

One does not have to delve very deep into the CW literature to encounter descriptions of the system as "complex." Dynamically complex systems are characterized by changes over time. These systems have subsystems with actors, actions and events that are interconnected. In dynamically complex systems, optimal solutions that are often counter-intuitive and involve a waiting period before results are seen (Sterman, 2000). Systems thinking allows us to understand a system in terms of its whole, to see these interconnections, to inquire about future behaviors of the system, and to redesign systems in creative ways that would not have been possible using other types of thinking (Meadows, 2006). Feedback is at the heart of systems thinking. Feedback exists when information travels through a system and eventually returns to its point of origin, which may in turn influence future action (Richardson, 1999). Feedback loops are the building blocks of systems and, along with delays (or waiting periods between causes and effects), determine their behavior (Forrester, 1969).

System dynamics is a method for putting systems thinking into action. It allows us to study the behavior of systems over time to show how decisions, policies, structures, and delays

are interrelated to influence growth and stability or decline and the erosion of capacity (Forrester, 1999). This task is accomplished by creating simulation models that illustrate how the structure of the system, including feedback loops and delays, cause system behavior over time.

1.3 Research Aims

The first aim of this dissertation is to determine whether turnover is a problem. Here, "problem" is not conceptualized in the general, conversational sense, but instead as a core "problem" driving system behavior. System dynamics posits that as humans, we are rationally bounded, which makes it difficult for us to accurately diagnose core problems. Emotions, reflex, and other unconscious motivations make it impossible for us to be objectively rational (Simon, 1973; Sterman, 2000). This shortcoming is especially true when trying to diagnose problems in dynamically complex systems (Sterman, 2000). We also tend toward an event-oriented approach to problem structuring and solving that generally involves evaluating the gap between our actual and desired states and then making decisions based on that gap. Such an approach often results in unintended consequences and policy resistance (Sterman, 2000). CW researchers have recently argued that systems sciences approaches will allow us to shift from erroneously addressing symptoms, or events, rather than core causes, such as patterns of behavior, system goals, or system values (IOM NRC, 2014).

Aims two through four focus on using group model building with foster care stakeholders and formal system dynamics simulation to develop a model to determine the optimal points for intervention in the system. Finally, an intervention to improve the system's behavior will be developed and tested.

Aim 1: *Develop a dynamic hypothesis depicting the system structure causing turnover.*

Aim 2*: Develop a formal simulation model and test the dynamic hypothesis developed in Aim 1 and build confidence in the model.*

Aim 3*: Determine the best places in the system to intervene.*

Aim 4*: Develop and test an intervention that will effectively and sustainably reduce turnover.*

1.4 Overview of Dissertation Chapters

This dissertation is organized in the following manner: Chapter one provides an introduction to the problem of caseworker turnover in the foster care and larger child welfare systems, introduces systems thinking and system dynamics, and presents the dissertation aims. Chapter two provides a review of the CW turnover literature, identifies gaps in that literature, and discusses the ways this dissertation will address those gaps, including the dissertation's theoretical bases. Chapter three discusses the study design and analytic methods. Chapter four presents results and chapter five discusses conclusions.

Chapter 2

Empirical and Theoretical Background

This chapter summarizes the literature on caseworker turnover and retention in foster care and in the larger CW system. The literature is reviewed in terms of how turnover and retention have historically been operationalized, consequences and predictors of turnover, and interventions to reduce turnover. Lastly, gaps in the research and how this dissertation will address those gaps are discussed.

2.1 Background

Foster care caseworkers are in a unique position to improve the lives of the young people they serve. During their time in care, no other professional spends as much time with them, plays a more important role in determining which services they receive, or has greater influence over where they will permanently reside for the duration of their childhoods. Caseworkers are required to make quick and critical life-or-death decisions within a context that is often complicated by other issues such poverty, substance abuse, and domestic violence (Annie E. Casey Foundation, 2003). They must also meet regularly with biological and foster families; evaluate family and child medical and mental health needs; make referrals and monitor treatment and progress; drive children to and from appointments and meetings; facilitate communication and meetings with foster families, family courts, judges, attorneys, advocates, law enforcement, school personnel, and mental and medical health professionals; remain up-to-date on child welfare law and testify in court, develop permanency plans, and then thoroughly document nearly every task they perform. Foster care casework is a complex and emotionally demanding

job (Drake & Yadama, 1996; Schwartz, 2011; Strolin, McCarthy, & Caringi, 2007) that is notorious for low pay.

Turnover occurs when a caseworker leaves a CW agency (Sage, 2010). Not all turnover is considered problematic. Agencies may benefit when overly burned out workers or those who are poor fits with job requirements decide to leave. Agencies also lose caseworkers through turnover that occurs from retirement, death, spousal job moves, or other unpreventable circumstances (Child Welfare League of America, 2001). This study is concerned with problematic turnover that occurs when a caseworker who is a good fit for the job and is performing well leaves the agency. Studying turnover is challenging because of the difficulty of contacting employees who have left an organization. A minority of studies in CW have operationalized turnover by counting employees who have left an agency (Fryer, & Miyoshi, 1994; Shapiro, 1974; Strolin-Goltzman, 2008). More often studies use the variable *intention to leave* as an operational proxy for turnover (Jayaratne, & Chess, Barak, Nissly, & Levin, 2001; McGowan, Auerback, & Strolin-Goltzman, Lawrence, Auerbach, et al, 2009; Strolin-Goltzman, Auerbach, McGowan, & McCarthy, 2009).

Retention can partially be thought of as the opposite of turnover. It is an organization's ability to keep its employees on the job (Ellet, 2007). But retention is more than the opposite of turnover in that it may also be thought of as the prevention of turnover. Like turnover, retention may be captured by counting the number of employees who remain in an organization (Dickinson, & Perry, 2002; Kleinpeter, Pasztor, & Telles-Rogers, 2003). In many cases, researchers use *intention to stay* as a proxy for retention (Chenot, Benon, & Kim, 2009; Ellett, 2009; Ellett, 2007).

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2.2 Consequences of Turnover

Researchers have published a large body of work demonstrating associations between turnover and serious negative consequences for children served by the CW system. When fully trained caseworkers leave their jobs, they are often replaced by new workers with less formal and tacit knowledge than those who left, making their contribution to an agency's stock of human capital minimal and lowering service quality (Gansle & Ellet, 2002; Shaw, Duffy, Johnson, & Lockhart, 2005; Williams & Glisson, 2013). Indeed, CW agencies in California with the highest turnover rates also had the highest recurrent maltreatment rates while those with the lowest turnover rates had the lowest recurrent maltreatment rates (Human Services Workforce Initiative, 2006).

While children served by the larger CW system may feel the impact of caseworker turnover, it can be argued that children served by foster care are the most impacted by it. Like caseworkers who work with intact families, foster care caseworkers are responsible for ensuring the safety and well-being of the children they serve. Additionally, foster care caseworkers are responsible for ensuring children have a legally permanent and nurturing home, whether that means being reunified with their families of origin or placed in another safe and nurturing environment (ACF, n.d.). A handful of studies have demonstrated that caseworker turnover is associated with longer reunification periods or delayed permanency (Annie E. Casey Foundation, 2003; Hess et al., 1992; George, 1994; Pardeck 1984; Ryan, Garnier, Zyphur, & Zhai, 2006; Shapiro, 1974). Further, children in foster care who had more than one caseworker were 60% less likely to achieve permanency within the timeframes established by the Adoption and Safe Families Act, federal legislation that requires states to file termination of parental rights once a

child has spent 15 of the last 22 months in foster care, compared to children who had one consistent caseworker (Flower, McDonald, & Sumski, 2005).

The studies discussed in the previous paragraphs used correlational analyses and their results are therefore limited with regard to identifying or ruling out spurious associations. However, one area of strength in the current body of work on the turnover's influence on children in the foster care system can be found in a small number of qualitative studies on the personal relationships between caseworkers and children, and the impact felt when these relationships are disrupted. Positive, supportive relationships with non-parental adults are known to increase positive outcomes in children experiencing maltreatment (Marsh, Angell, Andrews, & Curry, 2012). Most children in foster care have already experienced multiple significant losses by the time they are brought into the system (Curry, 2019). It is not surprising that children and youths reported placing significant importance on forming trusting relationships with caseworkers (Augsberger & Swenson, 2015). Similarly, Curry (2019) and Strolin-Goltzman, Kollar, & Trinkle (2010) found that children in foster care reported lack of stability, loss of trust, and feelings of re-traumatization when their caseworkers left. In both studies, children reported "shutting down" after a trusted caseworker left and being unmotivated or too distrustful to engage in a supportive relationship with a new caseworker. Further, turnover represents a missed opportunity for caseworkers to serve as supports and mentors to children and youth in foster care.

Turnover in CW represents a huge cost to the American taxpayer, the largest funder of CW services. The United States Bureau of Labor Statistics provides estimates on the number of child, family, and school social workers in the U.S. (United States Department of Labor, Bureau of Labor Statistics, n.d.). As of May, 2017, there were 117,550 social work caseworkers

employed in state and local government (excluding schools) and an additional 76,480 employed in children and family services (excluding schools). At a 25% annual turnover rate, 29,387 caseworkers employed in state and local government alone leave their jobs each year. Estimates of the cost to replace caseworkers in the child welfare system have varied from $15,000 (Cowperthwaite, 2006) to $54,000 (Annie E. Casey Foundation, n.d.; Patel, McClure, Philips, & Brooker, 2017). Taking the average of these two costs ($34,500) and multiplying it by the number of state and local government caseworkers leaving their jobs each year reveals a cost of over $6 billion dollars annually to replace these workers. This is money that could be spent on improving programs and services for children coming in contact with the child welfare system.

2.3 Predictors of Turnover

Turnover of CW caseworkers is perhaps one of the most studied phenomena in social work research. In a 2008 systematic review, Depanfilis and Zlotnik (2008) located 154 peer-reviewed articles on turnover in CW agencies and more have been published since. Like the bulk of studies on consequences associated with turnover, this research used correlational designs to identify factors related to turnover. These factors can be separated into two categories: individual characteristics and job characteristics.

2.3.1 Individual Characteristics

Two important individual characteristics with relationships to turnover are self-efficacy and education. Unlike demographic characteristics such as age and gender, these variables represent areas where organizations could make changes that may lead to reduced turnover and/or improvements in practice. Self-efficacy, a key concept from social cognitive theory, is one's beliefs in one's ability to develop strategies and/or succeed at a task or behavior (Bandura,

1989). Beliefs of self-efficacy determine levels of motivation, which play a large part in individual decision-making related to tasks, how difficult a goal individuals are willing to pursue, how much effort they are willing to spend on a task, and how long they will persist in their efforts to complete it successfully (Pinder, 1998). Low self-efficacy is related to giving up on tasks easily (Bandura, 1994). Self-efficacy can be heightened in organizations by providing competent role models, ensuring supervisors are vocal about workers' abilities to succeed, and reducing stress (Bandura, 1994). The strength of the literature on the relationship between self-efficacy and CW turnover lies in its grounding in social cognitive theory, which likely explains why findings have been consistent. Low levels self efficacy are related to *intention to leave* employment in CW agencies while higher levels of self-efficacy is associated with *intention to remain employed* (Dickinson & Painter, 2009; Ellett, 2000; Ellett, 2007; Strolin-Goltzman, 2007; Strolin-Goltzman et al., 2008).

Results from studies on education level and whether or not a worker holds a social work degree have been less consistent. For example, Faller, Grabarek, & Ortega (2010) and Nissly (2005) found that having a graduate degree was positively associated with turnover while Rosenthol & Waters (2006) found that having less than a bachelors degree was positively associated with turnover. Having a social work degree was positively related to turnover in one study (Madden, Scannepieco, & Painter 2014), while another found this relationship to be true only for urban caseworkers (Strolin- Goltzman, Auerbach, McGowan, & McCarthy 2008). Yet another found that MSW caseworkers felt their skills were under-utilized on the job (Auerbach & McGowan, 2000). Finally, Rosenthal, McDowell, & White (1998) found no relationship between education and turnover.

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2.3.2 Job Characteristics

The constructs organizational culture and organizational climate and their sub-dimensions often serve as a framework for research on relationships between job characteristics and turnover. These constructs rose to prominence in the Industrial/Organizational psychology literature and made their way into child welfare research largely through the work of Glisson (Glisson, 2015; Glisson, Dukes, & Green; 2006; Glisson & Green, 2011; Glisson & Lawrence, 2002). Organizational culture emerged from sociology and anthropology where it was studied using immersive methods necessary to understand the explicit and implicit ways in that culture is transmitted to group members collectively (Schneider, Gonzalez-Roma, Ostroff, & West, 2017). It can be defined as the collective values and basic assumptions shared by group or organization members that explain why organizations behave as they do. It exists on a "fundamental, or even preconscious," level of awareness, is grounded in history, and serves as a source of collective identity (Schneider et al., 2017, p. 468).

Organizational climate refers to the aggregate of individual perceptions of an organization's work environment and how the environment impacts personal well-being and functioning (Aarons, 2015; Glisson, 2015). It is dependent on individuals' agreement, or shared perceptions, of the work environment (Glisson, 2015). In the CW literature, Glisson's three-dimensional conceptualization of climate is often used and organizations are measured on their functionality (how employees perceive whether they have the support and cooperation from coworkers and administrators needed to do their jobs), stress (role overload, role conflict, and emotional exhaustion), and engagement (whether employees perceive their to be meaningful and whether they feel personally involved) (Glisson, 2015).

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There is now a great deal of consistent evidence for significant relationships between turnover and the factors derived from the organizational culture and climate frameworks. *Burnout* (Dickinson & Perry, 2002; Drake & Yadama, 1996), *role conflict*, or discrepancies between role expectations and the reality of performing tasks associated with the role, (Dickinson & Painter, 2009; Jayaratne, & Chess, 1984), *supervisor support* and *quality of supervision* (Chenot, Benon, & Kim, 2009; Dickinson & Perry, 2002; Ellet, 2000; Strand, Spath, & Bosco-Ruggiero, 2010; Strolin-Goltzman, 2008), and org*anizational culture* (Chenot, Benon, & Kim, 2009; Ellet, 2000; Williams & Glisson, 2013) are all negatively correlated with turnover, while *workload* is positively correlated with it (Jayaratne, & Chess, 1984; Shapiro, 1974).

Relationships between turnover and other job factors are less consistent. For example, the findings on caseload (Curry, McCarragher, & Dellmann-Jenkins, 2005; Jacquet, Clark, Morazes, & Withers, 2007) and salary (Dickinson & Perry, 2002; Hwang & Hopkins, 2012; Strolin-Goltzman, 2008; Strolin-Goltzman, Auerback, McGowan, & McCarthy, 2008), two factors commonly thought of to be associated with CW turnover, are inconsistent.

2.3.3 Interventions to Reduce Turnover

In 2003, the Children's Bureau discretionary grants program awarded grants to eight universities to develop and test interventions to decrease turnover in child welfare agencies (ACF, Children's Bureau [CB], 2003). Though many of these programs successfully reduced turnover during the study period, they were either difficult to implement or their effects were not sustained over time. One program introduced realistic job previews into the caseworker recruitment process (Faller, et al., 2009). Realistic job previews come in a variety of formats such as videos, brochures, job tours, or verbal presentations. They are designed to provide applicants with a realistic view of the benefits and challenges associated with a job. In

Michigan, applicants who viewed realistic job previews were significantly less likely to leave compared to those who did not (Faller et al., 2009). Similarly, in Arizona, realistic job previews led to a nine percent increase in retention during the grant period, but these gains were not sustained in the long run (Butler Family Institutes, 2009). Another project introduced design teams, which were groups represented by employees at all levels of the organization that convened to trouble-shoot problems (Caringi et al., 2008). The intervention garnered enthusiasm, but proved difficult to implement in the complex and bureaucratic CW setting (Caringi et al., 2008). A subsequent study on design teams found no relationship to turnover, though caseworkers did report lower intent to leave scores (Strolin-Goltzman, Lawrence, Auerbach, Caringi, Claiborne et al., 2009). Similarly, supervisor training programs were effective when supervisors used the skills they learned in training, but they reported they were too busy to practice them regularly (The University of Iowa School of Social Work, 2009).

2.4 Gaps in Knowledge

Despite numerous published studies on turnover and retention in the foster care and CW systems, we are still faced with knowledge gaps and unanswered questions. Perhaps the biggest and most obvious gap is that we have not figured out how to turn research results into successful interventions to reduce turnover and improve retention. Very few studies of interventions have been conducted, and where promising interventions have been identified (Butler Institute for Families, 2009; Caringi et al., 2008; Gabarek & Ortega, 2010; Strolin-Goltzman et al., 2009), we lack an understanding of how organizational structures and processes (i.e. bureaucracy and managing workload) threaten the effectiveness and sustainability of such interventions. The gaps in knowledge addressed by this dissertation are described below.

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First, empirical studies on the CW workforce historically treated turnover as a central problem, if not *the* central problem plaguing the child welfare system. However, this body of work has not explored how actors embedded in the child welfare system view turnover, particularly whether they see turnover as a central problem, as a problem but an inconsequential or unimportant one, or as a symptom of another deeper, systemic problem. Diagnosing problems is perhaps the most important step in strategic problem solving because all subsequent problem solving steps are dependent on it (Mintzberg, Raisinghani, & Théorêt, (1976). Research from strategic business management suggests that attempts to solve problems are often unsuccessful because problem solvers, whether they be organizational leaders or researchers, are unaware of what the strategic problem actually is (Baer, Dirks, & Nickerson, 2013). For example, in analyses of problem solving endeavors in large U.S. companies, 75% of problem solving teams ended up attempting to solve the wrong problem (Nickerson, Dirks, & Baer, n.d.). Attempting to solve the wrong problem leads to rework, including cycling back and starting over, an expensive endeavor in terms of opportunity costs and delays in finding a true solution (Nickerson, Dirks, & Baer, n.d.).

This dissertation has two important strengths in terms of problem structuring: the use of system dynamics and the stakeholder perspective. System dynamics is a research method that utilizes a specific problem structuring process that allows the researcher to overcome shortcomings associated with bounded rationality and flawed mental models. Aim one of this dissertation is to develop a dynamic hypothesis. A dynamic hypothesis consists of a system map, which the researcher hypothesizes is the cause of the system's problem behavior over time. This behavior is depicted in a behavior over time graph and reflects trends the researcher knows to be true. The problem in question was developed in this study by using the stakeholder

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perspective. Semi-structured interviews and two group model building workshops with foster

care stakeholders elicited information about whether turnover was viewed as a central problem.

Second, this dissertation addresses our lack of knowledge of how foster care is organized in

private agencies, which are increasingly contracted by public state agencies to provide services.

Turnover in private agencies hovers at 40% annually, twice as high than in public agencies.

Further, caseworker tenure in private agencies averages three years, half as long as in public

agencies (American Public Human Services Association and Child Welfare League of America,

2001; Annie E. Casey Foundation, 2003; & Pew Commission on Children in Foster Care, 2004).

Only a handful of studies on turnover in private foster care agencies exist and most have found

similar relationships between turnover and the factors discussed in the previous section

(Auerbach et al., 2012; Faller et al., 2010; Jayaratne, & Chess, 1984; Levy, Poertner, &

Lieberman, 2012).

Other studies have looked at private agency caseworkers' reasons for taking the job, and

results suggest that additional research on private agencies is critical to safe and effective service

provision. Results have been described as "disturbing" (Jayaratne & Faller, 1984, p. 258) and as

a cause for concern about the "advisability of contracting for child welfare services with the

private sector" (Faller, Grabarek, & Ortega, 2010, p. 845). Faller and colleagues, whose research

was funded through the Children's Bureau discretionary grants program, compared newly-hired

public and private caseworkers' *job commitment* and *commitment to the field of child welfare*

(Faller et al., 2010). Both groups expressed accepting the job because of a desire to help children

and families, but private agency caseworkers endorsed statements such as "it was the only job

available" and "it was a good first job to take," which were negatively related to *job commitment*

and *commitment to the field of child welfare* (Faller et al., 2010). In contrast, public agency

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caseworkers reported they were swayed by pay, benefits, job security, opportunities, and task variety (Faller et al., 2010).

There is speculation that pay-for-performance funding structures in private agencies, which link agency funding to performance indicators such as case closure within pre-established timeframes, may lead to implicit or explicit human resources policies aimed at managing financial risks by hiring inexperienced caseworkers who may be low-cost but are also more likely to turnover (McBeath & Meezan, 2010). Further, such a structure might put staff under pressure to meet performance deadlines, potentially increasing *burnout* and lowering *job satisfaction*, two correlates of turnover (Levy & Poertner, 2012). This dissertation contributes to this knowledge gap by providing qualitative descriptions of daily work-life in a consortium of three private foster care agencies contracted by a public state agency to provide services.

Finally, this dissertation addresses the absence of theory in much of the CW research, including turnover research. Warren (2008, p. 46) provides a concise definition of *theory*: "an explanation for what causes what and how." It is a simple definition, yet it speaks to the importance of theory in research. It is possible that past turnover research in child welfare has failed to identify effective and sustainable solutions because it lacked theory to guide research questions and to explicate the mechanisms that lead to turnover. In a recent symposium titled "The Organizational and Managerial Context of Private Child Welfare Agencies," McBeath and colleagues (2014) argue there is a crucial need for theory development in the field of child welfare, particularly theories developed in close proximity to frontline practice and that connect important processes, events, and actors to explain what is important to different stakeholders in child welfare organizations. The following section describes the framework and theories that guided the development of research aims and the design of this dissertation.

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2.5 Guiding Framework and Theories

Apart from the organizational culture and climate framework and the inclusion of self-efficacy from Social Cognitive Theory, the research on turnover in CW is largely a-theoretical. Most of the research to date on turnover in CW is limited by its use of "black box" theorizing For example, it is common to see an input such as *self-efficacy* used in a correlational analysis with an output variable such as *turnover* or *intent to stay*. The mechanism between the two constructs is not explained, which reduces the explanatory value of the approach. Without study designs that can establish causation or theories to explain what causes what and how, it is not surprising that the current body of research on CW turnover has not led to reductions in turnover.

This dissertation approaches theory with the notion that it should be used as a guide to explicate actual social mechanisms that cause the phenomenon under study, and more importantly, why and how they do it. Using theory to explicate social mechanisms is consistent with the call by McBeath and colleagues (2014), described in the previous section, for theory development in child welfare that connects important processes, events, and actors. Combining theories with explanatory value and methods such as system dynamics, which are able to model the causal agents, or actors, and the causes and consequences of their actions, may lead to the explication of social mechanisms with far greater utility than the "black box" theorizing used in the past.

2.5.1 Institutional and Organizational Context of Child Welfare Work

McBeath and colleagues (2014) recently developed a framework for future CW research, referred to here as the Institutional and Organizational Context of Child Welfare Work (see Figure 1.1 and Table 1.1). Though not technically a theory, the framework is included in this

section because it draws from political, economic and institutional theories novel to CW research and provides a new platform for research on organizational and management issues across multiple domains within CW. For example, Institutional Theory recognizes that organizations such as child welfare agencies must operate within regulatory and normative demands (such as the performance standards set for in the CFSRs) (DiMaggio & Powell, 1983). Performance strategies that allow child welfare organizations to satisfy these demands while retaining organizational identities should be adopted.

McBeath and colleagues (2014) propose four new lines of research that will be integral to narrowing the gaps in knowledge in the CW research. This dissertation is consistent with the fourth theme they proposed, which calls for research that helps child welfare administrators and managers learn to develop new strategic initiatives that enable them to optimally deploy resources to achieve the best outcomes for children and youth. These authors encourage research that uses a systemic lens, uses the CW system as the unit of analysis, and studies trends over time (McBeath et al., 2014).

The constructs from McBeath and colleagues' framework that are most relevant to this dissertation reside in shaded gray area in Figure 4 and include 1) organizational characteristics and behavior, 2) staff characteristics and behavior, 3) client characteristics and behavior, 4) frontline service delivery, and 5) client outcomes. Table 2 lists these constructs and components of each construct. The following section discusses four theories with great potential to explain how these components may play out in a foster care organization to influence turnover.

Figure 2.1 The Institutional and Organizational Context of Child Welfare Work*
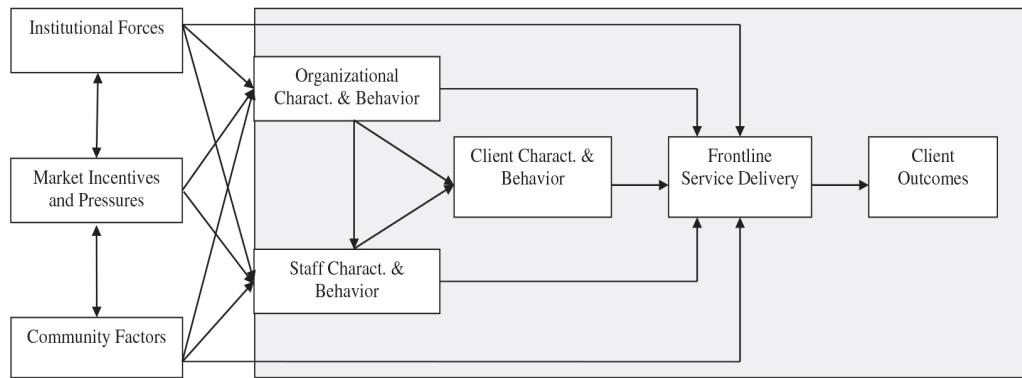
Table 2.1 Drivers of Child Welfare Performance: Constructs and Components

Organizational Characteristics and Behavior	• Organizational structures, processes, and norms • Fiscal and human resources • Service technology • Information technology and quality assurance/ improvement systems
Staff Characteristics and Behavior	• Management expertise and leadership • Frontline expertise, caseload, experience, and cultural knowledge • Frontline practices and norms • Technical uncertainty, available information, and other factors impacting decision-making
Client Characteristics and Behavior	• Personal characteristics and history • Need for pathway into services • Cultural and Social linkages to community-based supports and resources
Frontline Service Delivery	• In-agency and collateral care coordination • Clinical and non-clinical direct care • Client-driven service planning • Provision of effective, evidence-based, culturally-appropriate services
Client Outcomes	• Safety and permanency • Biopsychosocial functioning and objective and subjective well-being • Cultural healing and stronger linkages to community of origin

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2.5.2 Human Capital Theory

Human capital theory was introduced in the 1960s to explain variation in income distribution (Becker & Cheswick, 1966). Human capital refers to the tacit and formal knowledge that employees gain through education, training, and on the job experience (Kacmar, Andrews, Van Rooy, Steilberg, & Cerrone 2006; Strober, 1990; Williams & Glisson, 2013). Since the 1960s, the concept of human capital has been used in a wide variety of contexts and its utility has been heatedly debated (Shaw, Park, & Kim, 2013). Most recently, researchers in the field of strategic management have begun to see the accumulation of human capital as a source of competitive advantage for organizations (Shaw, et al., 2013). Much of this research focuses on the accumulation of human capital through strategic human resources investments and the relationship between these investments and organizational performance (Shaw et al., 2013). On the other hand, very little research has been devoted to understanding how the depletion of human capital affects organizational performance (Shaw et al., 2013). Thus, important questions about turnover's impact on human capital and the point at which human capital begins to lose its value remain unanswered. For example, when an employee leaves one organization and joins another, the second organization benefits from the first organization's investments in the departing individual.

In the context of CW, if an agency has used resources to train a caseworker on a new evidence-based practice or other innovation, if that caseworker turns over, the knowledge they possess is not only lost, but may end up benefiting a competing agency. Additionally, the loss of human capital through turnover costs an organization financially when departing employees must be replaced but also through what has been described as a "period of dynamic adjustment

costs while the best uses of the human capital are discovered and tailored to the needs of the new environment" (Hatch & Dyer, 2004, p. 1156).

Research shows that turnover leads to the hiring of inexperienced caseworkers since they largely comprise the pool of potential new hires (American Public Human Services Association and Child Welfare League of America, 2001; Annie E. Casey Foundation, 2003; Pew Commission on Children in Foster Care, 2004). This influx of inexperienced workers also likely impacts an agency's training needs, reducing resources that could be directed towards improving client outcomes. As discussed previously, caseworkers who are less experienced, and thus lacking in formal and tacit job knowledge not only contribute less to the accumulation of human capital, but are also more likely to leave their jobs, depleting an organization's human capital. Human capital contributed by supervisors and managers is also important to the accumulation of human capital. Supervisory and leadership characteristics are known correlates of caseworker job satisfaction, organizational commitment, and turnover (Shapiro, 1974; Strolin-Goltzman et al., 2008). Leadership instability, including the hiring of less experienced supervisors who may lack technical expertise or the ability to guide caseworkers in decision-making processes, potentially negatively impacts the experiences of caseworkers and how they conduct frontline service delivery.

2.5.3 Social Capital Theory

In the early 2000's, researchers led by Shaw (Dess & Shaw, 2001; Shaw, Duffy, Johnson, & Lockhart, 2005) began to consider the impact that turnover may have on an organizations' social capital, and in turn, how the loss of social capital affects organizational performance. Broadly, organizational social capital has been defined as assets that are embedded in an organization's social relationships and which help facilitate actions that are instrumental to an

organization's function or purpose (Leana & Van Buren, 1999). Such facilitation may happen through increasing communication efficiency, employee trust, increasing organizational commitment, and sharing knowledge with others (Dess & Shaw, 2001; Leanna & Van Buren, 1999). When employees leave an organization, these social relationships are disrupted. This disruption of social capital can be problematic for organizations, especially service and knowledge-based organizations where communication and resource-leveraging are critical (Dess & Shaw, 2001).

One specific way that social capital functions in an organization is that employees in longer-standing groups develop transactive memory, a shared memory for storing information, which in turn reduces the cognitive load of individuals and increases the stock of information available to employees (Wegner, 1987). Leana & Van Buren also discuss trust as a key component of social capital accumulation, serving as an alternate form of governance (Floyd & Wooldridge, 2000), lowering transaction costs (Nahapiet & Ghoshal, 1998), and strengthening the norms of reciprocity (Provan, 1993). Thus, when employees who are successful at creating social capital leave, disproportionate decreases in performance may occur.

Dess and Shaw (2001) argue that the notion that a depletion of social capital that results from turnover ties in well with the resource-based view. They also argue that social capital, when optimally combined with other resources and optimally leveraged, has the potential to yield exponential rather than monotonic performance benefits. The opposite may also be true: disruption or erosion of social capital through events such as turnover may result in an exponential decrease in performance.

Social capital is an important consideration in child welfare organizations, whose performance is dependent on both relationship-based and person-centered knowledges and

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technologies (Collins-Camargo et al., 2012; Williams & Glisson, 2013; Mohr et al., 2012). For example, child welfare caseworkers rely on ties not only with their own agency colleagues, but also with service providers from other sectors (substance abuse, child care, etc.) to carry out high quality casework (Williams & Glisson, 2013). When turnover disrupts these ties, it is likely that casework quality suffers. Figure 2.2 depicts a stock and low diagram combining human capital and social capital theories.

Figure 2.2 Stock and Flow Diagram Representing Human Capital and Social Capital Theories
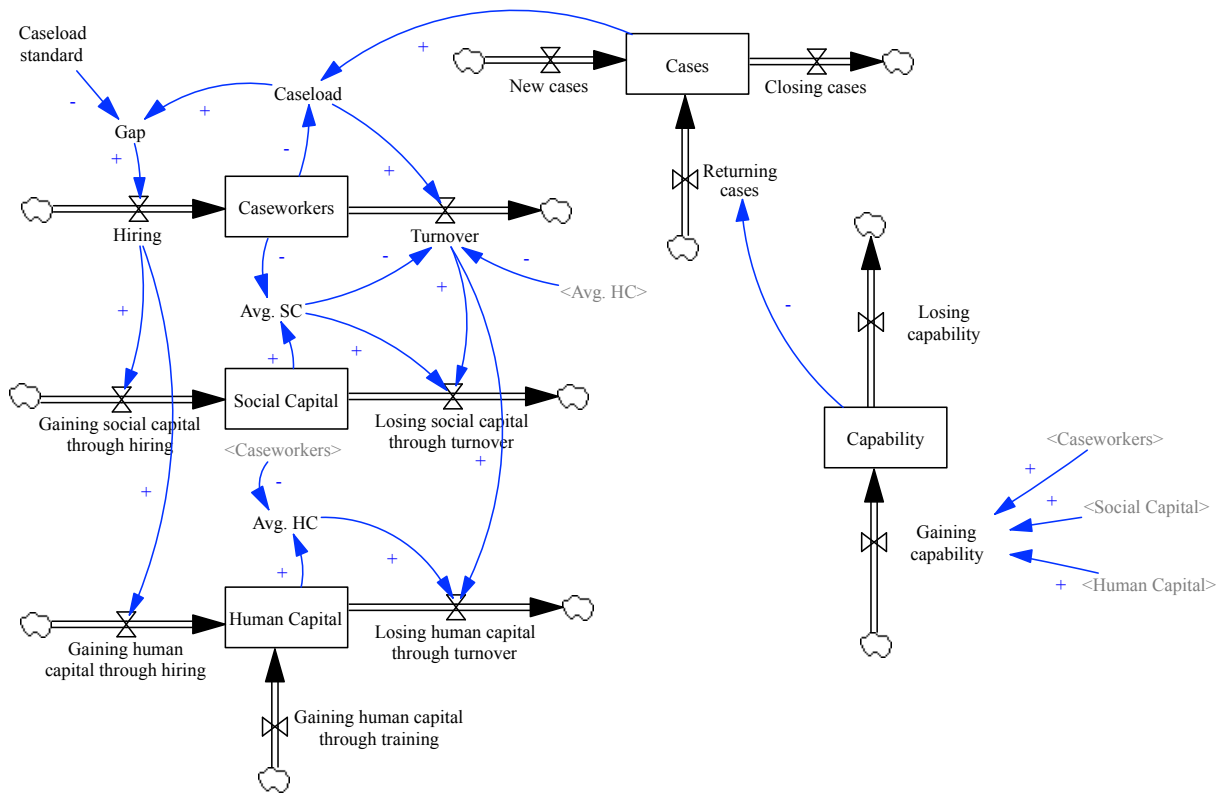
2.5.4 Resource-based View

The Resource-based View of the Firm (RBV), first put forth by Barney (1991), is a

theory from the field of strategic management that explains differences in organizational

performance in terms of how they manage their resources. Resources may be either tangible (i.e.

money, buildings, computers) or intangible (i.e. motivation, reputation, morale). System

dynamics has developed its own perspective on RBV to deal with the causal ambiguity

associated with testing the theory (Warren, 2008). Key concepts from the system dynamics

perspective of RBV are presented in Table 2.2. The system dynamics perspective on RBV

makes asset stocks (resources that accumulate and deplete) explicit, quantifies them, specifies

their interconnections, and connects them to organizational performance over time (Warren, 2008). System dynamics modeling and simulation make explicit the arrangement of asset stocks and how their balance and arrangement can lead to better performance. Of critical importance to this arrangement are the feedback loops that are formed when the inflows and outflows of one asset stock depend on the size of other asset stocks (Dierickx & Cool, 1989; Morecroft, 2008; Warren, 2008). In addition to resource management, organizational performance is also influenced by organizational capabilities. While resources are things an organization *has*, capabilities are things it *does*, and hopefully does well (Grant, 2005; Warren, 2008). Capabilities are influenced by the configuration of resources. Finally, attributes are qualities or characteristics of resources, which also influence performance (Warren, 2008).

Table 2.2 Key Concepts from the Resource-based View*

Concept	Definition
Resources	Things or people an organization has or has reliable access to.
Tangible Resources	Resources that can be seen, touched, bought, or sold. Examples are people, products, and money.
Intangible Resources	Resources that can't be seen, touched, bought, or sold. For example, morale.
Capabilities	The capacity to perform an activity productively (Grant, 2005) or the activities an organization is good at doing, rather than the things it has, which are conceptualized as resources (Warren, 2008).
Attributes	Characteristics or qualities of resources that are important to an organization's performance. For example, staff experience.

*Warren, 2008

Human capital theory and social capital theory are consistent with the system dynamics perspective of RBV. Both types of capital discussed here are described in the strategic management literature as organizational level variables that influence performance and accumulate and deplete in organizations (Williams & Glisson, 2013; Shaw et al., 2013). Both are also considered to be intangible resources that influence capability (Shaw et al., 2013). Turnover is one of the main processes through which resources deplete, decrease capability, and ultimately performance. In turn, decreased organizational performance is thought to increase turnover (Shaw, Duffy, Lockhart, & Johnson, 2005). These theories, along with the system dynamics perspective on RBV, are also consistent with the theoretical framework proposed by McBeath and colleagues (2014), which discusses a need for research that explicates how managers may better manage resources to increase performance. For example, in Table 2, under *staff characteristics and behavior*, management and leadership expertise as well as frontline staff expertise are examples of contributors to human capital. Technical certainty and the possession of information to make successful decisions also contribute to human capital. Under *Client Characteristics and Behavior,* clients' needs for pathways into services and linkages to community-based supports and resources demonstrate the need for social capital in child welfare organizations. Because turnover is a main process that depletes human and social capital in child welfare organizations, it is imperative that we better understand the social mechanisms behind this process.

2.5.5. Capability Trap

The fields of strategic management and system dynamics offer alternative explanations about what contributes to turnover. For example, Repenning's and Sterman's (2001) capability trap model of process improvement, shown in Figure 2.3, is a generic structure, or theory, that is

generalizable to a wide range of organizational contexts. Portions of the model, which may be interrelated to turnover and workforce issues, are discussed here.

Figure 2.3 Capability Trap of Process Improvement*
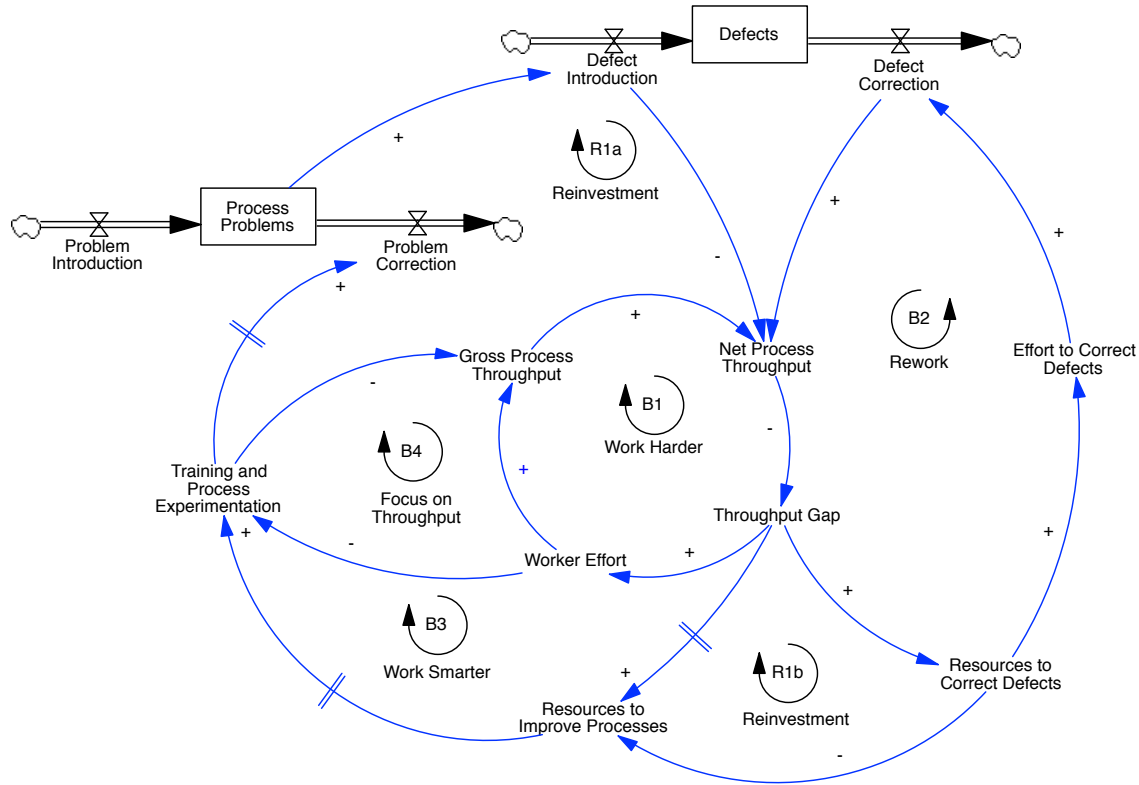
Evidence of a capability trap in child welfare organizations would support the argument that turnover is indeed a symptom of a much deeper problem. Capability traps are characterized by a difference in the actual amount of net throughput and the desired amount of net throughput (or the production target). Net throughput is influenced by the amount of gross process throughput (e.g. case closures), defect introduction, or the rate of work that has been completed incorrectly (e.g. errors made in permanency plans) and defect correction, or the rate that the

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previously made errors are corrected. In Figure 3 process problems and defects are depicted as stocks, which accumulate or deplete through flows, or rates. The stock of process problems determines the rate at which defects are introduced. Thus, process problems in foster care casework determines the rate of errors in the work of caseworkers.

Systems are characterized by a tendency to strive to reduce the gaps between actual and desired conditions, which they do through balancing feedback loops. In the capability trap, the throughput gap motivates actors to take action to reduce the gap. One way to reduce this gap is to have people work harder, which results in the balancing loop B1: work harder. Another way to reduce the gap is to increase the rate at which defects are corrected, which results in the balancing loop B2: Rework. Both of these solutions are likely to decrease the throughput gap quickly. However, both require people to work harder, faster, longer hours, conditions that have the potential to lead to burnout, a variable consistently found to be related to turnover. And, as caseworkers depart the system through turnover, caseload for remaining caseworkers increases, further perpetuating a need to work harder to close the throughput gap.

Managers also have the option to increase resources allocated to process improvement. Increasing such resources also results in a balancing loop that reduces the throughput gap, B3: Work Smarter. Working smarter may be a more sustainable solution, but results take longer to materialize. According to Lipsky's (1980) Street Level Bureaucracy Theory, CW systems are characterized by demand for services that is too high to serve everyone optimally and managers who may encourage a client processing mentality (where caseworkers are pressured to move clients through the system as quickly as possible to meet performance goals to reduce caseloads). This could lead decision-makers to choose working harder over working smarter in order to see immediate results. Another challenge associated with allocating resources to process

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improvement is that improving processes requires employees to spend time learning instead of working. Pressure to learn new processes and complete work may lead workers to develop shortcuts that lowers overall quality (Repenning & Sterman, 2001), which may contribute to recurrent maltreatment and children returning to the system after their case has been closed or delays in permanency that keep caseloads high.

Conclusion

This chapter reviewed the previous research on turnover in CW, including the gaps in this research. McBeath and colleagues' (2014) framework for future research on the organizational and institutional context of CW was also discussed. Finally four theories with great potential for contributing to an explanation of turnover in CW were presented. All of these sources of information contributed to completing the first phase of the system dynamics process, problem articulation, which is described in greater detail in Chapter 3 *System Dynamics*.

Chapter 3

Epistemology

Chapter Three provides an overview of the epistemology informing this dissertation. Feedback is perhaps the most important concept in system dynamics modeling. Researchers employing the feedback perspective believe that systems behave the way they do because of a structure of interconnected feedback loops. This chapter opens with an overview of the feedback perspective. Definitions of key concepts and descriptions of conventions used in system dynamics modeling are provided. The chapter closes with an overview of two additional perspectives that guided this dissertation, grounded theory and the stakeholder perspective. The rationale for their use and their compatibility with system dynamics are discussed.

3.1 The Feedback Perspective

The feedback perspective provided the foundation for this dissertation. Though this perspective can be traced back to numerous scientific disciplines, its main roots lie in engineering control theory and mathematical models of biology. Classic examples of feedback can be found in both (Richardson, 1991). Richardson (1991) provides one classic example: the centrifugal governor for a steam engine, one of the earliest uses of a feedback control system. The governor is responsible for allocating just the right amount of steam to the engine. If the engine speeds up or slows down, mechanisms within the governor adjust the amount of steam that is released, in turn returning the engine to its normal speed. Similarly, the human body strives to maintain equilibrium, or homeostasis. If body temperature rises during exercise on a hot day, numerous biological mechanisms kick in—blood vessels dilate to allow blood flow to

the skin to disperse heat and sweat evaporation disperses heat—to bring the body back to its normal temperature.

Both examples illustrate negative, or balancing, feedback. Balancing feedback loops, along with reinforcing feedback loops, are the building blocks of systems in the feedback perspective. Balancing loops counteract, or correct, the behavior in a system. Figure 4 depicts the basic structure of a balancing feedback loop. To reduce the discrepancy between the actual and desired state of system, corrective action is taken (whether by a human actor or a centrifugal governor in a steam engine) to bring the system closer in line with its desired state. In a CW context, a supervisor may be faced with a gap between the number of caseworkers needed to meet staffing goals and the actual number of caseworkers currently employed. The supervisor would most likely take the corrective action of hiring more caseworkers to reduce the gap, thereby initiating a balancing process. If one were to graph the behavior of a balancing loop over time, the graph would illustrate balancing, or goal-seeking, behavior. Figure 3.1 illustrates the generic balancing feedback *structure* and the *behavior* it causes over time.

Figure 3.1 Balancing Feedback Loop: Structure and Behavior
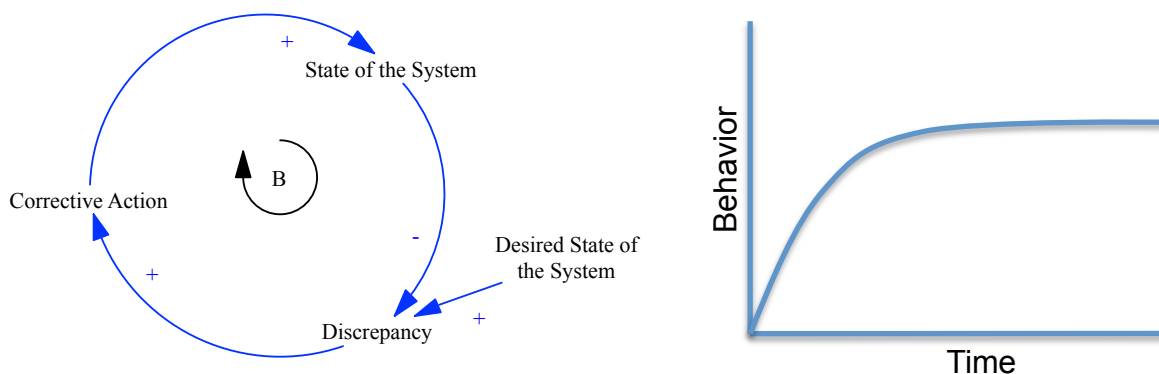
Note: a + polarity indicated variables are changing in the same direction. A – polarity means variables are changing in opposite directions.

Systems also contain positive, or reinforcing feedback loops. In reinforcing loops,

changes in an input cause changes to the output in the same direction. Reinforcing loops, which

result in exponential growth, can be vicious or virtuous cycles. Virtuous cycles occur when a

positive or desired occurrence gains momentum, get more and more positive. Vicious cycles

operate the same way, but with undesirable occurrences. The structure and behavior of a

reinforcing loop is illustrated in Figure 3.2.

Figure 3.2 Reinforcing Feedback Loop: Structure and Behavior
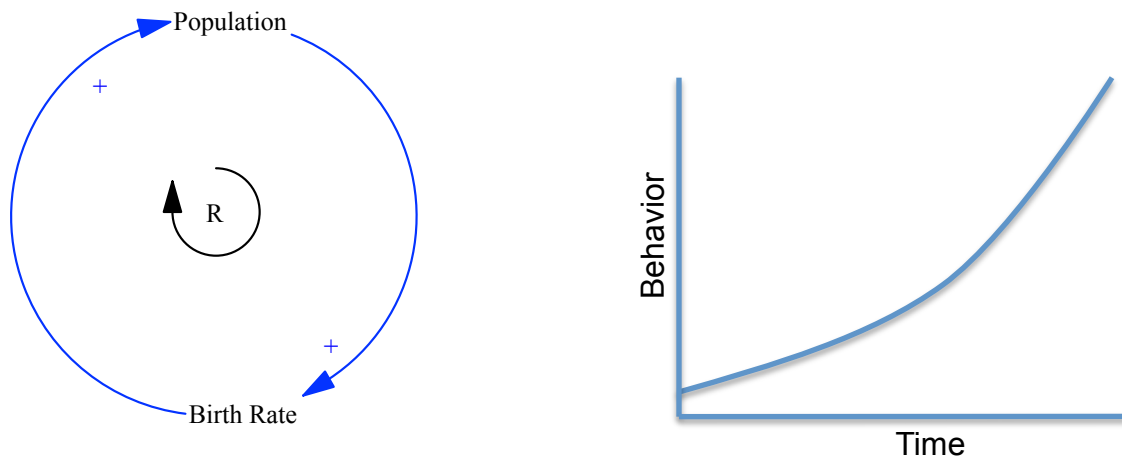
Note: a + polarity indicates variables are changing in the same direction. A – polarity means variables are changing in opposite directions.

The feedback perspective represents a significant departure from the linear perspective

often used in problem solving. It is human nature to view problems as a series of linear events,

each with a cause (Sterman, 2000). When faced with a problem, we tend to assess the gap

between the current situation and how we wish the situation to be, and that gap defines the

problem (Sterman, 2000). We then design a solution and do our best to implement it. The pitfall

here is that we fail to take into account how our solution might affect the state of the system. Our

solutions lead to consequences we had not anticipated. A feedback lens forces decision-makers

to consider how solutions to problems change the state of the system and may introduce more

problems (Figure 3.3).

Figure 3.3 Comparison of Linear and Feedback Perspectives
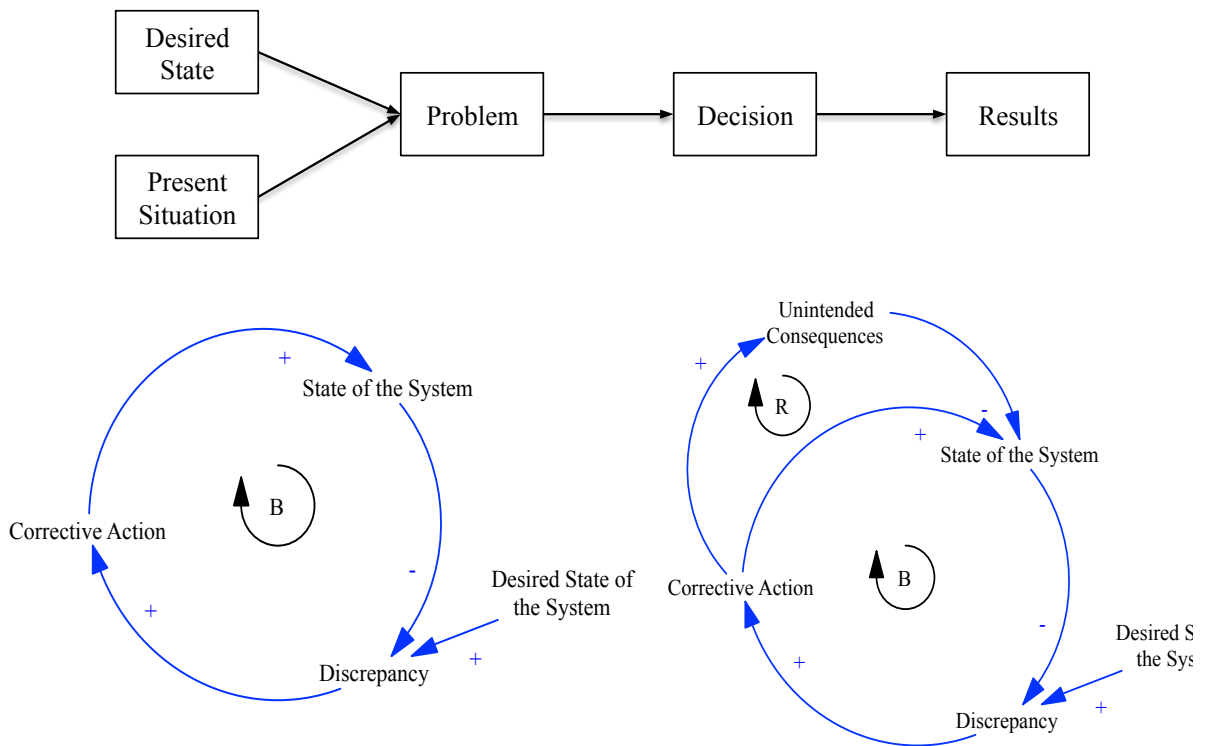
Note: a + polarity indicated variables are changing in the same direction. A – polarity means variables are changing in opposite directions.

The CW system is a dynamically complex system with complex problems. The system

and its decision rules change frequently. The actors in the system—children, families,

caseworkers, schools, attorneys, and many more—interact strongly with one another. The system

experiences policy resistance, meaning that solutions that seem obvious actually end up making the problem worse. For example, some child welfare administrators assert that federal policies on practice and reporting, intended to improve service quality, actually overburden agencies and reduce quality (Corrigan, 2019). These examples are all consistent with the characteristics of dynamically complex systems (Sterman, 2000).

Traditional social science research, and indeed the majority of CW research, most often approaches complex problems from the linear perspective, which attempts to solve them by reducing them to smaller components and analyzing these components using methods based on the general linear model. The feedback perspective argues that complex problems are better solved from a holistic lens because it allows researchers to assess the entire structure of interactions—the whole structure rather than the sum of the parts—between the individual components that make up a system's structure and cause its behavior over time (Hovmand, 2013; Meadows, 2009).

System dynamics modeling is one analytic method that allows researchers to approach problems from the feedback perspective. System dynamics models make explicit the feedback loops, along with delays, that cause a system's behavior over time. System dynamics uses both qualitative and quantitative (formal simulation) models. Causal loop diagrams (CLDs) are qualitative maps of interacting feedback loops that represent a hypothesis or theory about the feedback structure causing a system's behavior. They are made up of variables connected by causal links. CLDs also make explicit delays between one variable's effect on another, which cause instability in a system. For example, a delay will cause a balancing feedback loop to produce oscillating behavior rather than goal seeking behavior.

Table 3.1 Causal Loop Diagram Conventions

+	Positive Polarity: If the cause increases, the effect also increases; if the cause decreases, the effect also decreases
-	Negative Polarity: if the cause increases, the effect decreases; if the cause decreases, the effect increases
	Indicates a delay between cause and effect variables
B	Balancing feedback loop
R	Reinforcing feedback loop

CLDs use standard conventions to tell a feedback structure's story. Causal links are represented by arrows. Each arrow has a polarity, illustrated by a plus (+) or minus (-) sign next to the arrow. Positive polarities indicate the cause increases or decreases the effect in the same direction (Sterman, 2000). For example, "as the birth rate increases, the population increases." Negative polarities indicate the increases or decreases the effect in the opposite direction. For example, "as the death rate increases, the population decreases." Causal loop diagram conventions are summarized in Table 3.1.

Formal system dynamics simulation models are structured as stock and flow diagrams. Stocks represent accumulations of material or information that build and/or deplete over

Figure 3.4 Population stock and flow structure

time (Meadows, 2009). Stocks accumulate through inflows and outflows. Flows are dependent

on the quantity already in the stock (Warren, 2008). Figure 3.4 shows a simple stock and flow

structure of a population. The population accumulates according to the birth rate and depletes

according to the death rate. Clouds at either end of the flow indicate the model boundary. The

positive link from the population stock to the death rate indicates that as the population increases,

the death rate increases. As the death rate increases, the population decreases. Thus, this link

forms a negative feedback loop and illustrates how flows are dependent on the quantity already

in the stock. In addition to the amount already in the stock, flow rates are determined by

auxiliary variables representing information on which decisions are made. In simulation models,

stocks accumulate, or integrate, according to the rates of their inflows and outflows and are

represented by integral equations:

$$Population(t) = \int_{t0}^{t} [Birth\ rate - death\ rate] ds + Population(t0)$$

Qualitative system dynamics models such as CLDs are useful for hypothesizing about a

system's structure and gaining surface insights, but to generate deeper insights, simulation is

needed. Figure 3.5 depicts the type of insights that can be gained from types of models. Because

of the human limitations associated with understanding complexity (as discussed in Chapter 1),

qualitative models usually fall short of representing reality. Even when created in a group

context, errors such as omitting parameters and delays are often made (Sterman, 2000). Thus,

simulation is the only way to truly test the hypothesis represented in a CLD. Further, it is the

only way to analyze the system to determine where its leverage points reside and determine how

interventions, represented by changes in structure, will change the behavior of the system.

Figure 3.5 Types of Models and System Insights*
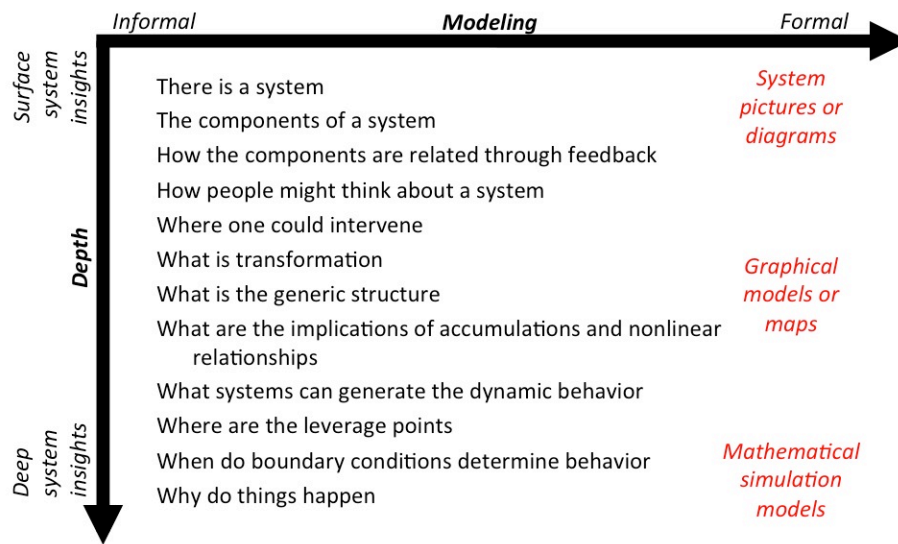
* Hovmand's conceptualization of types of models and level of insight (2014, p. 49).

3.2 Grounded Theory

In addition to the feedback perspective, this dissertation's research design was guided by

the principles of *grounded theory*. Historically, the CW literature, including the turnover

literature, is light on theory. There is currently no theory that describes how CW organizations

successfully or unsuccessfully provide services to families. Grounded theory is a form of latent

structure analysis that allows a researcher to uncover and reveal fundamental patterns to form an

explanation of how and why a phenomena occurs (Glaser, 2002). Grounded theory relies heavily

on the stakeholder perspective to allow a theory to emerge as participants provide rich

descriptions of their lived experience with the phenomena in question (Glaser & Strauss, 1967).

Concepts are patterns that are identified by an ongoing comparison of data until saturation is

reached, or no new information or themes are emerging from the data (Glaser, 2002). Thus, data

collection and analysis occur simultaneously as the researcher shifts between data collection and

analysis, revising interview questions as the theory emerges (Padgett, 2008). System dynamics

follows a similar pattern of shifting between collecting and analyzing data, as illustrated in

Figure 3.6. For example, although the formulation of the dynamic hypothesis is the second phase

in the system dynamics process, the dynamic hypothesis will be revisited as more information is

gathered and analyzed during subsequent phases.

Figure 3.6 The Iterative Process of System Dynamics Modeling*

*Sterman, 2000, p. 87

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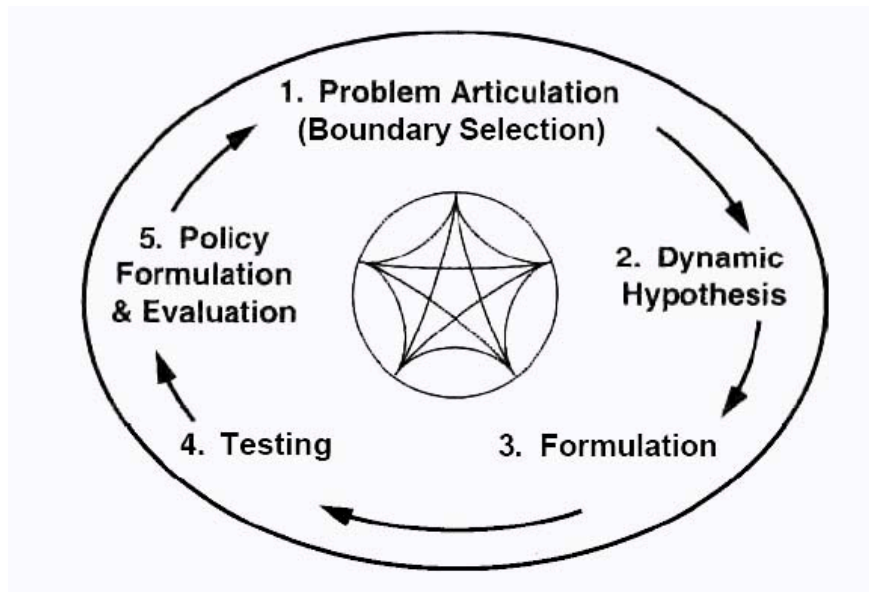
3.3 The Stakeholder Perspective

Finally, this dissertation study was designed with the belief that the perspectives of stakeholders in CW are the best source of information about how the system operates in the real world. The stakeholder perspective is optimal for developing a deep understanding of the lived experience of those who know the system best (Padgett, 2008). The stakeholder perspective also allows the researcher to get inside the "black box" (the mechanisms underlying the associations). The stakeholder perspective is compatible with system dynamics. Jay Forrester, the founder of system dynamics, proposed that individuals' stored mental information is the most extensive and important data type available for system dynamics modeling, far exceeding the written and numerical databases in utility (Forrester, 1992). Group model building (GMB) is a method for building system dynamics models by capturing the mental databases of stakeholders in a participatory setting. This approach to modeling is advantageous in that it encourages stakeholders to develop a shared reality of a problem, thereby overcoming conflicting mental models and subjective realities that are misaligned with objective reality (Vennix, 1996; 1999). Chapter 4 provides a detailed description of the GMB process.

Figure 3.7 The Mental, Written, and Numerical Databases*
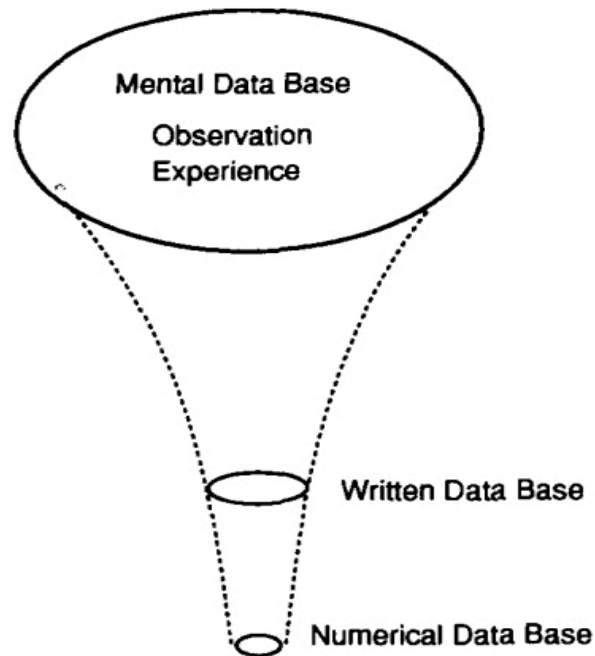
*Forrester, 1992, p. 56

Conclusion

This chapter provided an overview of the epistemological perspectives that guided the study's design and research methods. The following chapter describes in detail how grounded theory and the stakeholder perspectives were used to first create a qualitative feedback structure hypothesizing the causes of turnover in foster care services and then a formal simulation model to test that hypothesis.

Chapter 4

Research Methods

Chapter Four describes the research design and methods. The study was a single case study design and used mixed-methods system dynamics modeling. As discussed in Chapter Three, it was guided by the feedback perspective, grounded theory, and the stakeholder perspective. The study was also designed to follow the five steps of the system dynamics modeling process outlined by Sterman (2000): (1) problem articulation, (2) formulation of the dynamic hypothesis, (3) formulation of the simulation model, (4) testing, and (5) intervention design and analysis, to achieve the following aims:

Aim 1: Develop a dynamic hypothesis depicting the system structure causing turnover.

Aim 2: Develop a formal simulation model and test the dynamic hypothesis developed in Aim 1 and build confidence in the model.

Aim 3: Determine the best places in the system to intervene.

Aim 4: Develop and test an intervention that will effectively and sustainably reduce turnover

The study used a mixed methods research design. Mixed methods goes beyond simply using qualitative methods together with quantitative methods. It is a stand alone approach where qualitative and quantitative methods are integrated throughout the research process to strengthen the study (Cresswell, 2014). Thus, to be true mixed methods research, the whole must be greater than the sum of the parts:

Mixed Methods > Qualitative Methods + Quantitative Methods

Mixed methods research allows a researcher to gain deep understanding about a context or phenomena while also testing hypotheses with precision (Rubin & Babbie, 2013). Thus, this approach has much greater explanatory value than using only qualitative methods or only quantitative methods to understand a phenomena. The following sections describe the mixed methods approach.

4.1 Data Collection

This dissertation employed two methods for collecting primary data from stakeholders. Interviews and GMB workshops were used to capture stakeholder mental models about turnover at their workplaces and in the broader foster care services context. The following section describes the interview recruitment process, the process for developing the interview guide, the interview procedure, the data coding process, and how interview data were used. It ends by describing the GMB workshop procedure and discusses how data from the workshops were analyzed and used.

4.1.1 Stakeholder Interviews

Recruitment

Missouri's public child welfare agency, the Children's Division, currently contracts with consortiums of agencies to provide foster care case management services. The Children's Permanency Project (CPP) is one consortium that serves families in St. Louis City, St. Louis County, St. Charles County, and Jefferson County, Missouri. CPP is made up of three agencies: FamilyForward (Family Resource Center at the time of the study), Youth in Need, and Epworth Children and Family Services. All participants in the study were employed at CPP. Caseworkers at CPP utilize the title "case manager" and will hereafter be referred to as such.

An application to conduct research with human subjects was submitted to the Washington University in St. Louis institutional review board (IRB). The IRB responded that because the research was examining a system, it did not constitute human subjects research. Therefore, the interviews did not include any questions about individuals such as demographic information.

To recruit stakeholders to the study, the researcher consulted with the CEO of the consortium to develop a non-coercive recruitment strategy. The researcher then visited a CPP staff meeting where an overview of the study was provided and CPP employees were informed they would be receiving email correspondence inviting them to participate. The CEO then provided the researcher with a list of supervisors and caseworkers and their email addresses and phone numbers. To ensure recruitment goals were met, all caseworkers and supervisors, for a total of 43 were sent an email that introduced the study and invited their participation. The email contained an attached letter from the CEO indicating her support. Interested stakeholders were instructed to contact the researcher to learn about participation and to schedule an interview. For each of the following three weeks, if stakeholders had not responded and recruitment goals had not been met, a reminder email was sent. Appointments for interviews were scheduled on a rolling basis as stakeholders responded indicating their interest in participating. Across the three agencies, there were five separate units at the time of the study. After five interviews were completed, interviews had not been conducted at two of the units and the researcher focused recruitment efforts on these two units until an interview at each unit was conducted. A total of 9 stakeholders participated, including three supervisors, five case managers, and the CEO. At the end of each interview, the researcher reminded that they would be invited to participate in the GMB workshops. Consistent with grounded theory, interview data were collected and analyzed

simultaneously. After 9 interviews, a consistent set of themes was emerging in the data and recruitment efforts ended.

Two weeks prior to the GMB workshops, all case managers and supervisors were sent an email with a brief overview of the GMB process and an invitation to participate. The CEO was not invited to participate in the GMB workshops to increase the likelihood that case managers and supervisors would feel comfortable to speak honestly during the workshops.

Interview Guide

The stakeholder semi-structured interview guide was developed after a thorough review of peer-reviewed literature, gray literature, and theory pertaining to turnover and/or retention in CW services was conducted. Past conversations with child welfare professionals and an observation conducted by the researcher of a 2013 community forum on problems in Arizona's child welfare system were also taken into account when creating the interview guide. The interview focused on two main domains: 1) the causes and consequences of turnover and 2) whether turnover was perceived to be a core problem. Stakeholders were asked what they perceived to be the main reasons case managers leave their jobs. If necessary, the researcher provided probing questions around key variables from the literature such as *caseload, stress,* and *burnout*. Probes for consequences of turnover included longer time in *foster care* and decreased *morale*. Stakeholders were asked how turnover affects the climate at the agency. Finally, stakeholders were asked if they thought turnover was a problem and whether they thought there were bigger problems researchers should focus on. The interview guide is presented in Appendix A.

Interviews lasted approximately one hour, were conducted in person in a private office in the stakeholder's agency of employment. They were audio-recorded and later transcribed by the researcher. In accordance with grounded theory, the interview guide was amended as new themes of importance emerged. For example, as it became evident that differences between units existed, questions to learn more about these differences were included in the interview.

Interview Data Analysis and Use

Data from the stakeholder interviews was used throughout all phases of the modeling process. For example, during problem articulation, the researcher read through the transcripts looking for instances that stakeholders shared perceptions of whether or not turnover was a core problem in foster care services. During the problem articulation phase, key variables and themes were identified by following a systematic process for coding purposive text data to create system dynamics models developed by Kim & Andersen (2012). This process is illustrated in Table 4.1.

Table 4.1 Summary of Coding Process*

Goal	Main Tool	Input	Output
Discover themes in the data	Open Coding	Raw interview data	Definition of problem Selection of relevant data segments
Identify key variables and their causal relationships	Open coding Causal links	Data segments	Coding charts
Transform text into words and arrow diagrams	Causal links Causal maps	Coding charts	Word and arrow diagrams
Generalizing structural representations	Axial coding Causal maps	Word and Arrow Diagrams	Seed structure

* Adapted from Kim & Andersen, 2012

Coding was done on hard copies of interview transcripts by hand and by using tables in Microsoft Word. Open coding is used to define problems and identify causal factors embedded in stakeholder mental models and to group and categorize themes. The researcher began the process by reading transcripts and highlighting data segments related to turnover. Any applicable notes, as well as a name, or "code," were written in the margin. As open coding progressed, recurrent themes emerged. The researcher copy and pasted the data segments into coding charts in Microsoft Word, grouping data segments together and ultimately assigning each group of segments a code. Throughout the coding process, the codes and groupings were revisited and amended to incorporate new information. Once themes had been established, the researcher revisited the transcripts to identify instances where stakeholders used causal language, such as "workload causes turnover." The researcher then created a chart of cause and effect relationships, representing each with the CLD convention of two words joined by an arrow with a positive or negative polarity.

The interview data were then used to create a causal map for use during the *causal mapping with seed structure* exercise in the GMB workshops. The researcher separated out variables representing important accumulations and modeled these as stocks. Next, axial coding was used to determine where the structure segments should connect to form a system of interconnected feedback loops. The coding charts were carefully reviewed to identify segments that contained common variables. Consistent with Kim & Andersen (2012), some variables were assigned more general names. For example, "I just have way too much to do" was renamed as "workload." The segments were then connected based on the stories shared by the stakeholders during the interviews and relationships that are consistent throughout the CW research literature.

Once the causal map was created, the researcher revisited the interview transcripts and the coding charts to make sure the map was consistent with both.

4.1.2 Group Model Building Workshops

Two GMB workshops were conducted, one with foster care case managers (n=16) and one with foster care supervisors (n=8). The workshops were held at the agency's headquarters and lasted from 8:00 a.m. until 3:00 p.m. They were conducted by a core modeling team consisting of a trained facilitator, modeler (or wall builder), and recorder. Breakfast and lunch were provided. The sessions followed a detailed, structured manual (see Appendix B), which consisted of the *causal mapping with seed structure* script and *the action ideas* script (Hovmand, 2012). Group model building scripts provide systematic and standard guidelines from conducting GMB exercises. They define the exercise inputs and outputs, standard procedures, and the roles of each member of the core modeling team (Hovmand, 2012). The researcher, who is familiar with the articulated problem, its context, and the language used by stakeholders, and who is also trained system dynamicists, facilitated the workshop. Master's in social work students with expertise in system dynamics modeling served as the modeler and recorder.

Figure 4.1 Group Model Building: Combining the Feedback and Stakeholder Perspectives

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Causal Mapping with Seed Structure

The *causal mapping with seed structure* script is used to create a CLD that represents the feedback structure causing the problem in question. During the *causal mapping with seed structure* exercise, the seed structure was presented to participants in an "unfolding" fashion. While the facilitator relayed the story behind the structure, the modeler drew the corresponding structure on a whiteboard. As the structure unfolded, the facilitator familiarized the stakeholder participants with system dynamics conventions such as stocks, flows, polarities, delays, and reinforcing and balancing feedback loops. Once the entire seed structure had been drawn on the whiteboard, the facilitator invited participants to make corrections and additions to the model as the modeler drew the emerging model on this white board. The case manager and supervisor workshops each produced complex CLDs depicting the feedback structure causing turnover.

Action Ideas

The *action ideas* script is used to identify and prioritize actions after the model has been developed (Hovmand, 2013). The facilitator instructed the group to take 10 minutes to write down as many action ideas as they could that would impact the model created during the causal mapping with seed structure exercise. Each action idea was written on a separate piece of 8 ½ by 11 paper. In round-robin fashion, each participant then presented their favorite action idea to the group as the wall builder placed the idea on the whiteboard according to where the group felt it fell on two continua, low to high effectiveness and easy to difficult to implement.

GMB Data Analysis and Use

The two CLDs produced in the GMB workshops were entered in Vensim PLE software. Each was then reviewed to ensure the model structure was consistent with notes taken during the

workshop. The CLDs were then combined into a single CLD for use in the second phase of the modeling project: formulation of the dynamic hypothesis. After the problem is articulated, the modeler next focuses on formulating a dynamic hypothesis. Traditionally, complex problems are addressed by reducing them into smaller components and exploring the details associated with the components (Hovmand, 2013). Instead of reducing complex problems to parts, system dynamics approaches them holistically, arguing that the structure of interactions between the individual components causes the system's behavior (Hovmand, 2013). This causal relationship between a system's structure and its behavior is represented by the dynamic hypothesis. The dynamic hypothesis consists of a CLD illustrating a working theory of the feedback structure causing the problematic behavior over time, which is illustrated in the reference mode.

The CLDs from the GMB workshops were integrated into a single diagram following the procedure outlined by Hovmand (2013). First, similarities and differences in the models were identified. Hard copies of the two models were placed side by side, similar variables were circled, and key chunks of structure and common chunks of structure were highlighted. Key differences between models were also highlighted using a different color. A new CLD incorporating both models was then redrawn in Vensim. Once the models were integrated, interview transcripts were revisited to check for consistency before the CLD to be used in the dynamic hypothesis was finalized.

4.1.3 Additional Data

Additional data were used during all phases of the study. Peer-reviewed and gray literature informed problem articulation. Transcripts and observation notes from a 2013 community forum on CW in Arizona as well as conversations with CW stakeholders were also taken into account. Complete staff listings from the study site were emailed to the researcher on

a monthly basis from June 2014 until August 2019. Data published by the state child welfare agency, such as the request for proposal to which the study agency responded, were used to specify the simulation model. A summary of the steps in the system dynamics process, the data used in each step, and the corresponding aim are summarized in Table 5.1.

Table 5.1 Steps in the System Dynamics Modeling Process and Corresponding Inputs and Outputs

Aim				Goal	Inputs	Outputs
1	2	3	4			
				Problem Articulation	Peer reviewed literature Gray literature Conversations with stakeholders Stakeholder interviews AZ community forum	Themes Key variables Time horizon
				Formulation of Dynamic Hypothesis	Peer reviewed literature Review of theory Stakeholder interviews	Causal loop diagram Reference mode
				Formulation of Simulation Model	Stakeholder interviews Agency admin data Qualitative/descriptive data from literature	Structure specification Estimation of parameters, behavioral relationships, initial conditions Running simulation model
				Testing	Mapping	Confidence in model Leverage points
				Policy Design and Evaluation	Stakeholder interviews Action ideas script Peer-reviewed literature	Confidence in policy

4.2 The Simulation Model

During the formulation phase, the CLD from the dynamic hypothesis was re-specified as a simulation model in Vensim PLE. Several strategies commonly practiced in system dynamics were used to construct the model. First, molecules and generic structures (segments of structure

that show up repeatedly in systems and are generalizable to a wide variety of contexts) were used when possible. Next, past workforce and human resources models were reviewed for usable structure and to gain insights on how other modelers had approached the process and assigned quantitative values to workforce variables (Hovmand & Ballard, 2018, unpublished; Warren, 2014 Sterman, 2000). During the process of formulating the model, it is common for modelers to identify vague concepts that require further definition as well as contradictions that need to be reconciled (Sterman, 2000). For example, as the model was being formulated, it became apparent that some of the variables in the model needed to be more precisely defined in order to be operationalized. For example, the variable *frustration* required further conceptualization. The researcher revisited the interview audio recordings and transcripts to gain deeper insights into the stakeholder mental models and then turned to peer-reviewed literature to locate an operational definition of *frustration* that was consistent with the information contained in the interviews.

Once a stock and flow structure was developed, numerical values were assigned to parameters (constants) and initial stock states in the model. Some values, such as *normal time to achieve permanency*, were derived from federal and state CW policy. Others, such as *caseload standard* and *initial case managers* were outlined in policies and administrative documents provided to the researcher by the study site. Data from stakeholder interviews also provided numerical values, such as the *average time to hire* a case manager.

It is the norm, rather than the exception, for system dynamics modelers to encounter situations where needed data are not available, and this is especially true when modeling human behavior. Fortunately, common system dynamics tricks-of-the trade exist for dealing with unavailable data. In Homer's seminal paper on partial-model testing as a validation tool for system dynamics, first published in 1983 and again in 2012, he states, "one can use logic or

knowledge gained from general experience to fill in the structural gaps left by empirical research; indeed, "educated guesses" are part and parcel of the model-building process." (Homer, 2012, p. 282). Partial model testing, which involves simulating portions of the model, can be used to determine appropriate ranges from uncertain parameters. The process begins by guessing which formulations or parameters will most likely produce behavior corresponding to historical data. The structure and/or parameters are then adapted and the process is repeated until an acceptable fit is obtained (Homer, 1983). This process was used to estimate some uncertain parameters and initial conditions in the model. For example, there were no data available to estimate the initial value in the stock of *frustration* in the model. But because historical data revealed a steady 25% turnover rate and *frustration* was the only auxiliary variable effecting the *fractional turnover rate*, partial model testing was used to formulate a small structure with the initial frustration value that produced behavior that was consistent with the historical data.

Partial model testing also allows portions of structure to be simulated and analyzed before connecting them to the larger simulation model with the goal of reducing the number of unwanted surprises when the entire model is simulated (Sterman, 2000). Segments of structure are simulated to assess whether they produce reasonable behavior and are also subjected to several confidence-building tests.

4.3 Model Testing

The saying "all models are wrong" is generally attributed to statistician George Box (1979), but system dynamicists have enthusiastically adopted it and made it a well-known and oft uttered adage in our field. Still, system dynamics modelers must to their absolute best to ensure their models are the best possible representations of reality. Confidence-building tests

allow modelers to assess the validity of a model and to build confidence in it. Model testing begins during the model formulation phase and partial models as well as the entire model are tested (Sterman, 2000). The model in this dissertation was subjected to the confidence-building tests below.

4.3.1 Boundary Adequacy Test

The boundary adequacy test assesses the boundaries for appropriateness, including determining whether variables and feedbacks that should be included have been included and that those outside the appropriate boundary have been excluded. A model boundary chart listing endogenous, exogenous, and excluded variables was created and cross-checked with the variables in the model. Stakeholder interview data were revisited to identify potential variables and feedback processes that had been omitted from the model.

4.3.2 Structure Assessment Tests

Structure assessment tests examine whether the structure in the model is an accurate representation of real-world structure, while considering the purpose of the model. For example, a model created for theory development, such as the one in this dissertation, has different structural needs than a model whose purpose is to elucidate the dynamics associated with the availability of beds in a CW residential center. A model for developing theory does not have to drill down to the same level of detail as one that tracks how children move through such a center on a day-to-day basis. In either case, the model must be checked for situations that violate laws of nature, such as stocks that become negative. A stock of case managers cannot become negative. Partial model simulation and revisiting qualitative data from earlier phases of the study were also used to assess the structure.

4.3.3 Dimensional Consistency

Dimensional consistency tests ensure that units used in equations are dimensionally consistent. Inconsistencies often indicate flaws in structure. Vensim PLE features a simple dimensional consistency test, which was used throughout the model formulation process.

4.3.4 Extreme Conditions Tests

Extreme conditions tests allow the modeler to determine how the model behaves under extreme and even unrealistic conditions. Numerical values in the model were adjusted to extreme values and the model was simulated to make sure it produced reasonable behavior.

Conclusion

This chapter presented the research methods used to capture stakeholder perspectives on turnover in foster care services. The following chapter presents the results from the qualitative portion of the study.

Chapter 5

Qualitative Results

The previous chapter describes the processes for collecting and analyzing semi-structured stakeholder interviews and GMB workshops with stakeholders. This chapter reports the results of that analysis. The first section details the major concepts that emerged from the stakeholder interviews. The second section presents the dynamic hypothesis, which includes the CLD, or qualitative model, that was constructed using the interview and GMB data.

5.1 Semi-structure Interviews with Stakeholders

Four main concepts emerged from the semi-structured stakeholder interviews: 1) frustration, 2) supervisor support, 3) camaraderie, and 4) turnover is a core problem with domino effects.

5.1.1 Frustration

> Stakeholder: *"I shouldn't have to copy and paste something six flippin' times. I mean, that's just ridiculous."*

Case managers, supervisors, and the CEO all acknowledged that frustration is a common emotion in foster care case management. According to stakeholders, biological and foster families are frustrated, case managers are frustrated, and upper management is frustrated. Across all participant types, "frustrating" was perhaps the most common word used to describe working in the foster care system. Case managers reported that supervisor support, workload, bureaucracy, and dealing with emergency tasks that pop up all affect frustration levels. One case manager lamented,

"There's just soooo much…paperwork-there's a lot of redundancy in paperwork-um that gets frustrating. There's not enough time in the workday to get everything done so you have to prioritize what needs to get done first. And then you may have a supervisor throw in "you need to get this done by tomorrow." I had x, y, and z lined out, where I am going to throw in g?"

It was common for case managers to express frustration over having a sincere desire to help children but being unable to because of bureaucratic challenges such as dealing with the family courts, who were perceived to not value the case managers' contributions and opinions. Further, case managers reported excessive, time consuming, and pointless documentation requirements, seen as red tape, that took time and energy away from serving children. With a tone of exasperation in her voice, a case manager relayed her frustration: "It's frustrating, like this job requires too much time, you're just multi-tasking like crazy, I mean there's a million—I mean you're responsible for a child's entire life." Other documentation requirements caused frustration because they were simply seen as pointless, yet case managers had no choice but to complete them. These tasks were described as "stuff that *really. doesn't. matter*. I don't know why they even come up with some of this stuff? I guarantee nobody ever looks at it. It just sucks."

5.1.2 Supervisor Support

> *Stakeholder:* *"When the case manager first starts, the supervisor needs to walk the path with them. They need to be engaged and very responsive."*

> *Stakeholder:* *"A friend is what I need in a supervisor."*

Case managers, supervisors, and the CEO all reported that supervisor support (or lack thereof) is a critical cause of retention and turnover. Supervisor support was consistently reported to be the biggest buffer to frustration. Two main types of supervisor support were discussed: supervisor case support and supervisor emotional support. Case managers indicated that supervisor case support was more important when they first started their jobs and lacked experience. One case manager, who stated that her supervisor was very supportive (and who was employed at a unit with a 0% turnover rate during the past three years) said,

> "At the beginning, I had the support-I was calling my supervisor 20 times a day
> probably, but in the evening, you know, answering my questions. They've been in
> this field for a long time and they do support us. They have our backs."

Another case manager from the same unit, commented, *"I asked a lot of questions. They said I was the 'question queen' when I got here, but you know you want to learn."* When case managers don't have a supervisor who will "help them learn to do the job better, walk along with them, and coach them," they experience feelings of incompetence that can make other job tasks seem overwhelming.

Case managers discussed supervisor case support as being distinct from supervisor emotional support. Case managers reported decreased need for supervisor case support as they became more experienced in their jobs, but reported a high need for supervisor emotional support throughout their tenures as case managers. More experienced case managers discussed the importance of supervisors being available to listen if a case manager needs to vent or to provide encouraging words on challenging days.

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5.1.3 Camaraderie

> *Interviewer:* *"So what about camaraderie and morale?"*
> *Stakeholder:* *"It's huge. It's made all the difference in the world."*

Case managers, supervisors, and the CEO all reported that camaraderie was the biggest buffer against frustration. Case managers stated that camaraderie with other case managers was one of the main reasons they had not left their jobs despite being frustrated. "Those are the people that are going to understand. I mean, I can call my mom, but she doesn't get it," reported a case manager. Further, turnover greatly impacts camaraderie that has been built. One case manager had just recently learned that a coworker was leaving:

> When I hear that so-and-so is looking for a new job—you know, the girl that turned in her notice, is my best friend here so it's upsetting, it sucks—and then other people are like "I'm going to look." And I'm like "well if everybody's leaving, I'm not going to stay here by myself. You know, it's [camaraderie] really important.

Stakeholders reported they felt facilitating camaraderie was a key supervisory role and part of providing emotional support. One supervisor invited all staff members to eat lunch together on a regular basis. During these lunches, case managers were encouraged to vent and seek support. The supervisor also organized off-site events regularly and case managers discussed how important these events were to morale. At one such event, the supervisor hosted a barbeque at his home and allowed case managers to throw pies at his face while he sat in a chair draped in a shower curtain. The pie-throwing event, intended to be an opportunity for case managers to blow off steam and induce laughs, was brought up in several interviews as an example of effective supervisor emotional support and camaraderie building.

5.1.4 Turnover is a Core Problem with Ripple Effects

> Interviewer: *"Do you see turnover as a problem?"*
> Stakeholder: *"It is a mammoth problem. Sometimes children will have four case managers in a year"*

Each stakeholder was asked whether they viewed turnover as a core problem in their workplace and in foster care services in general. Every stakeholder responded that they perceived turnover to be a big problem. Stakeholders in units with low turnover rates were aware it was a problem in other units within the consortium. Stakeholders were also aware that turnover has ripple effects. Turnover was reported to decrease permanency rates, disrupt camaraderie, increase the amount of time supervisors spend hiring and training new workers, and create a crisis-driven work atmosphere. Having a staff comprised mainly of new, inexperienced hires was noted by one senior stakeholder as especially problematic:

> "When you have a lot of turnover, the only way you can function is crisis, crisis, crisis. There are ten crises a day because, 'they didn't get it done,'… 'they're too new'… "they didn't know what they're doing'… 'they didn't have support.'"

This senior stakeholder described a context where supervisors were so busy hiring, training, and dealing with crises that there was no time left to supervise. In one unit where turnover was particularly problematic, stakeholders described a situation where increased turnover led to supervisors spending all of their time on hiring and managing crises, which decreased available time to provide case and emotional support, causing more employees to quit. This vicious cycle left this unit with an annual turnover rate of 90% at the time the interviews were conducted.

5.2 Refining Concepts from the Qualitative Data

As the process of gathering and analyzing interview and GMB data progressed, it became apparent that some concepts described by stakeholders would require more precise definitions. In discussing the importance of concepts, John Gerring (2012, p. 112) stated, "concepts are integral to every argument for they address the most basic question of social science research: what are we talking about?" Much of the past research on turnover in CW used concepts such as "stress" and "burnout." In the current study, stakeholders did not discuss stress or burnout; rather, most of their discussion centered on "frustration." Before creating the CLD and then moving on to the next phase of the project, it seemed prudent to attempt to untangle the definitions of these concepts: in this context, was frustration different than stress and burnout, or just another name for the same concept?

One of the benefits of qualitative research is that it elicits rich descriptions of the lived behavior of those closest to the phenomena. The researcher revisited the audio recordings of the stakeholder interviews to observe the vocal tone stakeholders used when they talked about frustration and to pay close attention to the types of events that were associated with frustration in their stories. The researcher then turned to peer-reviewed literature to examine how other researchers had conceptualized frustration, burnout, and, stress. Burnout is almost always defined according to the three dimensions: emotional exhaustion, depersonalization, and personal accomplishment (Maslach, Jackson, & Leiter, 1996). These dimensions were not consistent with the stories stakeholders told about frustration. Stress among CW workers has been conceptualized as child-related stress (seeing abused children), visit-related stress (visiting violent clients or making visits in bad weather), workload stress (like providing backup for other workers, working overtime, answering phone calls at night, and responding to crisis calls),

workplace support, and perceptions of caseload (Rao Herman & Chahla, 2019). With the exception of workload stress and workplace support, stakeholder's stories were not consistent with this conceptualization of stress.

After an exhaustive literature search on these concepts, the researcher determined that self-determination theory (SDT) provided the most consistent conceptualization of frustration as described by stakeholders. SDT originated in social psychology and is a widely used theory of motivation. Its main assertion is that numerous positive outcomes including organizational commitment, performance, and job satisfaction are derived from the satisfaction of three basic psychological needs: autonomy, competence, and relatedness (Deci & Ryan, 2000). Autonomy, in the context of an organization, is the experience of feeling a sense of choice about how one carries out one's work tasks, rather than feeling their behavior is controlled by outside forces (Deci & Ryan, 2000). Case managers in both the interviews and GMB workshops consistently expressed a great deal of frustration at having no choice about completing tasks they saw as bureaucratic and "pointless." They also reported frustration over feeling controlled by the various actors in the family court system, both in what was expected of them and how their time was structured. A particular point of frustration was waiting for hours in court for various parties to show up or for a case to be heard. Competence is very similar to self-efficacy. It refers to feelings that one can effectively bring about desired outcomes and effects (Reis, Sheldon, Gable, Roscoe, & Ryan, 2000). Relatedness refers to feeling close and connected to others, feeling a sense of belongingness, and caring for and being cared for by others (Longo, Gunz, Curtis, & Farsides, 2014). This conceptualization of relatedness is very consistent with how stakeholders described camaraderie. Thus, as the project progressed to the next stage, which included refining the CLD for the dynamic hypothesis, frustration was conceptualized in terms of autonomy,

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competence, and relatedness, although the labels provided by stakeholders (bureaucracy, self-efficacy, and camaraderie) were used as variables in the CLD.

5.3 Dynamic Hypothesis

A dynamic hypothesis consists of a causal loop diagram (CLD) and a reference mode. The CLD represents the working theory about the feedback structure that is causing the problem behavior. The reference mode represents how the problem has unfolded over time and how it is likely to continue given business as usual conditions. The reference mode is depicted as a behavior over time graph, which depicts the historical trends and potential future trends. Future trends include desired and feared behavior. The reference mode serves as the cornerstone of the modeling project. Ultimately, the modeler compares simulated behavior to the reference mode to determine whether the simulated structure produces behavior that matches the historical trends. Figure 5.1 illustrates the dynamic hypothesis.

5.3.1 Reference Mode

The review of peer-reviewed and gray literature revealed that average turnover rates in CW have hovered at around 20 to 40% annually for decades (Annie E. Casey Foundation, 2017). Administrative data from the study site indicated turnover rates held steady at around 25%. Thus, a reference mode indicating a historical trend of 25% turnover was created with a time horizon ranging from 2000 to 2040. The reference mode depicts two feared behaviors: that turnover rates will stay the same or that they will actually go up. The desired scenario depicted is that turnover will decline and then hold steady at about 10%.

5.3.2 Causal Loop Diagram

This section presents the feedback structure that emerged from stakeholder interviews and GMB workshops and that was used as the CLD in the dynamic hypothesis. The structure revealed a dynamic process where supervisors who are faced with ongoing case manager shortages have two options for corrective action: increase the hiring rate or slow down the turnover rate. Both modes of corrective action form balancing loops in the structure. Stakeholder interviews revealed that the most effective retention strategies are increasing supervisor case support (particularly when case managers are new and inexperienced) and increasing supervisor emotional support. Increasing both types of supervisor support has beneficial side effects. Increasing emotional support leads to increased camaraderie and decreased frustration, which slows the turnover rate. Increasing case support builds experience, which in turn increases case manager self-efficacy and decreases frustration. Further, increasing case support also speeds up permanency rates, which increases self-efficacy and decreases frustration.

Focusing on retention rather than hiring appears to be the better choice. With lower turnover rates, supervisor time is diverted away from hiring and onboarding new employees and dealing with crises caused by inexperienced case managers. This time saved can be reinvested in retention and other activities such as implementing evidence-based practices and professional development. Other benefits include a reduction is costs associated with hiring and training new employees. However, when operating in the "crisis mode" described by stakeholders, choosing hiring and its quick results, may appear to be the only choice. When supervisors make the choice to focus on hiring, the time available to focus on retention decreases. Eventually, a focus on hiring becomes the primary mode of operation. Units are left with an inexperienced staff of case managers with low self-efficacy. Camaraderie never has a chance to build because case

managers are constantly leaving. Permanency takes longer to achieve, further damaging self-efficacy and increasing frustration, leading to more turnover. The agency or unit is now stuck in a *turnover trap*.

The *turnover trap* theory presented here is similar in structure to Repenning's and Sterman's (2001; 2002) capability trap theory of process improvement. The capability trap is discussed in detail in Chapter 2. It describes how the capability of an organizations erodes when it gets caught in a trap of working harder rather than working smarter (improving processes). As capability erodes, the *work harder* loop gains strength until the organization becomes "addicted" to working harder at the expense of working smarter. The *turnover trap* theorizes a similar dynamic where the *hiring* loop gains strength until the agency or unit is "addicted" to focusing on hiring at the expense of focusing on retention.

5.3.3 Feedback Loops

This section describes the feedback loops that make up the full CLD, which is presented in Figure 12.

Balancing Loops: Focus on Hiring or Focus on Retention to Reduce the Gap

Case Managers are depicted in the CLD as a stock. The number of case managers in the stock can change only though its flows. For decades, CW administrators and supervisors have been faced with the ongoing problem of a gap between the number of case managers needed to meet federal CW standards and the actual number of case managers employed. To reduce this gap, supervisors seeking have two choices: speed up the hiring rate or slow down the turnover rate. Either corrective action forms a balancing loop. However, focusing on hiring produces faster results than focusing on retention, which comes with a delay. **B1 Hiring** illustrates how hiring additional case managers narrows the gap between actual and needed case managers.

The remainder of the balancing loops described below illustrate the way focusing on retention also narrows the gap between needed and actual case managers by slowing the turnover rate. In the interviews and GMB workshops, stakeholders indicated that the main reasons they choose to stay in their jobs are supervisor case support, supervisor emotional support, and camaraderie with their coworkers.

B2: Promoting Bonding. Case managers stated they believed supervisors were responsible for promoting camaraderie among their staff and that this was a key component of supervisor emotional support. Thus, as supervisor emotional support increases, coworker bonding increases. Coworker bonding increases camaraderie, which decreases frustration. As frustration decreases, the rate of turnover slows and the gap between actual and needed case managers narrows.

B3: Relieving Frustration. Supervisor emotional support also has a direct effect on frustration because supervisors may provide other types of emotional support, such as individual emotional support. **B3 Relieving Frustration** operates similarly to **B2 Promoting Bonding**: as supervisor emotional support increases, frustration decreases, the rate of turnover slows, narrowing the gap between actual and needed case managers.

B4: Building Experience. This balancing loop illustrates how supervisor case support, also reported by stakeholders to be a retention strategy, narrows the gap between actual and needed case managers. As case support increases, experience increases. As experience increases, self-efficacy, or one's belief in their ability to complete a task, increases, which decreases frustration and slows the turnover rate. Stakeholders revealed that the need for case support is greatest when case managers are new and that the need declines over time. One of the benefits of providing adequate case support early in a case manager's career is that as their need for case support

declines, supervisor time is freed up to focus on other tasks such as personal development and implementing evidence-based practices.

Reinforcing Loops: Virtuous or Vicious Cycles

R1: Camaraderie. R1 is a reinforcing loop that can work as a virtuous or vicious cycle. As a virtuous cycle, the loop shows that as turnover decreases, coworkers have more opportunities to bond. In interviews, case managers discussed the negative effect that even one coworker leaving can have on group morale. Additionally, a revolving door of new case managers joining the group and then leaving their jobs shortly thereafter means the group doesn't have ample opportunity to build camaraderie. As coworker bonding increases, camaraderie also increases, frustration decreases, and coworker bonding increases, forming the virtuous cycle. The opposite can also happen: as turnover increases, coworker bonding decreases, camaraderie decreases, frustration increases, and the turnover rate is sped up. Here we have a vicious cycle.

R2: Avoiding Crises. Another benefit of providing adequate case support early in a case manager's career is decreased crises. Stakeholder interviews revealed that inexperienced case managers who don't receive proper guidance are a main source of "crises," or negative situation that must be dealt with immediately. Operating in this type of crisis-, or fire-fighting mode, eats up large amounts of supervisor time. Thus, as supervisor case support increases, experience increases, crises decrease, and supervisors have more time to focus on retention, which slows the rate of turnover and narrows the gap between actual and needed caseworkers.

R3. Reinvestment. The final reinforcing loop adds the link between pressure to spend time on hiring and time spent on retention. As pressure to spend time on hiring increases, time spent on retention decreases. Conversely, as pressure to spend time on hiring decreases, time spent on retention increases. This reinforcing loop was named reinvestment because it causes similar

dynamics to the reinvestment loop in Repenning's and Sterman's (2001; 2002) capability trap model and represents a reinvestment in focusing on hiring or focusing on retention. Interesting, the addition of this single link with a negative polarity determines the dynamics of all of the other loops in the model. If the focus on hiring increases, which in turn decreases the focus on retention, all of the balancing loops described above become vicious reinforcing cycles of decreasing supervisor emotional support, decreasing supervisor case support, decreasing camaraderie, decreasing experience, decreasing self-efficacy, and increasing crises, all of which increases turnover. However, if the focus in on retention, virtuous reinforcing processes are created. Supervisor emotional and case support increase, camaraderie, experience, and self efficacy all increase while crises decrease, ultimately reducing turnover.

Exogenous Variables. There are two exogenous variables in the CLD: needed case managers and bureaucracy. Needed case managers is determined by the number of cases and the caseload standard. In the current study, the caseloads remained constant, so this variable is treated as a parameter, or constant, variable. Bureaucracy was another variable that emerged frequently in stakeholder interviews and the GMB workshops. Bureaucracy manifested as things such as reporting requirements, redundant documentation, and the computer system used for documenting cases, which are all exogenous to the current system because they are determined by the state public CW agency. Another form of bureaucracy, which caused significant frustration and was outside the control of the consortium, was dealing with the rules, processes, and actors in the family court system.

Figure 5.1 Dynamic Hypothesis: Causal Loop Diagram Hypothesized to
Cause the Behavior in the Reference Mode

Causal Loop Diagram
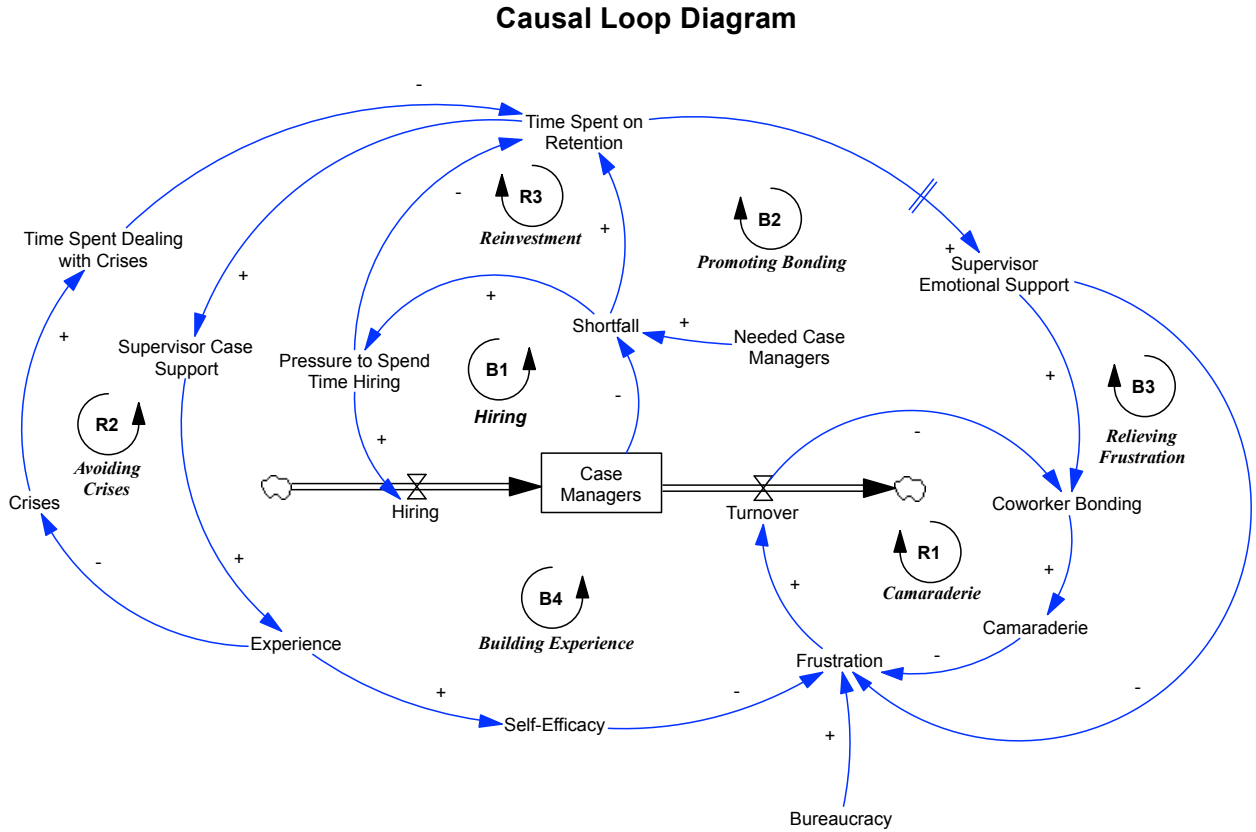
Reference Mode for Foster Care Caseworker Turnover
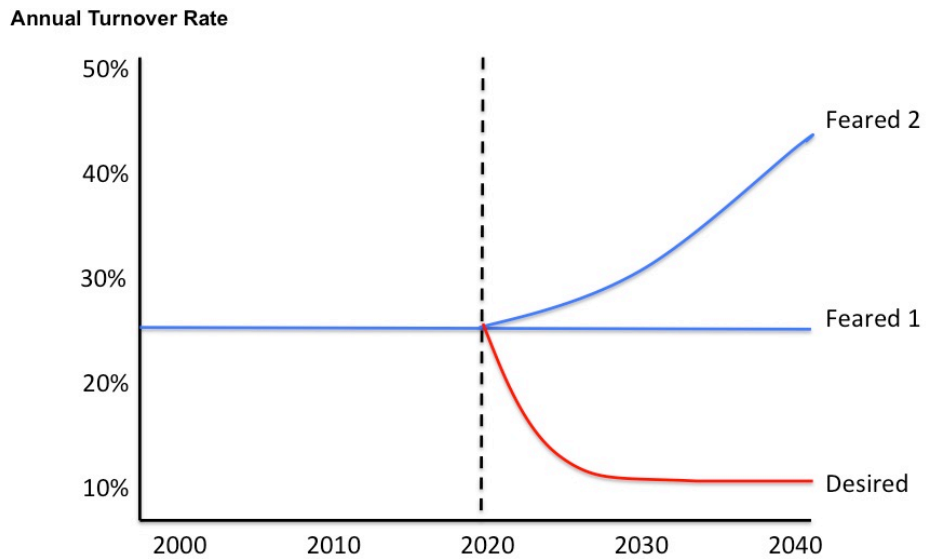
5.4 Summary of Qualitative Results

Without hesitation, stakeholders reported turnover to be a very significant problem in foster care casework. Aside from the ways it ripples through the system in an undesirable way, turnover is very costly. The consortium CEO described the exorbitant expense of replacing and training case managers that left their jobs. Furthermore, turnover impacts the morale of individual case managers as well as the group of case managers working together in a unit. From the stakeholder perspective, turnover is a core problem.

McBeath and colleagues' (2014) framework for future research on the organizational and institutional context of CW work was used to guide the design of this dissertation. Several concepts from the framework emerged in stakeholder interviews. For example, stakeholders discussed *management expertise and leadership,* particularly with regard to supervisors' abilities or lack of abilities to provide emotional support and promote camaraderie. Another staff characteristic that emerged was technical uncertainty. Stakeholders discussed how inexperienced case managers without *technical expertise* to carry out their work caused crises and delayed permanency.

Human capital is the tacit and formal knowledge that employees gain through education, training, and on-the-job experience (Kacmar, Andrews, Van Rooy, Steilberg, & Cerrone 2006; Strober, 1990; Williams & Glisson, 2013). Human capital theory appears frequently in the strategic management literature as an organizational resource that accumulates over time and contributes to performance (Shaw el al., 2013). Concepts from human capital theory consistently emerged during interviews and GMB workshops. Specifically, stakeholders described what happens when new case managers do not get the education and training they need to do their jobs effectively. In the study sample, case managers who reported receiving this type of support from

supervisors had been retained by the consortium, while those that did not reportedly made repeated errors that required precious supervisor time to correct.

Organizational social capital is the assets embedded in the organization's social relationships. These relationships facilitate the work done by the organization. Effective communication, trust, and knowledge sharing are all important components of organizational social capital (Leana & Van Buren, 1999). Organizational social capital also facilitates transactive memory, a type of collective memory belonging to the group, which reduces cognitive load and gives the group more total information (Wegner, 1987). The accumulation and depletion of social capital, which the stakeholders designated *camaraderie,* was one of the most prominent themes in the interview data. Stakeholders reported that when the workforce was stable, with low turnover, camaraderie was able to grow. Conversely, even one person leaving the group, especially if that person was considered a "best friend," could significantly erode camaraderie.

The Resource-based View of the firm theorizes that organizational performance is determined by how well resources are managed. Human capital, social capital and even camaraderie could be viewed as resources. Case managers are a tangible resource. Though organizational performance is outside the boundaries of the qualitative and simulation models in this dissertation, qualitative data from interviews and GMB workshops described scenarios where tangible and intangible resources were not well managed. It should be noted, however, that in one unit in the consortium, the unit supervisor was much more successful at managing these resources, and that unit had significantly lower turnover rates than the other units, allowing it to leverage its human capital and social capital.

5.5 Breaking out of the Turnover Trap

The turnover trap theory discussed previously describes a scenario where an organization focuses on hiring at the expense of focusing on retention. In this scenario, supervisors and case managers are constantly working in crisis mode and there is little time to focus on retention, which only leads to further turnover. Like Repenning's and Sterman's capability trap theory, the turnover trap is likely very difficult to break out of. Repenning and Sterman (2001) suggest the only way to break out of a capability trap is to shift mental models about the system. These authors provide a quotation from one of the managers in the manufacturing plant where their study was conducted (p. 82):

> "There are two theories. One says, 'there's a problem, let's fix it.' The other says 'we have a problem, someone is screwing up, let's go beat them up.' To make improvement, we could no longer embrace the second theory, we had to use the first.

As mentioned earlier, there was one unit in the consortium of agencies that experienced turnover rates near zero percent. All of the case managers from this unit praised their supervisor. During his interview, he discussed the process he used to break out of the turnover trap.

When this particular stakeholder first became a supervisor, he noticed high turnover rates throughout the consortium. He began doing internet searches on leadership and retention, not within the field of social work, but in situations he was familiar with, such as being a captain of a sports team or president of his fraternity. This led to more research on why "athletic teams, police offices, fraternities are so tight…because that's a bond for life and you don't want to leave that bond. Really what it all boils down to is family." The supervisor then went on to describe how he began to encourage the staff to eat together and that now two thirds of the staff eat

together on any given day. "It's a time to come in—and nobody's ever forced to talk—but if you've got stuff and you want to lay it out, we try to have a family-type vibe," he explained. "It's a table where you come, and if you're not in a good mood, they're going to call you on it and they're going to do everything they can to make you in a good mood. And your obligation is if they're in a bad mood, you have to do the same thing." The supervisor went on to describe other strategies he used, such as having barbeques at his home and standing up for case managers when conflicts arose with the family courts. All of these strategies are low cost and because the turnover rates in this unit were so low, they were able to reinvest time that would normally be spent hiring, training, and putting out fires on other more productive activities.

Conclusion

Chapter 5 discussed the results from the qualitative portion of the study. The emergent themes from stakeholder interviews and the dynamic hypothesis were presented. The working theory of the feedback structure producing the behavior in the reference mode, called the turnover trap, was illustrated as a CLD. The qualitative results were discussed in terms of past literature and theory. Finally, the strategy one supervisor used to break out of the turnover trap is described.

Chapter 6

The Simulation Model

The previous chapter reviewed the qualitative findings from this dissertation. The themes that emerged from interview data were used to create a seed structure for the GMB workshops. Those workshops produced two CLDs, which were integrated and then adapted into a final CLD for use in the reference mode. The next step was to reformulate that CLD into a formal simulation model. Chapter 6 describes that model.

6.1 Model Structure

The following section describes the simulation model in detail, in terms of the feedback structure and its underlying equations. The model consists of stocks, which accumulate and drain according to their flows, and auxiliary variables that affect the rate of the flows. The structure consists of four stocks: case managers, case manager experience, case manager quality experience, and trust. This section presents the model in three separate sections for the ease of viewing, but all three are connected in the same model.

6.1.1 Co-flow Structure

The backbone of the model is a co-flow structure, a generic structure used in system dynamics modeling to capture the attributes of quantities as they move through a system (Hu & Keller, 2009; Sterman 2000). The fundamental, or primary, stock is *case managers* and the attributes tracked in the co-flow are *case manager experience*, *quality experience*, and *frustration*. As *case managers* move through the system, they take these attributes with them. For example, when they leave their jobs, they take their experience and frustration with them.

When considering attribute stocks, it is important to note that the stocks represent an aggregate amount. For example, the stock of *frustration* equals all of the frustration of all of the case managers combined. Co-flow structures also keep track of the average level of each attribute; that is the average per person, through an auxiliary variable. Figure 6.1 depicts the portion of the co-flow structure that shows case managers and experience moving through the system together.

Figure 6.1 Co-flow Structure with *Case Managers* and the Attribute *Case Manager Experience*
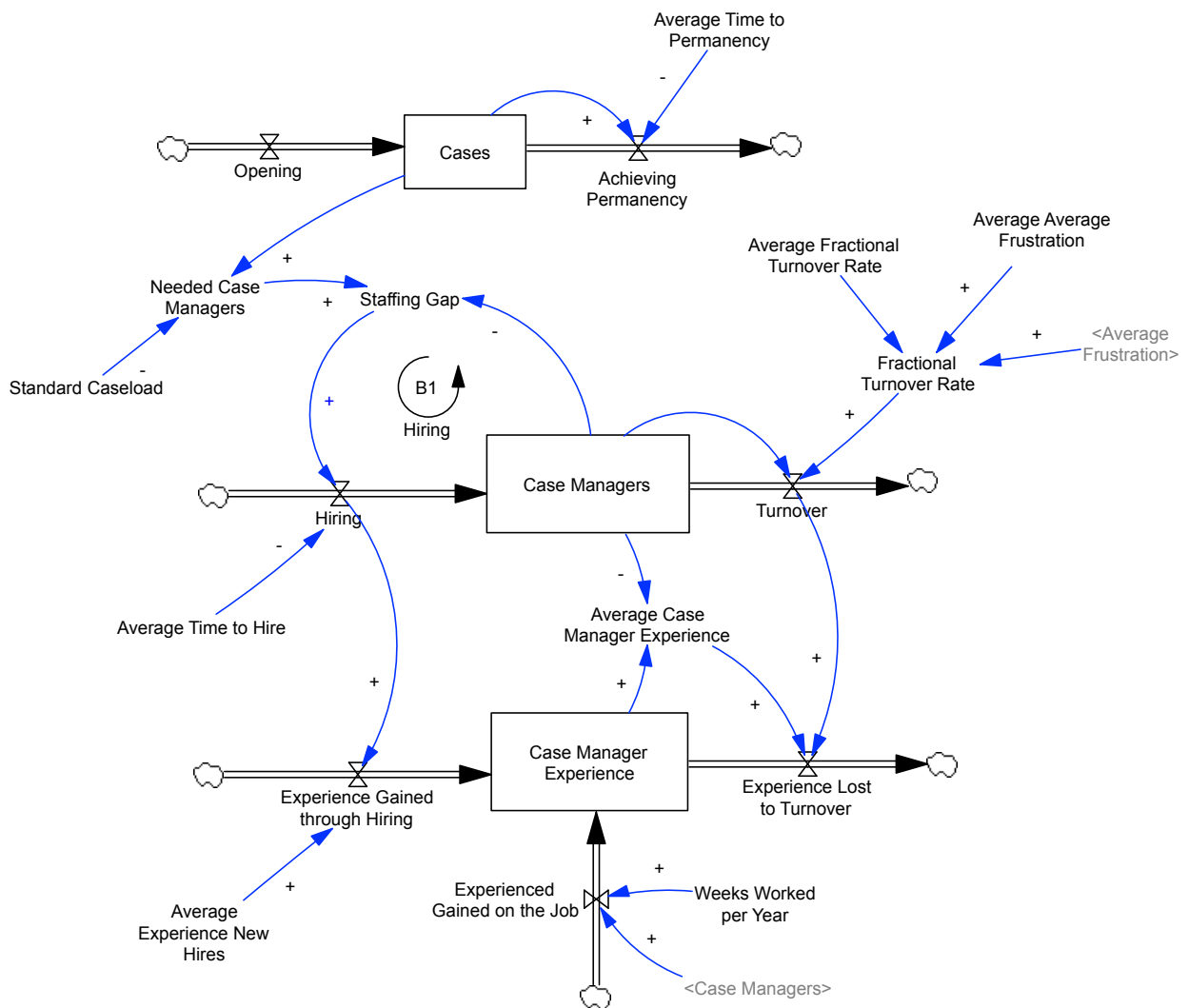
In this structure, the stock of *case managers* accumulates through *hiring* and depletes through *turnover*. The hiring rate is determined by two variables: the *staffing gap* and the *average time* it takes to hire a case manager. The *staffing gap* is equal to the number of *case managers* needed to meet the consortium's *caseload standard* minus the number of case managers in the case manager stock. If a gap exists, supervisors take corrective action by hiring more case managers to narrow the gap, which speeds up the hiring rate. If the hiring rate is faster than the turnover rate (people are hired faster than people are leaving), the stock will accumulate. If the turnover rate is faster than the hiring rate, the stock will drain.

In this model, the *caseload standard* was determined by consortium policy and is a constant. The number of *cases* flowing in each year is determined by the consortium's contract, and so this flow moves at a constant rate of 495 cases per year. The *caseload standard* is 15 *cases* per *case manager*. The initial number of *case managers* is 33 and the annual *fractional turnover rate* is 25%. These parameters and initial values were consistent with the real-world conditions at the study site at the time of the study. Stakeholder interviews revealed the *average time to hire* a case manager was one month.

The stock of *case managers* drains through *turnover*. According to stakeholder interviews and the GMB workshops, *frustration* was the main cause of turnover. *Frustration* is modeled here as an additional attribute stock—it is an attribute of *case mangers* and moves through the system with them. The dynamics of how *frustration* is built and eased are described in more detail in a subsequent section. However, *frustration* connects to this view by feeding back into the rate that drains the stock of *case managers*. *Frustration*, like the other soft variables in the model (*camaraderie, supervisor emotional support*) was assigned an index ranging from one to 10, and can be thought of as the level of frustration compared to the maximum level of

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frustration. When frustration is at its lowest, frustration units are equal to one, or 10% frustration. When frustration is at its maximum level, or 100%, frustration units are equal to 10. The *turnover rate* is determined by the number of *case managers* in the stock multiplied by the *fractional turnover rate*, where *turnover rate* refers to the actual number of *case managers* leaving per year and *fractional turnover rate* refers to the number of *case managers* per *total case managers* leaving per year (thus, it is the fractional turnover that is depicted in the reference mode). The fractional turnover rate is determined by the current *average level of frustration*. The equation for the stock of case managers is:

$$Case\ Managers_t = \int_{t0}^{t} [Hiring - Turnover]ds + Case\ Managers(t0)$$

The stock *case manager experience* is an attribute flowing through this system along with the stock of *case managers*. The stock of *case manager experience* increases through the flows *experience gained through hiring* and *experience gained on the job*. Stakeholder interviews indicated the *average experience* of new hires was zero years. Thus, *case manager experience gained through hiring* did not impact the level of *case manager experience* in the stock. *Experience gained on the job* was conceptualized as weeks worked per year (Sterman, 2000). The stock of *case manager experience* drains through the flow *experience lost to turnover*. The stock of case manager experience integrates its flows by:

$$Case\ Manager\ Experience_t = \int_{t0}^{t} [Case\ Manager\ Experience\ Gained\ on\ the\ Job -$$
$$Case\ Manager\ Experience\ Lost\ to\ Turnover]ds + Case\ Managers(t0)$$

The variable *average experience* keeps track of the average experience per individual case manager. There were no data from the study site on the average tenure of case managers. The literature widely reports that the average tenure for CW caseworkers is less than two years, so the initial value for *case manager experience* was calculated by multiplying the number of case managers by 1.75 years. Average experience is equal to *Case Manager Experience/Case Managers*. The parameters, initial conditions, rate equations, and units for this portion of the structure are presented in Table 6.1.

Figure 6.2 shows the results of simulations where the fractional turnover rate was set to 10%, 25%, 50%, and 90% for the outcome variables *average case manager experience* and *quality experience*. All other variables remained at their initial values. The simulation shows that at turnover rates of less than 50%, experience and quality experience both grow, but case managers will always have fewer average quality experience weeks compared to total weeks. According to the simulation, if an agency were able to maintain an annual turnover rate of 10%, after 10 years, case managers will have been on the job for an average of seven years.

Figure 6.2 Simulation Results Showing Average Case Manager Experience and Quality
Experience by Turnover Rate

Average Case Manager Experience

Average Quality Experience
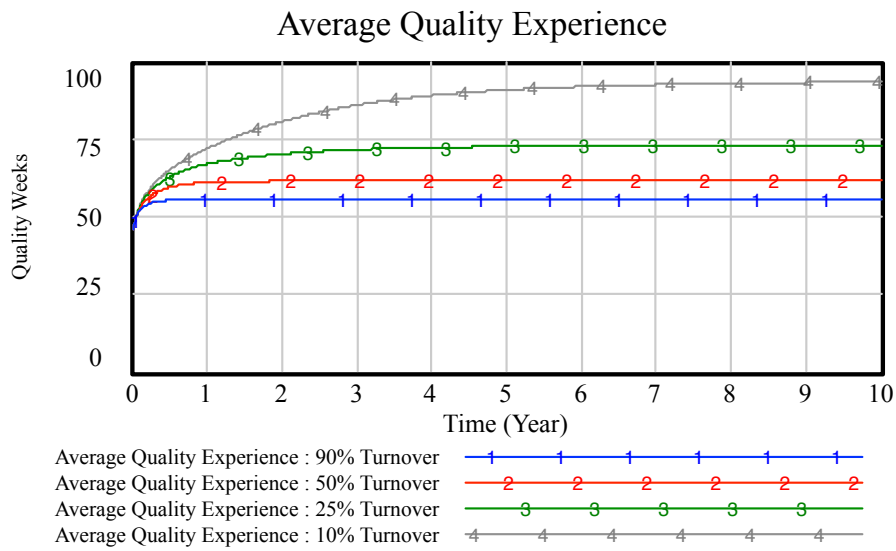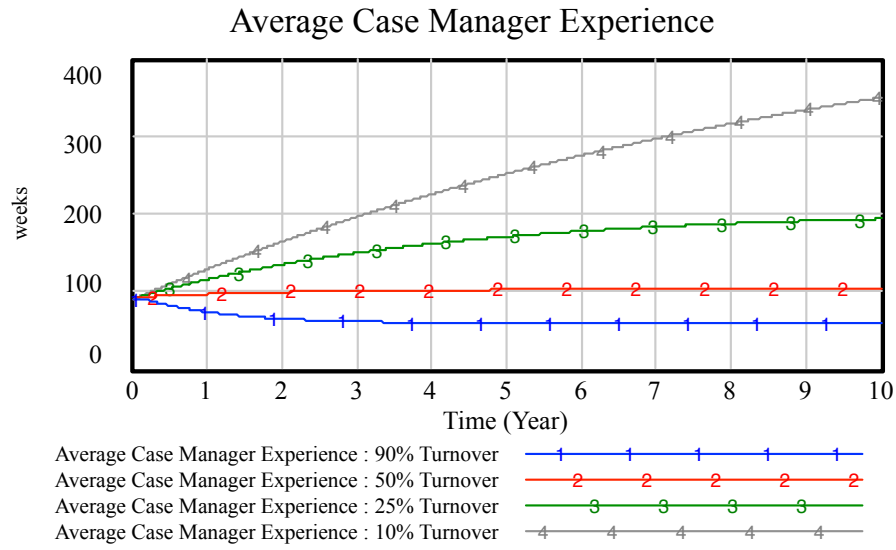
Table 6.1 Parameters, Initial Conditions, Equations and Units for
Section 6.1.1 Co-Flow Structure

Equation	Units
Initial Case Managers= 33	People
Initial Case Manager Experience=2887	People*Weeks
Standard Caseload=15	Cases/People
Average Time to Permanency=1.3	Year
Opening=495	Cases/Year
Average Time to Hire=.08	Year
Average Fractional Turnover Rate=0.25	1/Year
Weeks Worked per Year=50	Weeks/Year
Average Experience New Hires=0	Weeks
Achieving Permanency=Cases/Average Time to Permanency	Cases/Year
Hiring=Staffing Gap/Average Time to Hire	People/Year
Staffing Gap=Needed Case Managers-Case Managers	People
Needed Case Managers=Cases/Standard Caseload	People
Turnover=Case Managers*Fractional Turnover Rate	People/Year
Fractional Turnover Rate=Average Frustration/Average Average Frustration*Average Fractional Turnover Rate	1/Year
Average Frustration=Frustration/Case Managers	Frustration Units/People
Average Average Frustration=7	Frustration Units/People
Experience Gained on the Job=Weeks Worker per Year*Case Managers	People*weeks/Year
Experience Lost through Turnover=Average Experience*Turnover	People*weeks/Year
Average Case Manager Experience=Case Manager Experience/Case Managers	Weeks

6.1.2 Quality Experience

A common narrative in the stakeholder data was that newly hired case managers require a disproportionate amount of *case support* from supervisors. Structure assessment tests revealed that capturing *case manager experience* in terms of weeks worked per year did not paint a full picture of how much "true," or quality, experience a case manager has. For example, if a new case manager has not received the amount of case support they need from their supervisor, they haven't really acquired *quality experience*. To correct this error in the model, an additional attribute called *quality experience* was added to the co-flow structure. While the stock *case manager experience* keeps track of the total number of weeks case managers have worked, the stock *quality experience* keeps track of the total number of *quality* weeks worked. The formula for the *quality experience* stock is:

$$Quality\ Experience = \int_{t0}^{t}[Building\ Quality\ Experience\ on\ the\ Job -$$
$$Losing\ Quality\ Experience\ Lost\ to\ Turnover]\ ds + Case\ Managers(t0)$$

Figure 6.3 The Attribute *Quality Experience*
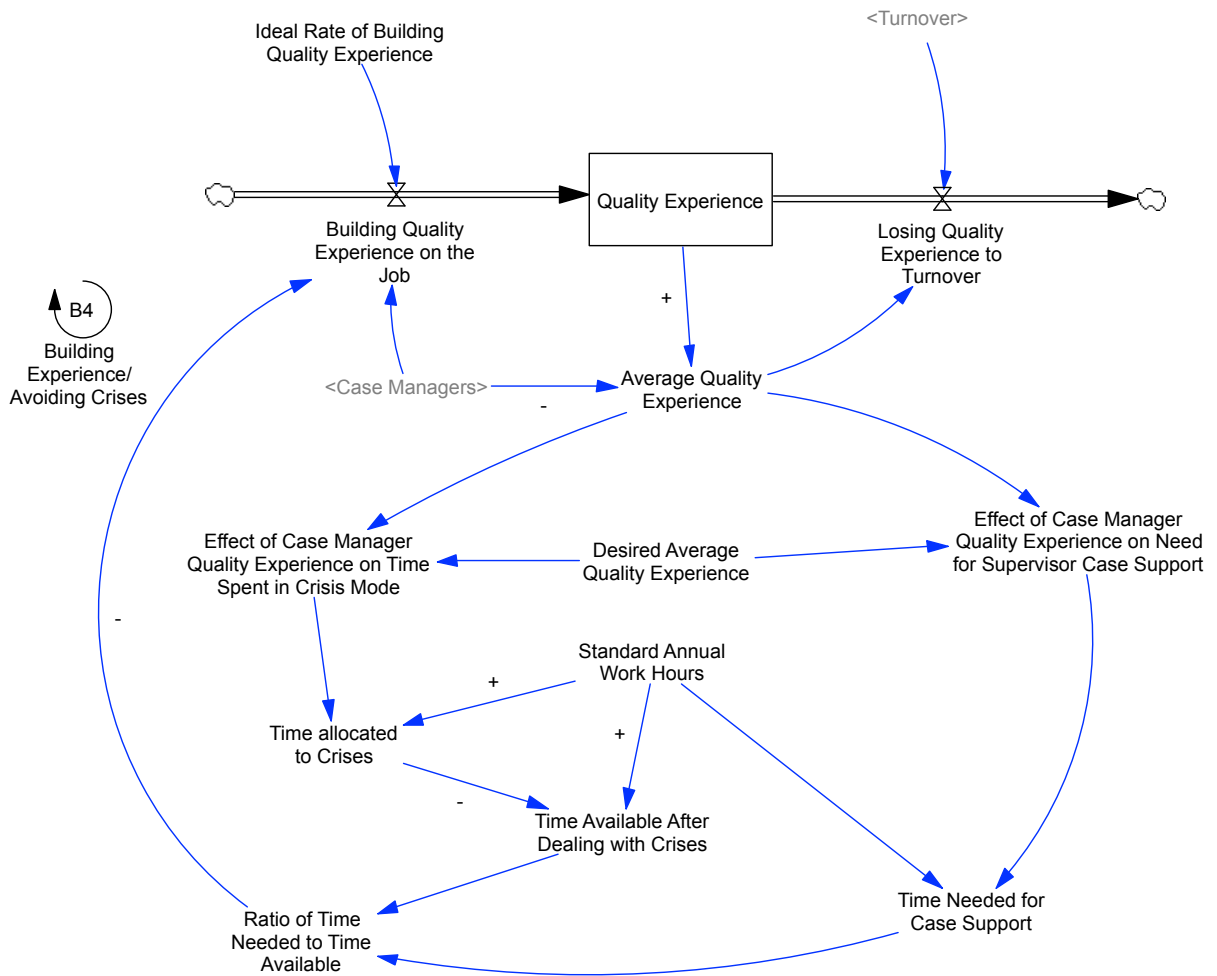
Figure 6.3 illustrates how supervisors allocate their time. Here, supervisor time is allocated to

dealing with crises and providing *supervisor case support*. It shows the dynamics that occur

when supervisors allocate time to dealing with crises at the expense of providing case support.

Stakeholders discussed the effect that case manager inexperience had on producing crises. Crises

place a demand on stakeholder time, as they are usually dealt with before anything else.

The relationship between *quality experience* and *time allocated to crises* was described by stakeholders as nonlinear and was formulated in the model as a table function, depicted in Figure 6.4. The fewer *quality experience* weeks a case manager has, the more time supervisors spend *operating in crisis mode*. After the case manager begins to gain more *quality experience*, the amount of time spent in crisis mode drops off. Similarly, stakeholders reported a nonlinear relationship between *quality experience* and the need for *supervisor case support*. This relationships was also represented by a table function, depicted in Figure 6.5.

Once these nonlinear relationships had been established and modeled as table functions, the model was able to capture how supervisors allocate their time in various scenarios. The model assumes that solving crises will always take precedent over providing case support. The time allocated to dealing with crises is a function of case manager *quality experience* and the *standard number of hours worked per year,* which was assumed to be 2000 hours (indicative of a standard work week with no overtime). The amount of *supervisor case support* time needed is also a function of case manager *quality experience* and the standard number of hours worked per year. The *ratio of time needed for supervisor case support to time available for supervisor case support* affects the flow of *quality experience* built on the job. If the ratio is .5, *quality experience* will only build at half the ideal rate. If there is a shortage of time available for *supervisor case support*, the rate of *building quality experience on the job* slows. If the turnover rate is greater than the rate *of building experience on the job*, the stock of *quality experience* will actually begin to decrease. As *quality experience* decreases, crises increase. As *quality experience* decreases, the need for *supervisor case support* also increases. This scenario forms a reinforcing loop where declining *quality experience* leads to further declining *quality experience:*

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a vicious cycle. Not only is this dynamic detrimental to the stock of *quality experience*, it also

contributes to the stock of *frustration*, which is described in the following section.

Figure 6.4 Table Function for Effect of Case Manager Quality Experience on Time Spent in a Crisis Mode

#Effect of Case Manager Quality Experience on Time Spent in Crisis Mode#
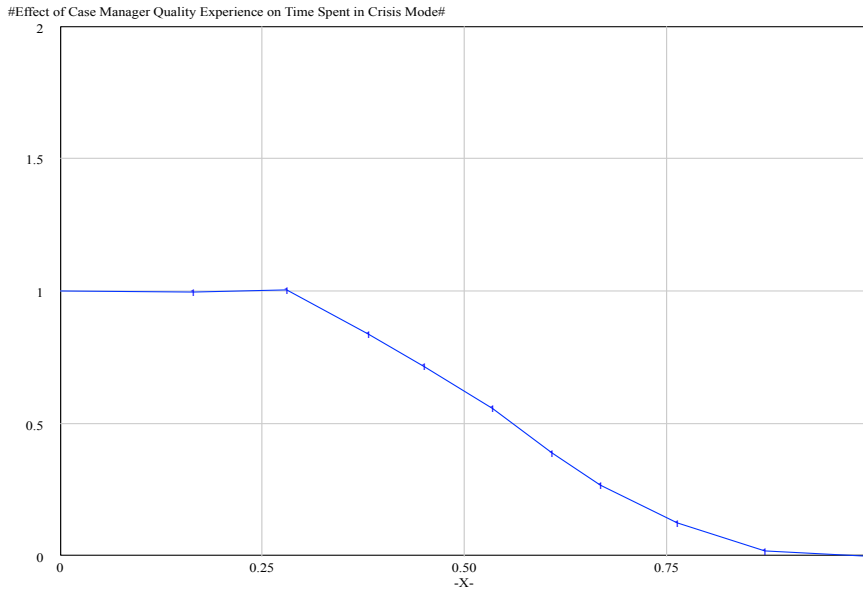
Figure 6.5 Table Function for Effect of Case Manager Experience on Need for Supervisor Case Support

#Effect of Case Manager Quality Experience on Need for Supervisor Case Support#
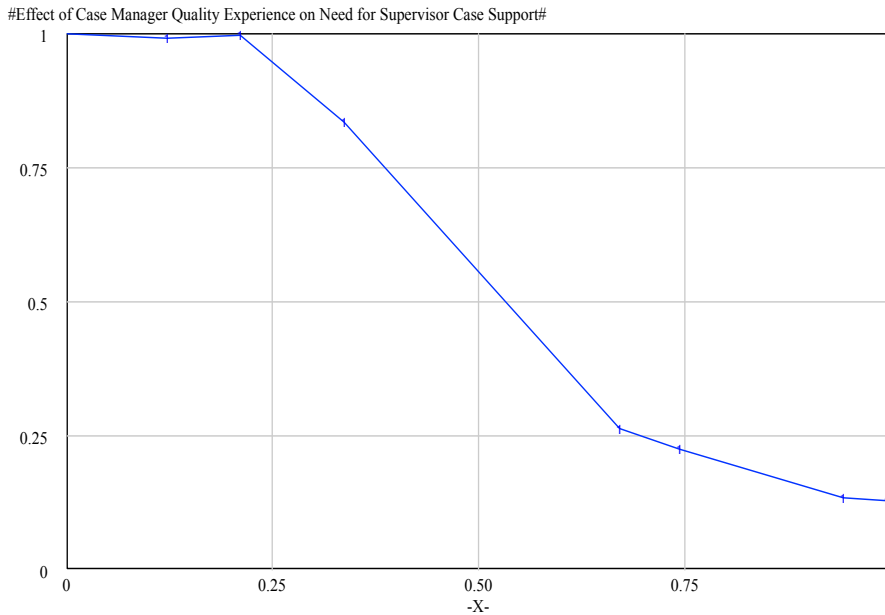
Table 6.2 lists the parameters, initial conditions, equations, and units for the supervisor time allocation structure that causes quality experience to accumulate and drain.

The following simulation outputs illustrate the effect of variables on the time supervisors spend working in a crisis mode. The simulation results in Figure 6.6 shows the affect that *turnover* has on supervisors *operating in crisis mode*. This output shows that supervisors spend a great deal of time operating in crisis mode, regardless of annual turnover rates. If the annual turnover rate is 90%, which was the case at one unit at the study site, supervisors spend more than half of their annual work hours dealing with crises. Even at 10% annual turnover, supervisors end up spending about 25% of their time dealing with crises.

Figure 6.6 Simulation Results Showing Effect of Annual Turnover Rate on Time Allocated to Crises
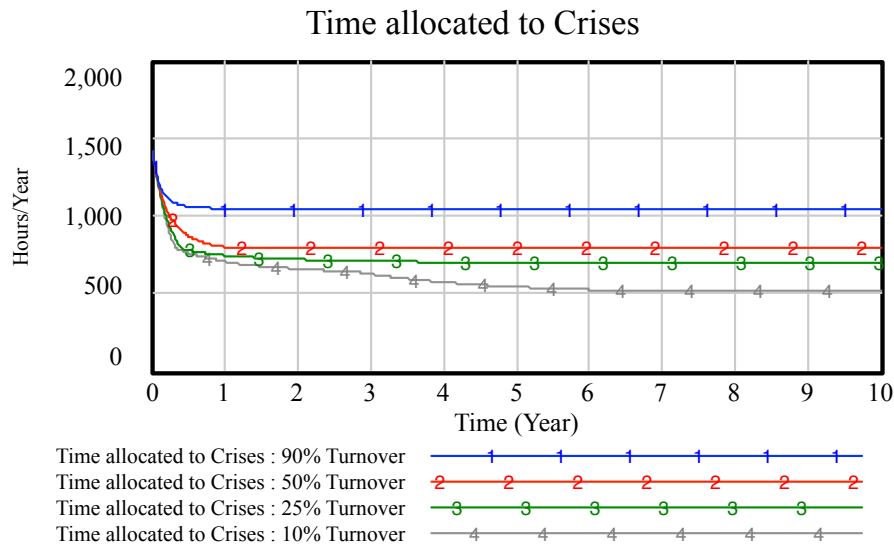
The results of this simulation are consistent with an organization that is stuck in a capability trap, which was discussed in detail in Chapter 2. When so much time is allocated to dealing with crises, it is difficult to allocate time to process improvement, or in the case of the current study, to provide the supervisor support that is needed to stabilize the workforce. Figure 6.7 shows the results of another simulation, the effect of supervisor emotional support on time allocated to crises. The results of this simulation are troubling because across very low and very high supervisor emotional support conditions, there is not much variation in the amount of time spent in crisis mode. Thus, according to the simulation, supervisor emotional support alone may not be enough to significantly decrease the amount of time supervisors spend in crisis mode.

Figure 6.7 Simulation Results Showing the Effect of Supervisor Emotional Support on Time Allocated to Crises

Time allocated to Crises
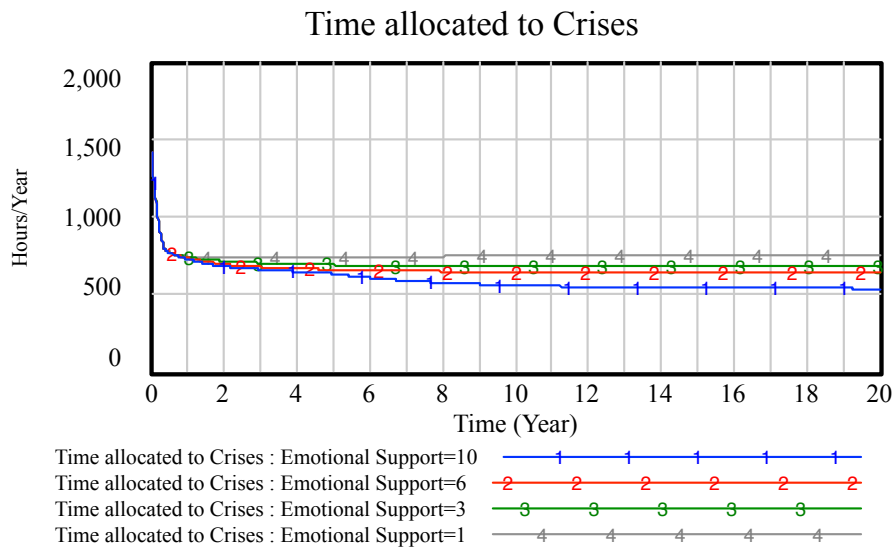
Table 6.2 Parameters, Initial Conditions, Equations, and Units for Section 6.12 Quality
Experience

Equation	Units
Ideal Rate of Building Quality Experience=50	Weeks/Year
Desired Average Quality Experience=150	Quality Weeks
Standard Annual Work Hours=2000	Weeks/Year
Building Quality Experience on the Job=Case Managers*Ideal Rate of Building Quality Experience*Ratio of Time Needed to	Quality Weeks*People/Year
Losing Quality Experience to Turnover=Turnover*Average Quality Experience	Quality Weeks*People/Year
Average Quality Experience=Quality Experience/Case Managers	Quality Weeks
Effect of Case Manager Quality Experience on Need for Supervisor Case Support = WITH LOOKUP\(Average Quality Experience/Desired Average Quality Experience)	DMNL
Effect of Case Manager Quality Experience on Time Spent in Crisis Mode = WITH LOOKUP \(Average Quality Experience/Desired Average Quality Experience)	DMNL
Time allocated to Crises=Standard Annual Work Hours*Effect of Case Manager Quality Experience on Time Spent in Crisis Mode	Hours/Year
Time Needed for Case Support=Standard Annual Work Hours*Effect of Case Manager Quality Experience on Need for Supervisor Case Support	Hours/Year
Time Available After Dealing with Crises=Standard Annual Work Hours-Time allocated to Crises	Hours/Year
Ratio of Time Needed to Time Available=Time Needed for Case Support/Time Available After Dealing with Crises	DMNL

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6.1.3 Frustration

Figure 6.8 The Attribute *Frustration*
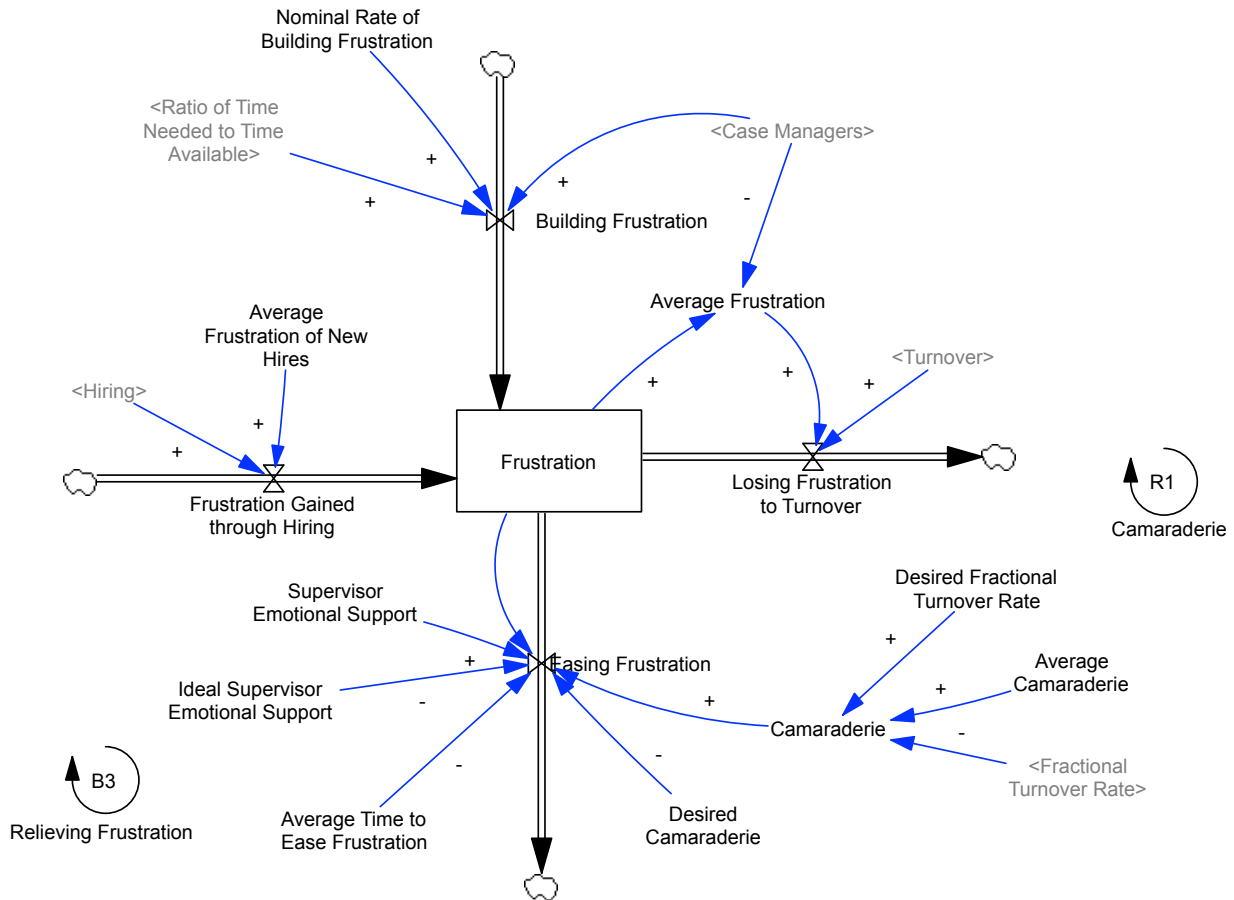
The final attribute modeled in the co-flow structure is *frustration*, which consistently

emerged in stakeholder interviews as the main cause of *turnover (*see Figure 6.8*)*. Stakeholders

discussed numerous causes of frustration, and these causes are modeled as auxiliary variables

affecting the rates at which *frustration* builds and is eased. The stock of *frustration* accumulates

through two flows, *building frustration* and *frustration gained through hiring*. Frustration units

range from one to 10 per person, so the stock tracks the total number of frustration units for all

case managers. The model assumes that when case managers are hired, their level of frustration

is low, so the *average frustration of new hires* was set to one frustration unit per person. The rate

of *gaining frustration* through *hiring* is the hiring rate multiplied by the *average frustration of

new hires.* The stock of *frustration* can also be drained through *turnover*. The formulation for

this rate is the *average frustration* per case manager multiplied by the *turnover* rate. The integral

equation for the stock of frustration is:

$$Fruatration =$$

$$\int_{t0}^{t} [Building\ Frustration + Frustration\ Gained\ through\ Hiring -$$

$$Losing\ Quality\ Experience\ Lost\ to\ Turnover - Easing\ Frustration]\ ds +$$

$$Case\ Managers(t0)$$

The rates of *building and easing frustration* while case managers are on the job are a bit

more complex and are determined by a number of interconnected variables. The rate of *building

frustration* is determined by whether case managers receive an adequate amount of *supervisor

case support*, represented by the *ratio of time needed to time available* that was formulated in the

Quality Experience view. If the ratio is .5, they will build frustration at half the maximum rate.

The rate of *easing frustration* is determined by the level of *camaraderie* compared to the *desired

level of camaraderie. Camaraderie* is an organization level variable ranging from one to 10. The

level of *camaraderie* is determined by *the fractional turnover rate,* since case managers

discussed the detrimental effect of *turnover* on *camaraderie*. The rate of *easing frustration* is

also determined by the level of *supervisor emotional support,* which ranges from one to 10,

compared to the *ideal level of supervisor emotional support*. Supervisor emotional support was

treated as an exogenous variable because in the qualitative data it was described more as a skill than as a function of time, or a condition determined by other variables in the model. Because stakeholders appeared to be more frustrated that what would be a midpoint level of frustration (or 5), the model assumes the *nominal rate of building frustration* is six frustration units per person per year. The model also assumes it takes .75 years to ease *frustration*. All parameters, initial conditions, rate equations, and units can be found in Table 6.3.

Simulations were run to determine how *supervisor emotional support* and *average camaraderie* contribute to the accumulation and draining of *frustration*. Figure 6.9 shows that when *supervisor emotional support* is near its lowest point, *frustration* will be near the maximum of 10 frustration units and that this trend will be maintained over time. When *supervisor emotional support* is at its highest—10 support units—*average frustration* will be relatively low, at about three frustration units per person. It can be inferred from this simulation that *supervisor emotional support* is an important variable in the dynamics of *frustration* and should be considered when developing an intervention to reduce turnover.

Figure 6.9 Simulation Results Showing the Effect of Emotional Support
on Average Frustration

Average Frustration

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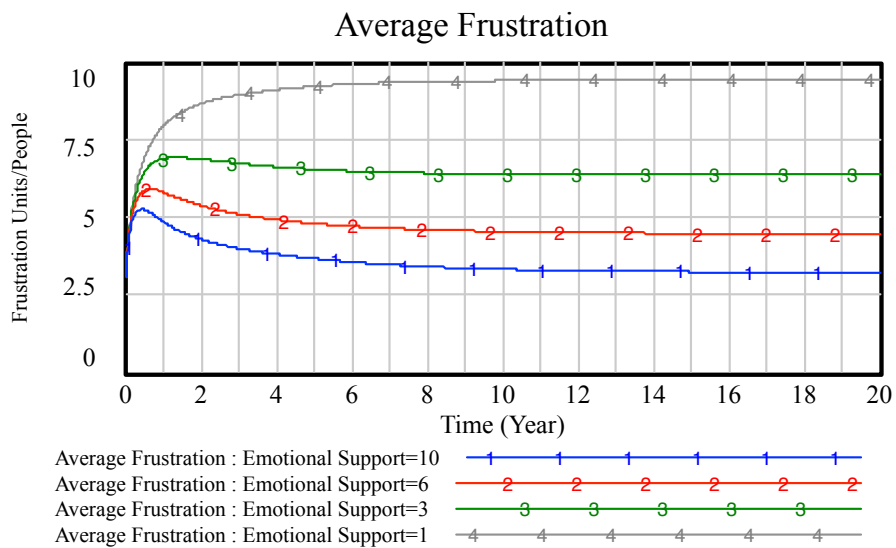
Figure 6.10 Simulation Results Showing The Effect of Average
Camaraderie on Average Frustration

Average Frustration
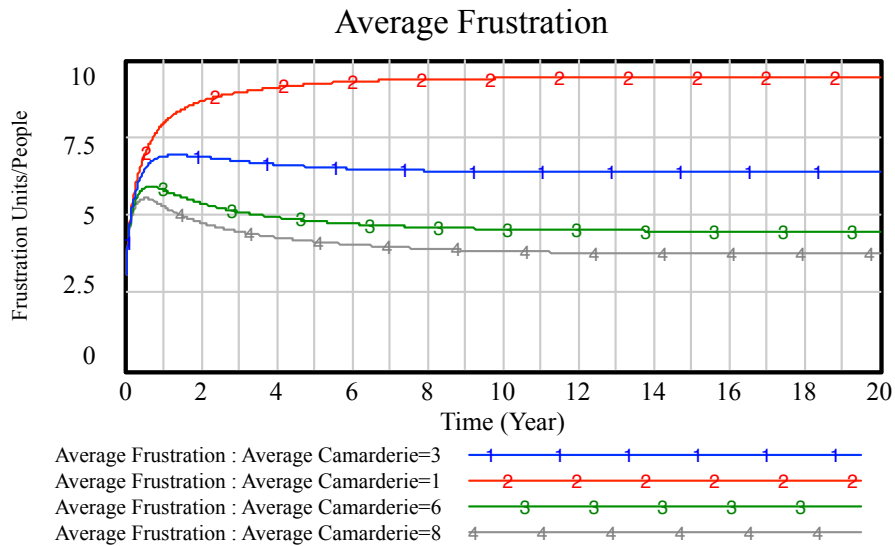
Figure 6.10 shows the simulation results for the effect of *average camaraderie* on

average frustration. The results of the simulation show a pattern very similar to the pattern

described above (the effect of *supervisor emotional support* on *frustration*). When *camaraderie*

is very low, *frustration* will be very high, and these effects will sustain over time. When

camaraderie is high, *average frustration* will be low, but the effect is not quite as strong as the

effect that *supervisor emotional support* has on average frustration.

Table 6.3 Parameters, Initial Conditions, Equations, and Units for Section 6.1.3 Frustration

Equation	Units
Average Frustration of New Hires=1	Frustration Units/People
Average Time to Ease Frustration=1	Year
Ideal Supervisor Emotional Support=10	Support Units
Supervisor Emotional Support=3	
Nominal Rate of Building Frustration=6	Frustration Units/Year/People
Desired Camaraderie=8	Camaraderie Units
Desired Fractional Turnover Rate=0.1	1/Year
Losing Frustration to Turnover=Average Frustration*Turnover	Frustration Units/Year
Frustration Gained through Hiring=Average Frustration of New Hires*Hiring	Frustration Units/Year
Building Frustration=Case Managers*Nominal Rate of Building Frustration*Ratio of Time Needed to Time Available	Frustration Units/Year
Camaraderie=Average Camaraderie*(Fractional Turnover Rate/Desired Fractional Turnover Rate)	Camaraderie Units
Easing Frustration=Frustration*(Camaraderie/Desired Camaraderie)*(Supervisor Emotional Support/Ideal Supervisor Emotional Support\)/Average Time to Ease Frustration	Frustration Units/Year
Average Camaraderie=3	Camaraderie Units

The results of the simulations reveal three key insights:

1) Supervisor emotional support and camaraderie are both very important when it comes to reducing the average frustration levels of case managers.

2) The supervisors at the study site spend a significant amount of time dealing with crises, indicating they are likely stuck in a capability trap.

3) Turnover has a detrimental effect on case managers' tenure as well as quality experience.

6.2 Test of Dynamic Hypothesis and Confidence Building

This section discusses the results of the dissertation's second aim. First, results of the test of the dynamic hypothesis are reported, followed by the results of confidence –building tests.

Aim 2: Develop a formal simulation model and test the dynamic hypothesis developed in Aim 1 and build confidence in the model.

6.2.1 Test of the Dynamic Hypothesis

The dynamic hypothesis for this dissertation is that the feedback structure in the CLD causes the behavior in the reference mode. The behavior of concern is turnover, which is designated in the model as *fractional turnover rate*, which represents the number of case mangers per total case managers turning over per year. The fractional rate at the study site was 25%, which is depicted in the reference mode's behavior over time graph. A simulation was conducted to determine if the behavior produced by the model was consistent with the behavior in the reference mode. Comparison of the two behavior over time graphs indicated that the model did indeed produce behavior consistent to the reference mode, which can be seen in Figure 6.11. As the results show, the model produced goal-seeking behavior. The fractional turnover rate rose ever so slightly at the beginning of the simulation before reaching a near-equilibrium state very

Figure 6.11 Comparison of Simulation Behavior to Reference Mode

Reference Mode for Foster Care Caseworker Turnover
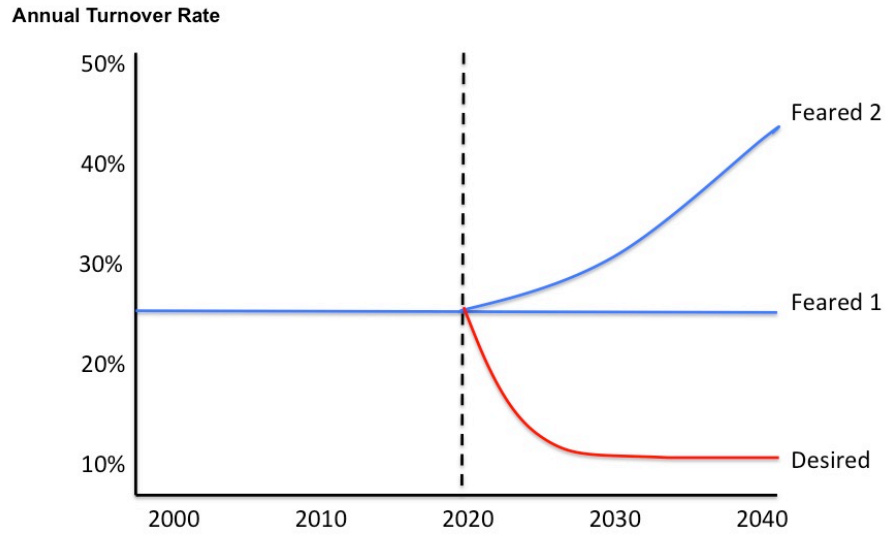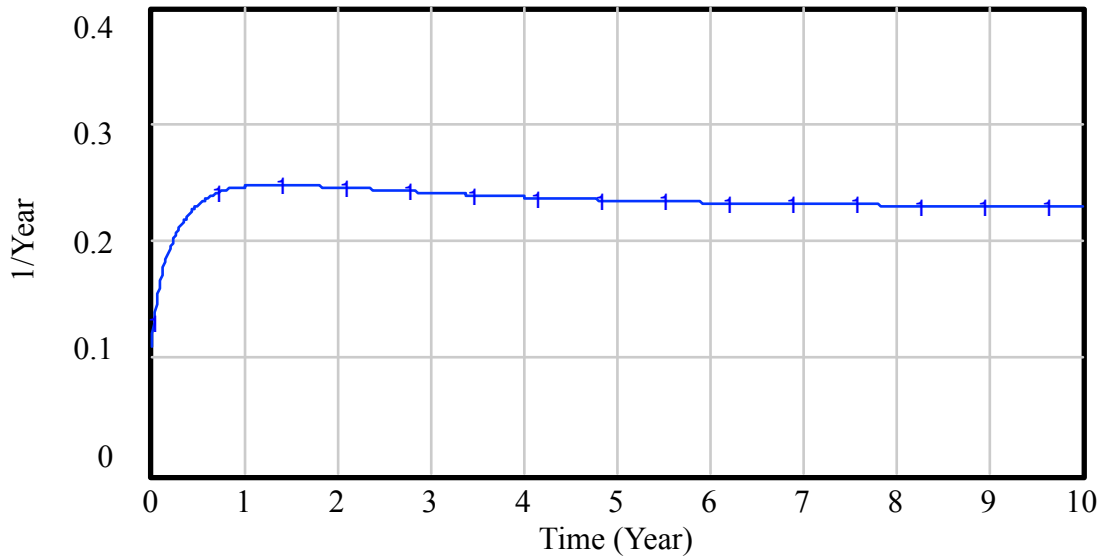
near 25% annual turnover. The simulation also shows that given current conditions, the turnover

rate will remain at 25%, or the first feared behavior depicted in the reference mode.

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6.2.2 Confidence-Building Tests

Boundary Adequacy Test

The model boundary chart depicted in Table 6.4 was cross-checked with the simulation model to ensure that all variables in the chart were included in the model. The model boundary chart was also cross-checked with coding charts from the stakeholder interview data as well as the CLDs produced in the GMB workshops. Salary was one variable that emerged during stakeholder interviews, which was excluded from the model. Although it was a cause of frustration, it was not involved in feedback processes and stakeholders did not report it to be a major cause of turnover. Similarly, bureaucracy was excluded because although it was a major source of frustration, it was not involved in feedback processes. Self-efficacy was included in the qualitative model as a cause of frustration, but excluded from the simulation model. Self-efficacy was important theoretically, but in the simulation model, the modeler was able to capture the concept directly through the link between supervisor case support and frustration.

Table 6.4 Model Boundary Chart

Endogenous	Exogenous	Excluded
Cases	Standard Caseload	Demographics
Case Managers	Average Time to Achieve Permanency	Salary
Case Manger Experience	Time to Hire a Case Manager	Self-efficacy
Quality Experience	Experience of New Hires	Family Characteristics
Frustration	Weeks Worked per Year	Bureaucracy
Camaraderie	Supervisor Emotional Support	
Fractional Turnover Rate		
Hiring		
Turnover		
Time Allocated to Crises		
Frustration		
Supervisor Case Support		

Structure Assessment Test

Structure Assessment Tests were conducted throughout the entire process of formulating the simulation model. As partial simulations of chunks of structure were performed, the structures were checked to make sure they were consistent with what is known to be true about the real world scenario the model represents. Simulations were done to make sure the model's behavior did not violate laws of nature. These processes were completed once the entire model was developed. Adjustments were made to the structure so that it was consistent with real-world conditions. For example, one adjustment that was made during structure assessment was the addition of the *quality experience* stock. Although the case manager experience stock kept track of the number of weeks case managers had worked, it did not take into account that new case managers who did not receive adequate supervisor case support may have spent a week at work, but because they did not learn the skills they needed, it was not a quality week.

6.3 Intervention Formulation and Evaluation

Section 6.3 addresses aims 3 and 4 of this dissertation, which are to determine the best places to intervene in the system and to develop and test an intervention to improve turnover.

Aim 3: Determine the best places in the system to intervene.

Aim 4: Develop and test an intervention that will effectively and sustainably improve the problem(s) identified in Aims 1

The stakeholder suggestions that emerged during the action ideas script of the GMB sessions formed the basis for intervention development. A majority of the stakeholder ideas centered on supervisor support and team building (see Table 6.5). Stakeholders indicated they

wanted more recognition from supervisors, more help from supervisors, and "fun" activities and

team-building activities, especially outside of the workplace. These suggestions were designated

by stakeholders as high impact and easy to implement.

Most of the ideas presented were not high cost items. Recognizing and acknowledging

case managers who have performed well is a cost effective and low-effort approach to decreasing

frustration. After-hours social events and team-building activities are also low cost. Therefore,

training programs for supervisors that 1) make them aware of how important it is for case

managers to be acknowledged for good performance, 2) teaches them appropriate ways to

acknowledge case managers, and 3) trains them on team-building and camaraderie-building

activities have great potential for improving performance and reducing turnover.

Table 6.5 Action Ideas

Acknowledgement of how awesome we are
Worker recognition
Goals met=fun activity (drawing of pie)
After hours social events
Positive team building activities-team goes to lunch together/fun outside activity
Team goals and identity
Budget for team building activities and appreciation
Intensify supervisor trainings
More help from supervisors
Supervisor support
More informal check-ins by supervisors
More on the job training for new hires
Supervisor involvement

Training supervisors in these domains was considered in the context of Donella

Meadow's seminal paper Leverage Points: Places to Intervene in a System (1999). In this paper,

Meadows lists 9 places to intervene in a system, from least to most effective (see Table 6.6).

Table 6.6 Places to Intervene

Constants, parameters, numbers
Regulating negative feedback Loops
Driving Positive Feedback loops
Material flows and nodes of material intersection
Information flows
The rules of the system (incentives, punishments, constraints)
The distribution of power over the rules of the system
The goals of the system
The mindset or paradigm out of which the system-its goals, power structures, rules, its culture-arises.

Creating a foster care system where case managers feel acknowledged, recognized, appreciated, and part of a team, would not only change some of the structural leverage points (i.e. constants and feedback loops), but it would also impact points of the system farther down the list in terms of effectiveness. The rules of the system would change as would the distribution of power over the rules of the system. While the pie-throwing incident discussed earlier may appear silly on the surface, it is actually a good example of how changing the incentives (the supervisor came up with a creative incentive for a job well done) and the distribution of power (case managers threw pies at the supervisor) contributed to a system with 0% turnover. In fact, the action idea that said "goals met=fun activity," which also featured a small drawing of a pie (see Figure 6.12), was the number one most effective and easy to implement action idea that emerged during the GMB workshops.

Figure 6.12 Action Idea: The Most Effective and Easy to Implement Action Idea to
Reduce Turnover
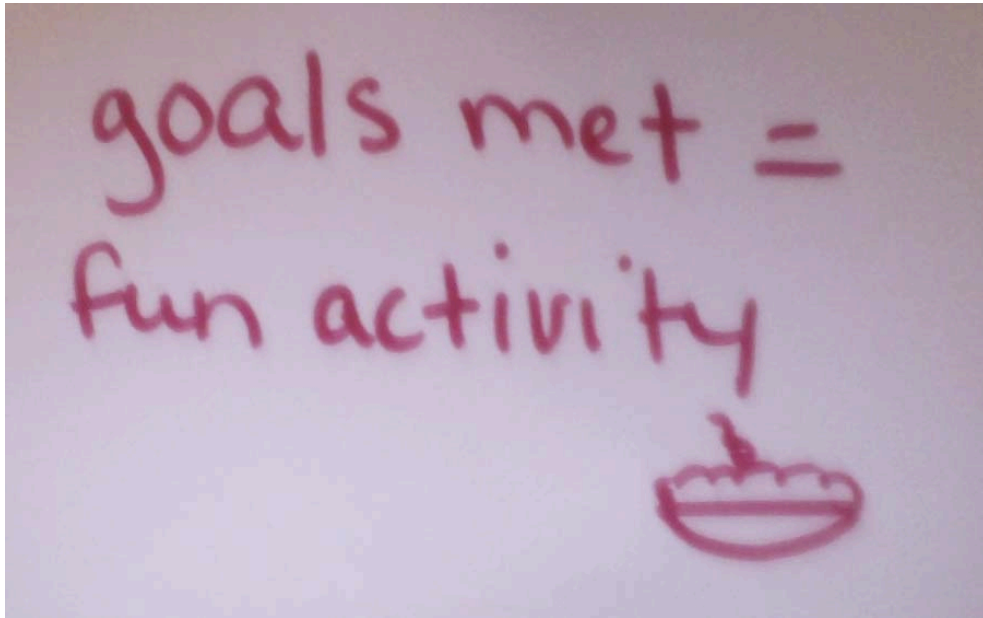
Simulations were conducted to determine whether increasing emotional support and

camaraderie would impact the system. Figure 6.12 shows that when supervisor emotional

support and camaraderie are both at their highest (emotional support=10 and camaraderie=8),

average frustration is low. At the baseline levels (emotional support=3 and camaraderie=3),

average frustration hovers around seven (out of its maximum level, 10). These results suggest

that high supervisor emotional support, when combined with high camaraderie, has the potential

to decrease average rates of frustration in case managers.

Figure 6.13 Simulation Results Showing the Effect of Supervisor Emotional Support
and Camaraderie on Average Frustration
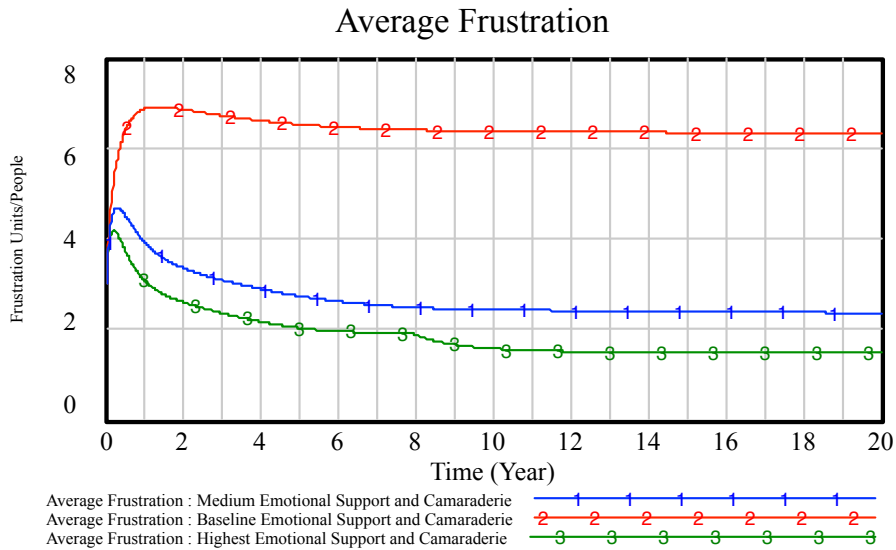
Similarly, the combination of high supervisor emotional support and high camaraderie show

potential for reducing turnover. Figure 6.13 depicts the simulation run for the outcome variable

turnover. The baseline run, which represents the current conditions at the study site (emotional

support=3, camaraderie=3) shows a fractional turnover rate of 25%, which matches the reference

mode. However, if supervisor emotional support and camaraderie are raised, turnover rates

decline. If supervisor emotional support and camaraderie can be raised to a medium level

(emotional support=6, camaraderie=6) the fractional turnover rate will decrease to just below

10%, the desired behavior shown in the reference mode.

Figure 6.14 Simulation Results Showing the Effect of Supervisor Emotional Support and Camaraderie on Annual Turnover

Fractional Turnover Rate

Fractional Turnover Rate : Medium Emotional Support and Camaraderie
Fractional Turnover Rate : Baseline Emotional Support and Camaraderie
Fractional Turnover Rate : Highest Emotional Support and Camaraderie
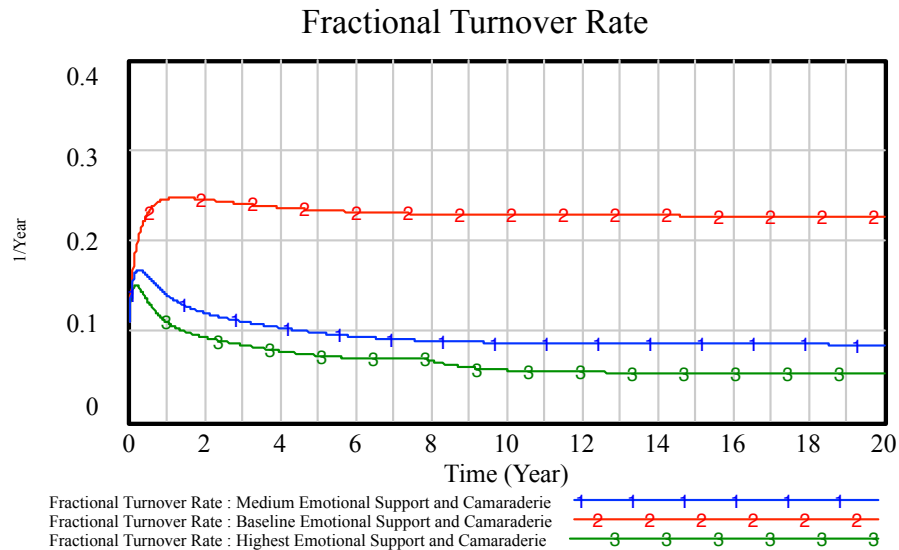
Conclusion

Chapter 6 described the simulation model in detail, including the co-flow structure, the stocks of case managers, case manager experience, quality experience, and frustration, and their flows. The parameters, initial conditions, and rate equations were also documented. Simulation showed that the model produced behavior in the reference mode. Simulations also indicated that supervisor emotional support and camaraderie were important variables in the dynamics of building and easing frustration and reducing turnover. Simulation results also showed that supervisors spend a significant amount of time operating in crisis mode, which is indicative of being stuck in a capability trap, or in this case, a turnover trap. Stakeholder data indicated that case managers believed acknowledgement and support from supervisors as well as camaraderie building activities would reduce turnover. Increasing supervisor social support and camaraderie represents a culture shift that is consistent with Meadow's conceptualizations of changing the

rules of the system and the distribution of power. The final chapter of this dissertation discusses

the significance of the study and its findings.

Chapter 7

Discussion

The final chapter of this dissertation discusses the significance of the study's results, its strengths, limitations, and implications.

7.1 Overview of results and significance

This dissertation used mixed methods to develop a theory of turnover among foster care caseworkers. Semi-structured interviews with stakeholders, GMB workshops with stakeholders, and formal system dynamics modeling were conducted to determine whether turnover was perceived to be a core problem in foster care services, and if so, how the system could be altered to sustainably reduce it.

The study's results indicated that stakeholders do indeed perceive turnover to be a core problem in foster care services. Results from simulation also show that turnover is a problem in that it limits the experience and quality experience of caseworkers and reduces camaraderie. Stakeholders expressed feeling unacknowledged and unappreciated by supervisors and felt that team building activities, especially "fun" activities outside of the workplace would reduce turnover.

Qualitative and simulation results suggest the consortium of agencies is caught in a capability trap (Repenning & Sterman, 2001; 2002). During interviews, stakeholders described a process where newly hired case managers who had not received enough supervisor case support produces crises, which then had to be dealt with by supervisors, which in turn further reduced the amount of time they had to provide support. As support decreased, so turnover increased. This

pattern is similar to that of the capability trap and was named the *turnover trap*. Results from the simulations were consistent with what stakeholders reported, as they showed supervisors spending a significant proportion of their work hours in crisis mode.

The study's results were also consistent with human capital and social capital theories and the resource-base view. In the context of a work organization, human capital theory discusses the accumulation of skills that employees gain on-the-job (Kacmar, Andrews, Van Rooy, Steilberg, & Cerrone 2006; Strober, 1990; Williams & Glisson, 2013). Here, simulation results shows how turnover, at various annual rates, slows the accumulation of case manager experience. Social capital (Dess & Shaw, 2001; Shaw, Duffy, Johnson, & Lockhart, 2005) emerged as an even more important concept, particularly in the qualitative portion of the study. Stakeholders described a process where the depletion of social capital, even if it is caused by just a single case manager leaving, can spark a vicious cycle of turnover. On the other hand, if social capital can be built up, especially in the form of camaraderie, it may serve as an effective buffer against turnover. Finally, human capital and social capital can both be thought of as resources in the resource-based view of the firm. In the context of foster care service provision, the case workers are the main resource that determines performance. Obviously, performance is important for ensuring the permanency, safety, and well-being of children. But, as the field continues to shift to more private agencies being awarded contracts to provide these services through competitive bidding processes, performance will also become more important to agencies being able to sustain themselves in a competitive environment.

7.2 Study Strengths

Mixed Methods Design

This study used a mixed methods design to gain a deep understanding about the context of turnover in foster care services, while also testing the dynamic hypothesis with precision (Rubin & Babbie, 2013). This approach has much greater explanatory value than using only qualitative methods or only quantitative methods to understand a phenomena. System dynamics is a definitive example of mixed methods research. It allows a researcher to identify patterns and meanings in stories and to conduct precise quantitative analyses of these patterns in the same study. It acknowledges and incorporates both subjective and objective points of view (Kim & Andersen, 2012). This approach allowed deep descriptions of the problem of turnover in foster care services to emerge and for hypotheses to be tested quantitatively, which ultimately provided a great deal of explanatory value regarding the problem.

Triangulation of Data

Triangulation of data refers to using more than one method, theory, and/or source to collect data on a given phenomena to improve data credibility and to gain deeper insights and broader insights or more nuanced understanding of a phenomena (Ryen, 2012; Olsen, 2019). Mixed methods research inherently uses data triangulation processes. However, triangulation of data has further benefits, including reducing bias (including researcher bias and biases stakeholder mental models) allowing a researcher to obtain convergence toward the truth or reality (Olsen, 2019). This dissertation used data from a variety of sources. Triangulating the data allowed the researcher to reduce her own biases and preconceived ideas about turnover, to

gain insight on biases in the mental models of individual participants or participant groups, and to gain a deeper and broader understanding of the problem.

Theory Development

        This dissertation adds to our overall knowledge of foster care services by contributing a theory of turnover, the *turnover trap*. Many of the published peer-reviewed CW studies do not discuss theory, so it is unclear how or whether it was used. In McBeath & Colleagues' (2014, p. 90) paper on new directions in CW organizational and institutional research, they argue that theories developed in close proximity to the practice context, particularly those that "pay close attention to what practitioners deem concrete, significant, transformative, and value-laden…that connect important processes, events, and actors across different levels of analysis" may provide a promising path for better understanding CW organizations. The turnover trap theory was developed in close proximity to practice using multiple methods to capture practitioners' mental models and explain how important processes, events, and actors are interconnected to cause turnover.

        The turnover trap theory also contributes to the stock of generic structures within system dynamics. In many ways, it is an adaptation of the capability trap model of process improvement, a generic structure first developed in the manufacturing industry (Repenning & Sterman, 2001; 2002). Although the turnover trap theory was created in the foster care context, it will likely offer utility to researchers and practitioners in other complex, under-resourced, high-turnover environments such as nursing (Chang, Lee, Chang, Lee, & Wang, 2019).

Novel Insights

        New insights regarding the assumptions we often make about turnover in CW emerged during this dissertation process. For example, a great deal of CW literature on turnover focuses

on high caseloads (Bernotavics, 1997; Dickinson & Perry, 2002; Shapiro, 1974). It is worth noting that caseload was mentioned in only one stakeholder interview and did not emerge a single time in either of the two GMB workshops. Admittedly, caseloads at the study site were on the low side, with 15 cases per case manager compared to a national average of about 20, but when the consortium hired additional case managers to reduce caseload to 12 cases per case manager, turnover significantly increased. It is well documented throughout the literature on turnover in CW that inexperienced caseworkers are the most likely to leave their jobs. The theory generated in this dissertation provides an explanation for why and how that might occur.

The quality of supervision has been identified as a key cause of caseworker turnover for decades, and the results of this study were consistent with previous findings. This study added to our knowledge about what type of supervision is needed and when. Early in their careers, caseworkers need a disproportionate amount of case support, yet they need emotional and social support throughout the duration of their careers. Case managers in the study believed building camaraderie was a key component to supervisor emotional support and saw this as a responsibility, if not the key responsibility, of the supervisory role.

Innovation

Finally, a major strength of this dissertation is its use of the feedback perspective and system dynamics, relatively new approaches in social work research. Child welfare is often cited as an example of a complex system, and in recent years researchers have argued for the use of innovative methods that can accommodate complexity and specifically for the use of system science methods (IOM, 2014; McBeath et al., 2014; Proctor, 2012). This dissertation provides an example of how future researchers might approach social work research using the feedback perspective and system dynamics.

7.3 Study Limitations

Single Case Study Design

The use of a single case study design is a limitation because of lack of replication and the inability to generalize beyond a single case (Hovmand, 2003). Semi-structured interviews and GMB workshops only captured the mental models within one consortium of private agencies providing foster care services in a Midwestern context. Additionally, because CW service provision varies by state – and in some instances by county -- it is likely that structural differences between agencies in different states would emerge and the model would have to be adapted for use elsewhere. Further, differences between service provision in public and private agencies may also require adaptations to the model.

Conversely, the single case study design used here allowed the researcher to identify deep insights and to elicit descriptions of the lived experiences of foster care caseworkers in a private agency. Rich narratives about organizational culture, including specific events that have shaped caseworkers' decisions about whether to remain employed at the agency or to leave would not have accessible through other study designs.

7.4 Implications for Organizations

Child welfare is known for being under-resourced, particularly in terms of funding. Child welfare organizations may realize great improvement to their retention rates by implementing low-cost and creative solutions that make caseworkers feel appreciated. It is understandably difficult to develop retention strategies while working in a constant fire-fighting mode, as many CW organizations do. It is also difficult in an under-resourced environment such as CW where funds are usually scarce. Cost effective team building strategies such as encouraging employees

to eat lunch together, to get together socially outside of work, and other creative strategies (i.e. the pie throwing incident) may go a long way in increasing camaraderie and reducing frustration at a very low cost. Training programs that make supervisors aware of how important it is for caseworkers to feel appreciated and acknowledge, as well as those that give them the tools to build cohesive teams have great potential for reducing turnover.

7.5 Research Implications

This study's limitations and findings suggest potential opportunities for future research. Replicating the study in other private agency settings would improve the external validity of the current model (Ford, Voyer, & Wilkinson, 2000). Studies that model the turnover process in public agencies to determine similarities and differences in the structure of CW service provision would also add to our knowledge about how to best intervene to reduce turnover. It is also possible that between-agency differences, such as differences in caseload, could impact the system structure that causes turnover.

Research evidence suggests private agencies experience higher turnover rates compared to public agencies and that caseworkers in private agencies experience lower levels of job commitment. (Annie E. Casey Foundation, 2003; Faller et al., 2010; Jayaratne & Faller, 2009; Levy, et al., 2012). The competitive bidding process through which private agencies are awarded contracts is often based largely on providing services at the lowest cost. Salaries in private agencies are often lower than those in public agencies (McBeath & Meezan, 2010). Additionally, many of these contracts operate on a "pay for performance" basis (McBeath & Meezan, 2010). For example, supervisors at the study site discussed being financially penalized if families returned to the CW system within a set period of time. While such contracts intend to focus practice and improve outcomes (Elder, DeStefano, Blazevski, & Schuler, 2012), it is possible

they alter the service context in two ways. First, this contracting scheme likely limits the amount of financial resources available to private agencies, which my impact their ability to invest in valuable training and retention programs and programs to improve quality. Second, these contracts may cause caseworkers to feel pressured to meet goals specified in the contract at the expense of quality (Levy, et al., 2012), which may, in turn, increase frustration and turnover. Studies that focus on modeling the service context in private agencies bound by such contracts would provide insight on how such contracts impact turnover.

Future research that examines how to ensure that supervisors are equipped with the skills to provide social and emotional support to caseworkers has great potential for guiding agencies as they strive to increase retention rates. Future research could focus on what the content of such training should look like, how schools of social work can assist in preparing supervisors to provide such support, and how to make time available for professional development and in-service trainings within agencies. Past research indicates that supervisor training programs are indeed effective when supervisors use the skills learned in training, but that supervisors reported they are too busy to practice these skills regularly (The University of Iowa School of Social Work, 2009). Findings from this dissertation also indicate that such trainings have potential for reducing turnover. Yet, when turnover rates are already high, supervisors operate in crisis mode and there is little time available for improving skills. Research that focuses on how agencies might restructure supervisor tasks and time so that they have time for professional development may prove to be beneficial in the long run.

Finally, studies that compare the model in the current study with system dynamics models of turnover in other industries with high turnover rates, such as technology, retail, and

consumer services (LinkedIn, n.d.) could potentially lead to insights about how CW

organizations could be restructured to improve the quality of services despite high turnover rates.

Conclusion

In many ways, this dissertation brings good news to the field of CW regarding

caseworker turnover. Caseworkers indicated they simply want the same things that most of us

want in our work lives: to feel appreciated and to feel like they're part of a team. Foster care

casework is a difficult job. Caseworkers routinely make life and death decisions and encounter

difficult situations involving children on a daily basis. They deal with heavy workloads and must

juggle numerous tasks simultaneously. Stakeholders in this study did not discuss difficult or

unlikely solutions to the problem of turnover, such as reducing caseload or increasing salaries,

which would both be costly to agencies. Instead, they simply want recognition for a job well

done and have fun experiences with their coworkers. Both solutions should be easy to

accomplish.

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Appendix A: Stakeholder Interview Guide

Domain of Interest	STAHLSCHMIDT DISSERTATION INTERVIEW GUIDE Primary Question	Follow-Up Questions
1. Introductions:	*Comment:* Hello. Thank you for speaking with me today. My name is Mary Jo Stahlschmidt. As you know, I am conducting interviews with caseworkers and supervisors to learn about the causes and effects of turnover and caseload in child welfare services agencies. It is important to remember that there are no right or wrong answers, so please feel free to share your point of view. The real purpose is for me to learn about what you think. As I reviewed with you in the consent process, I am tape recording the interview because I want to ensure we accurately capture your responses. You can choose to skip any questions you feel uncomfortable answering. And please know that in our reports, we will never use your name because we want to keep what is talked about here as confidential as possible. Do you have any questions? Let's begin. *–Begin with first question—*	
123		
2. Causes and Effects of Turnover	First, I am interested in knowing some of your opinions and views on caseworker turnover in child welfare agencies. *Questions:* 1) What, in your opinion, are the most common reasons caseworkers quit their jobs? 2) What are some of the effects of turnover, in terms of how well caseworkers are able to provide services to children and families? How does turnover affect the agency's ability to provide excellent services to families? 3) What are some of the ways turnover affects the climate or atmosphere at your agency?	The following probes can be used if the respondent does not address them: A. Caseload B. Stress/burnout C. Longer time in foster care D. Decreased morale

STAHLSCHMIDT DISSERTATION INTERVIEW GUIDE

Domain of Interest	Primary Question	Follow-Up Questions
1. Introductions:	*Comment:* Hello. Thank you for speaking with me today. My name is Mary Jo Stahlschmidt. As you know, I am conducting interviews with caseworkers and supervisors to learn about the causes and effects of turnover and caseload in child welfare services agencies. It is important to remember that there are no right or wrong answers, so please feel free to share your point of view. The real purpose is for me to learn about what you think. As I reviewed with you in the consent process, I am tape recording the interview because I want to ensure we accurately capture your responses. You can choose to skip any questions you feel uncomfortable answering. And please know that in our reports, we will never use your name because we want to keep what is talked about here as confidential as possible. Do you have any questions? Let's begin. *—Begin with first question—*	
2. *Causes and Effects of Turnover*	First, I am interested in knowing some of your opinions and views on caseworker turnover in child welfare agencies. *Questions:* 1) What, in your opinion, are the most common reasons caseworkers quit their jobs? 2) What are some of the effects of turnover, in terms of how well caseworkers are able to provide services to children and families? How does turnover affect the agency's ability to provide excellent services to families? 3) What are some of the ways turnover affects the climate or atmosphere at your agency?	The following probes can be used if the respondent does not address them: A. Caseload B. Stress/burnout C. Longer time in foster care D. Decreased morale

Appendix B: Group Model Building Manual

Time	Activity	Description	Materials/Roles
8:00/12:30	Room Setup	Tables and chairs are organized in the room for the GMB session. All the materials that will be needed are moved into the room	Mary Jo
9:00/1:00	Convening Group and Opening Session	Opener starts the session, welcome, provides overview, bathroom facilities, breaks. Introduction of the modeling team Reviews the purpose of the GMB session. Brief intro to what will be done in the session, and how it will benefit the group/participants	Mary Jo
9:10/1:10	Seed Structure Script	Facilitator will lead the group in the "Seed Structure" script. The script will validate the seed structure and/or elicit new variables/structure. Mary Jo will face participants and tell the story of the unfolding structure as Molly draws it on the white board.	Facilitator: Mary Jo Modeler: Molly/ Sarah Recorder:
10:10/2:10	Action Ideas Script	The facilitator leads participants through the Action Ideas Script Wall builder will assist participants in arranging their ideas on wall At the end the wall builder will reflect back on the thematic clusters to the group.	Facilitator: Mary Jo Wall Builder: Molly/Sarah
3:00	Closing	Facilitator closes the by asking group if they have any questions, discussing next steps, and thanking participants	Facilitator: Mary Jo

Causal Mapping with Seed Structure

This script is used to elicit causal structures at the beginning of a group model building process when there is an interest in quickly illustrating how a focal problem or situation could involve a system of interacting feedback loops.

Time required during session: 60 minutes

Materials

1. White board
2. Markers
3. Recorder's materials

4. Tape for marble joints
5. Print outs of seed structure

Inputs:

Stock-flow seed structure from prior work with core modeling team

Outputs:

Causal map of reinforcing and balancing feedback loops that identify variables and structures related to a focal problem

Roles

- Modeler with expertise in system dynamics modeling who can draw diagrams in real time
- Facilitator familiar with the situation and language used by participants to discuss the problem, and strong group facilitation skills appropriate to the culture of participation
- Recorders (1) with some exposure to system dynamics and/or familiarity with the context of the issue

Steps

1. The modeler, who will be drawing the structure as participants discuss changes.
2. The facilitator begins by explaining, "We're going to spend the next 60 minutes or so doing a causal mapping exercise [on the previously identified issue]."
3. The facilitator explains that the diagram that will result from this will be available to them. The modeler then introduces the seed structure with the stock and flows.
4. The facilitator explains the notation as the structure is drawn on the board. This includes arrows, polarity ('+', '-'), and feedback loops as they appear in the diagram.
5. If changes are suggested or needed, the facilitator affirms the changes while the modeler captures the changes.
6. The facilitator then explains that participants can talk about their own experience or what they see in their family or community.
7. The recorders document working definitions used for key words.
8. The facilitator then asks questions that help identify impact and causal relations between identified key variables.
9. As someone suggests something, the modeler draws the link on the model in front of the room. The facilitator and modeler will then encourage participants to add variables and relationships. The modeler tries to get things recorded using exactly the same terms as the participants.

10. Meanwhile, the recorders are taking notes on the variables named, relationships being described, and quotes or stories that help put some context around the story. If necessary, the recorder uses the number chart developed earlier to help identify who is saying what.

11. The recorders write down relationships and should, as much as possible, use arrows in causal chains with '+' and '–' signs to indicate the direction of the relationship. A '+' sign indicates that increasing one leads to an increase in the other, and a decrease in one leads to a decrease in the other. A '-' sign indicates an opposite effect where increasing one leads to a decrease in the other, and a decrease in one leads to an increase in the other.

12. The recorders should avoid interrupting the flow of the conversation between participants and generally avoid asking clarifying questions or adding comments. They should simply make a note of the questions or comments in the margins and distinguish them from things that participants said, such as by using an asterisk (*) symbol.

13. The facilitator or modeler will interject when the first feedback loop has been formed.

14. If the group begins to slow down and there is time, or no feedback loop has been formed, the facilitator will ask if there are any relationships between the identified variables that have not been discussed. Doing this will help create loops that might otherwise have been missed.

15. The process continues until there are about 5 minutes left in the exercise, at which point the modeler points out, "We've only spent a little time, less than 60 minutes, coming up with some of these relationships and already it is looking pretty complicated." However, this is still much simpler than the reality they are trying to manage in practice and research. Ask if there are any other important variables or relationships that haven't been described.

Action Ideas

This script is used to identify and prioritize actions after a model has been developed.

Time required during session: 30 minutes

Materials

1. Sheets of office paper (enough for 5-8 sheets per participant)
2. One dark thick-tipped marker per participant
3. Blue "painters" tape for creating the wall and labels for the axes on the wall

Inputs:

Causal loop diagram or stock and flow diagram

Outputs:

Prioritized list of potential actions

Roles

- Facilitator experienced in small group facilitation and familiar with Meadow's (1999) paper on leverage points
- Co-facilitator/wall-builder able to organize the ideas
- Recorder to take notes on the ideas being suggested

Steps

1. Ask groups to take 10 minutes to identify as many actions as they can that could impact the model from the previous exercise.
   - "What I would now like you to do in each group is take 10 minutes and use the diagram to help you identify as many possible actions to improve this system as you can."
   - "There are a number of places you can intervene in the system (adapted from Meadows), in order of effectiveness:
     - Variables (lowest)
     - Connections
     - Rules that govern the connections
     - Goals in the system
     - Mindset (highest)"
   - "You can develop interventions that impact variables directly. For example, you could come up with a way to decrease [variable 1; e.g. parent stress]. This may be the least effective way to intervene because it is only fixing a symptom in the connection circle. [variable 2; e.g. gangs] contribute to [variable 1] in the connection circle, and efforts to reduce [variable 1] would only have a temporary effect since the diagram suggests that [variable 2] would continue to contribute to [variable 1]. While addressing symptoms may not have the highest impact in a system, it is important to remember that they can still be beneficial."
   - "You can also develop interventions that impact a connection. For example, you could come up with a way to help increase [variable 3; e.g. healthy meals], by impacting [variable 1]. Doing this would change the system by weakening the connection from [variable 1] to [variable 3]. Ultimately, this type of intervention might eliminate the connection altogether."

- "You can also consider interventions that create or strengthen a connection. For example, creating an intervention that is designed to help [variable 4; e.g. schools] more effectively address [variable 2; e.g. gangs] would strengthen the connection from [variable 4] to [variable 2]."
- "You can also come up with interventions that impact the rules that govern the connections such as the rules [insert policy intervention; e.g. regulate what foods a corner grocery store can sell]."
- "You can also address the goals in the system. [Insert example goal in topic system; e.g. examples of goals in the obesity system could be fitting into clothes, lowering stress, and eating healthy foods]."
- "And finally, you can develop interventions that aim to change mindset. [Insert example of changing mindset; one such example of changing the mindset from the obesity example could be changing how people view the cause of obesity from "parents just don't know how to cook" to "parents are too busy trying to make ends meet with their work and don't have the time to plan meals, shop, and cook."]"
- "There are many different types of actions you can come up with but they should all be focused on [topic]."
- "For each action, I want you to write a name that identifies the action on a sheet of 8.5x11 paper."
- "Since we will be posting and organizing each action, write only one action per sheet of paper and please use the large thick markers."
- "Specifically, look at the diagram and identify places where you might intervene.[Give example; e.g. In the obesity example, we might try to implement a program to decrease the consumption of unhealthy snacks and call this intervention "Providing healthy snacks at church." We would then write the name of this ("Providing healthy snacks at church") on one sheet of 8.5x11 inch paper using the markers.]"
- "After 10 minutes, I will ask you to share in a round-robin fashion the results of your list of actions by going to each group and asking you to share your most important action."
- "For each action, I want you to do the following:
  - (a) describe the action,
  - (b) identify where it would impact the model,
  - (c) identify how easy or hard it is to implement, and
  - (d) if successfully implemented, how much impact might this have on the [topic]."

- "You will have 10 minutes to complete this task."

2. Participants are given a 1-minute warning and told to sort their actions from the most important to the least important.
   - "We're about to finish. Please complete your last action before we get started again in the large group."
   - "Please sort your actions from the most important to least important."
   - "Please stop."

3. The facilitator then asks groups to share their actions, one at a time and in a round robin fashion starting with their most important action. If another group has already identified that action, then they should select their next most important action.
   - "As we did in the first exercise, I am going to ask each group to only share one action at a time because I want to make sure that everyone gets an equal opportunity to share their insights."

4. The facilitator asks clarifying questions to make sure everyone understands the action and where the action would impact the system by referring to the model, and then asks them to identify where the action should be placed on the wall in terms of workability and priority.
   - "Where do you see this action falling in terms of ease of implementation? How easy or hard would it be to implement this?"
   - "If successfully implemented, what do you see as the potential impact of this action on [topic]?"

5. As each group shares the action, the co-facilitator/wall-builder places the action in the quadrant identified by the group, while a co-facilitator or recorder writes the action and draws how it connects to other variables in the structure.
   - It is important that the group nominating the action determines where it fits in terms of workability and importance, as well as how it connects to other variables in the system. If other groups have a different opinion on where the action fits, they can nominate the variable on their turn.

6. Reflect back to the group your observations about the potential actions.
   - Actions that are easily workable and high priority represent "low hanging fruit."
     - Actions that are hard and high priority represent areas where funders, policy makers, and researchers may be able to help in understanding or modifying the barriers to implementing high priority idea