

A Multi-level Model of Care Flow: Examining the Generation and Spread of Care in Organizations

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Abstract

Care is emerging as a key component of work processes that must be managed in organizations. We propose a model of care flow, which is defined as a multilevel work process through which caring feelings and actions are generated and spread throughout an organization to address the needs of its members. Our model (1) distinguishes between the *generation* and *spread* of care as concepts, (2) specifies the three cyclical stages and multi-level mechanisms (at dyadic, collective, and organizational system levels) through which caregivers and care recipients act together to enhance flow in a work system, and (3) argues that care is inherently relational *and* emotional. Most importantly, we argue that both caregivers and care recipients shape the reproduction of care in our model, which addresses a gap overlooked by many organizational theorists. Implications for future research and practice are discussed.

Keywords: Care flow; Care work; Work process;

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Care is an increasingly important component of organizational effectiveness, especially in industries where value is created through interpersonal interactions and success is measured by improvements in customers' capabilities (e.g., health care; education). Care involves "feelings of concern, responsibility, and affection, as well as the work of attending to a person's needs" (Cancian & Oliner, 2000, p. 2). It encompasses activities that enhance joy and provide hope, as well as concepts like compassion, a specific type of care aimed at relieving suffering (Rynes, Bartunek, Dutton, & Margolis, 2012). In other words, it involves emotional and interpersonal action on behalf of those who need care (Kanov, et al., 2004). Recently, care has become an inherent requirement of many of the fastest growing occupations in the U.S. (BLS, 2015b). More people work as nursing assistants (just one of dozens of care occupations) than as metal and plastic workers, machinists, auto manufacturing assemblers and fabricators, steelworkers, and boilermakers combined (BLS, 2015a). The emergence of care in the U.S. (and world) economy warrants new theoretical models to describe how to generate and spread it at work.

Although care is still a relatively new topic in the organizational literature (Rynes et al., 2012), other disciplines such as social work, education, and health care, have focused extensively on the content and generation of care. These other disciplines have conceptualized care as (1) an individual-level phenomenon or trait (a person who cares or is caring) (Von Dietze & Orb, 2000); (2) the content of caring activities (Noddings, 1984); or (3) the result of interpersonal work (the quality of care provided) (Jenks, 1993). Newer conceptualizations of care highlight the emerging domain of care work, defining it as a "service that develops [or slows the deterioration of] the [intellectual, physical, and/or emotional] human capabilities of the recipient" such as their health, skills, or useful proclivities (England, Budig, & Folbre, 2002, p. 455). Care work illustrates the importance of the relational nature of care in work environments, where it is co-produced by both caregivers *and* those they care for (England, et al., 2002; Folbre, 2008). The integration of care recipients as active participants in the work flow raises questions about the structure and flow of care in the work process.

Unfortunately, existing models of work flow tend to describe the movement of organizational resources (e.g., raw materials and knowledge), but with a few exceptions (e.g., Kahn, 1993; Dutton, et al., 2006; Kanov et al., 2004) are not sufficient for describing the *spread* of care. For instance, while models of efficiency attempt to standardize operations and reduce variation or error, standardizing care minimizes the unique needs of each care recipient, reducing the caregiver's ability to interact with the recipient in a productive way. In health care, where organizations have drawn on existing models of work flow from manufacturing, such as total quality management (TQM), to improve efficiency and technical accuracy (Shortell, O'Brien, Carman, Foster, Hughes, Boerstler, & O'Connor, 1995; Westphal, et al., 1997), doctors and nurses worry about how the focus on efficiency impacts their ability to provide relational and emotional care to their patients. More work is needed to understand how caregivers and care recipients manage reciprocal relationships (Gittell & Douglass, 2012) in which both are active participants in work designed to develop human capabilities and improve organizational quality.

Our key premise is that the changing nature of work provides an excellent opportunity to build upon the concept of care in the workplace. In this paper, we integrate emerging research to develop a model of *care flow* that clearly conceptualizes a multi-level, cyclical work process through which care is generated and spread. Our process model makes three notable contributions to the organizational literature, particularly in contexts that emphasize human capability development as a key part of value-adding employee activities and primary outcomes. First, it examines the generation and spread of care, to understand how both activities contribute to the care flow process and occur between caregivers and care recipients. While previous literature on care has generally combined the two factors together, we emphasize the need to separate them in future research and practice to improve care in organizations. Second, we develop a multi-level, cyclical model of care flow, identifying and examining three stages through which caregivers and care recipients impact the generation and spread of care: anticipation, co-production, and replenishing. By identifying these three stages, we address the need specified by compassion scholars for a greater understanding about the inner workings of organizational processes around care (Dutton, Workman, & Hardin, 2014; Rynes et al., 2012). Third, we contend (and

demonstrate) that caregivers *and* care recipients contribute to and influence the care flow process. Relatedly, we argue that care is inherently relational and emotional, which addresses the call by Dutton, Workman, and Hardin (2014) to develop a theoretical model that considers the role and experience of care recipients in the caring relationship. By excluding or under-emphasizing care recipients, previous models of work flow are often insufficient for modeling the relational and emotional aspects of care. In the following sections, we summarize existing theory on care generation and spread in organizations, discuss the context and assumptions for our model, and then present our model of care flow, including process elements (i.e., generation and spread), contextual factors around the model, stages and levels of the model, and care flow outcomes. We conclude with a discussion of future research on care flow.

 INSERT TABLE 1 ABOUT HERE

Theory

As Eaton (2000) aptly observed, if manufacturing organizations such as auto plants represented the typical workplaces of the 20th century, care organizations represent the workplaces of the 21st century. Care is a timely concept, grounded in relationships and focused on the needs of others (Rynes, Bartunek, Dutton, & Margolis, 2012). It is a key factor underlying organizational changes arising from the U.S. shift from a manufacturing to service-based economy (Craypo & Cormier, 2000), the emphasis on quality health care delivery, the emergence of research on prosocial behavior (Grant, 2008) and managing workplace emotions (Brief & Weiss, 2002; Hochschild, 1983), and the growth of employees' own child and elder care demands due to the surge in women's employment (Kossek & Distelberg, 2009). We highlight the research around care, and present three contributions of our model.

Research on Care

As we mention above, Cancian and Oliker (2000, p. 2) define care as “feelings of concern, responsibility, and affection, as well as the work of attending to a person's needs.” Although research on care is relatively new in the organizational literature, researchers from many other disciplines have conceptualized care as being strongly rooted in reciprocity (Abel & Nelson 1990) and motivated by

concern for care recipients (Waerness, 1984) (See Table 1 for a comparison of care topics). For instance, in nursing, care is present in a range of activities, including those intended to relieve physical pain and address emotional suffering or loneliness (Fagerström, Eriksson, & Bergbom Engberg, 1998). It is so much a part of the work that Swanson (1993, p. 352) asserts that nurses' "informed caring for the well-being of others" makes it difficult to discuss the role of nurses without also evaluating the role of care. Research on the content of care highlights the time and skill needed to engage in it. For instance, a student answering a question will require less time or effort than a student who has missed several classes due to a medical emergency during the semester. The second student will likely need both compassion and assistance. As Abel and Nelson (1990) note, good care "fosters the independence and autonomy of people placed in dependent positions." It helps care recipients move toward their ideal selves in a way that is consistent with their goals, not someone else's goals of how they should be, and that promotes their dignity, identity, and agency.

There are at least a couple of reasons why care has received less attention in the organizational literature. First, care involves idiosyncratic interactions, making it hard to measure and compare across caregivers. Much of the early work on care focused on the individual level of analysis. It placed the onus of the caring process on caregivers, examining the caregivers' discretion to decide *when*, *how*, and *to whom* to deliver care. Swanson (1993) suggests that expert nurses possess the unique ability to interpret their patients' subtle needs and employ practices that would be invisible to an untrained observer. They can relieve physical pain and emotional suffering or loneliness (Fagerström et al., 1998). Similarly, Noddings (2003) suggests that teachers are responsible for distinguishing between students' wants and needs and knowing how best to direct care to address them. This places the responsibility of generating and spreading care largely on expert caregivers and emphasizes individual employee selection as a key tactic for increasing care. Other research on care in organizations has conceptualized it in other ways, as: caregivers' moral obligation or responsibility to care for others (Noddings, 1984; Von Dietze & Orb, 2000); a work requirement involving "fake" behaviors and attitudes (emotional labor) (Hochschild, 1983); an outcome of work (the quality of care one receives) (Jenks, 1993); or the organizational

structures including trust that enable employees to feel valued in their organization (McAllister & Bigley, 2002). In sum, these factors tend to be difficult to quantify and also reflect diverse levels of analysis. Another reason is that historically, care was provided informally in the home by unpaid family members—typically women (Folbre, 2012). As a result, it is still often treated as an unpaid commodity in the economy. Even as it moved into the workplace, care was devalued relative to other types of work (England et al., 2002) and was often viewed as discretionary and involving extra-role behaviors. Yet, care workers often comprise the base of organizational front-line workers and shape the quality of job outcomes.

Indeed, care is an important aspect of organizations, which can be generated or transferred as part of a work process (Gittell & Douglass, 2012; Kahn, 1993), occurring across collectivities, such as work units and organizational systems (Kanov et al., 2004; Lilius, Worline, Dutton, Kanov, & Maitlis, 2011). However, care is a multifaceted organizational activity. Kahn (1993, p. 544) was the first to begin to identify dimensions related to the generation and spread of care. He identified eight dimensions of caregiving, namely “accessibility, inquiry, attention, validation, empathy, support, compassion, and consistency” and modeled how they move together throughout organizational systems. We extend this seminal work in the organizational literature to examine the relationships and systems through which care is generated and spread, in order to improve care recipients’ capabilities. Such processes allow actors to accommodate the ambiguous nature of the work tasks involved in enhancing capabilities (Griffin, Neal, & Parker, 2007). Below, we outline three important gaps addressed by the care flow model.

Generation and spread of care as separate concepts

Previous literature tended to combine the generation and spread of care into a single set of caring activities. However, there are a few theoretical reasons to consider them separately. First, separating them could provide new insight into how care work can be structured. The care work literature suggests that care is co-produced by caregivers *and* care recipients in care episodes (England, 2005; England et al., 2002; Folbre, 2006, 2012; Waerness, 1984), to enhance the recipient’s intellectual, physical, or emotional capabilities. This shifts the focus of care away from caregivers and toward the alignment of interpersonal

relationships. Some caregivers may be better at generating care with recipients, while others may be better at spreading care by matching other caregivers and care recipients or by quickly identifying where care is needed. Separating generation and spread should enhance our understanding of these two processes. Second, other fields have already created theoretical insight by separating the generation and spread of resources. For instance, in manufacturing, development has been separated from production. In knowledge work, innovation is distinct from knowledge transfer. Separating the generation and flow of care can provide similar insight. Third, Kahn's (1993) organizational caregiving model has already provided some insight by focusing on the movement of caring actions. Kahn (1993, p. 547) describes "caregiving [as] flowing from agency superiors to subordinates during role-related interactions." Within a hierarchical organization, functional flow exists when those tasked with "directing, coaching, managing, and supervising others" provide care to their subordinates (Kahn, 1993, p. 547). However, he argues that not all flow is functional. There is also reverse flow, where those tasked with providing caring do not do so, and instead receive care from subordinates; fragmented flow, where care is shared among supervisors but withheld from subordinates; self-contained flow, shared among subordinates; and barren, or absent, flow (Kahn, 1993). Examining the spread of care enhances our understanding of the system of relationships in organizations and the way that care moves within that system. Our care flow model builds on this work to further separate the generation and spread of care into two distinct concepts.

Specifying distinct stages of the care flow process

Second, care requires effortful interactions between caregivers and care recipients throughout the work system, but when these stages are not described, this effort often becomes invisible. The assumption that some people are just naturally caring can mask the effort that they exert to provide it and also the effort and input of those receiving care. Research from the compassion literature notes the value of naming the stages of a process to better understand the effort required to provide it. For instance, compassion organizing researchers specify "a set of sub-processes [including noticing, feeling and responding] found both in individuals and collectivities" (Kanov, et al, 2004: p. 809) to relieve suffering (Dutton, Worline, Frost, & Lilius, 2006; Kanov et al., 2004; Lilius et al., 2011). Dutton et al. (2006) use

these stages to examine how university employees and stakeholders, including students, mobilized to respond to a fire that occurred in a dormitory on campus. The participants transcended their typical roles in the university to notice, feel, and respond, in order to ease the suffering of those students directly affected by the unexpected event. In summary, naming these cognitive, affective, and behavioral stages of their model allowed researchers to illustrate the effort expended through the multi-dimensional process of compassion organizing (Ryes, et al., 2012). As Lilius et al. (2011) note, everyday practices around noticing, feeling, and responding can eventually develop into an organizational capability to collectively respond to the suffering of others.

While different lines of research have highlighted unique stages of care, each stage is often examined independently. First, the care work literature emphasizes the importance of the co-production of care, suggesting that both caregivers and care recipients are engaged in the process of improving care recipient capabilities (England et al., 2002; Folbre, 2006, 2008a, 2008b, 2012). A separate line of research has examined the consequences of co-production, such as burnout (Maslach, Schaufeli, & Leiter, 2001), compassion fatigue (Adams, Boscarino, & Figley, 2006; Figley, 1995; Joinson, 1992) and restoration (Lilius, 2012). A final stage that has received less attention involves the preparation for the co-production interaction, where caregivers and care recipients build readiness to participate. In health care, some work has examined caregiver anticipation of care recipients' gaps in care (Lyndon, 2010), but more is needed to define this stage as it relates to care. While work has been done around these three areas, the care flow model integrates this research into a single process model with three distinct stages.

Relational and emotional aspects of care flow

Care is inherently relational, but some theoretical models of care do not incorporate the care recipient. We contribute to the call by Dutton et al. (2014) for more research around care recipients' expectations and contributions, in the context of the care relationship. Since "both the sufferer and the focal actor make sense of the situation and influence each other in ways that can hinder or facilitate compassion" (Dutton et al., 2014, p. 281), then models that exclude the care recipient would similarly be insufficient for understanding care. In fact, there is evidence that care recipients can influence caregivers'

attitudes and behaviors. For instance, Lilius (2012) suggests that some interactions with care recipients can be restorative for caregivers. Relational job design further describes how reorganizing work around relationships can generate care (feelings and actions) through meaningful, prosocial interactions with the beneficiaries of one's effort (Grant, 2007). Encouraging the emergence of such high quality connections is associated with thriving at work (Dutton & Heaphy, 2003).

In summary, the care flow model attempts to integrate this literature and address the three gaps: (1) to delineate the generation and spread of care; (2) to identify three multi-level, cyclical stages of the care flow process where caregivers and care recipients could intervene to improve care flow; and (3) to examine the role of the care recipient in interpersonal caring interactions.

Model Assumptions

The care flow model describes three stages of the caring process: (1) anticipation, where caregivers and care recipients prepare for the interaction, (2) co-production where both groups contribute to the provision of care, and (3) replenishment, where both groups recover from and reflect on the process. Our model describes how these stages contribute to the generation and spread of care, and also the multi-level mechanisms through which dyads up to organizational systems can influence the care flow process. Before we present the details of our model, we examine two assumptions underlying our model, to draw boundaries around the care flow process.

Levels of Analysis

First, the care flow model examines mechanisms at three levels of analysis: the dyadic, which is nested in the collective, which is nested in the organizational system. A dyad involves bi-directional social interactions between one caregiver and one care recipient. Information, tasks, and emotions are shared such that the output of one individual is the input for the other (Phillips-Silver, Aktipis, & Bryant, 2010). A collective describes a group of individuals whose inputs and outputs are contained in a loop, rather than a bi-directional relationship (Phillips-Silver et al., 2010). For example, a teacher and pupils, an oncology care team and a cancer patient, or a group of social workers assigned to patients on the same floor. There could be one or more caregivers and one or more care recipients in a collective.

Organizations are systems comprised of many caregivers and care recipients. While organizations have a greater capacity than individuals to allocate people effectively, to develop policies or practices to enable care flow, to maximize the quality of the care generated and spread, and to protect individuals from the negative effects of exhausting interactions, we intentionally avoid referring to organizations as *caring* entities. We contend that it is the caregivers and care recipients acting collectively who exhibit caring attitudes and actions to generate and spread care. So, it is difficult to talk about care flow at an organizational level of analysis without also describing the content of care in a single dyad or collective (i.e., group). In practice, care flow describes the interactions between of caregivers and care recipients, as they come together to generate care and then spread it to others.

The actors in the organizational system include caregivers, who provide care, and care recipients, who require and/or receive it. Within the organization, care flow can occur in many directions simultaneously. However, for simplicity we focus here on downward, role-consistent flow, e.g., from supervisor to subordinate, or workers to consumers. This is consistent with Kahn's (1993) conceptualization of the flow of caregiving. In the discussion section, we consider other directions.

Types of care

There are two types of care available in care organizations: instrumental (baseline) and empathetic care (Abel & Nelson 1990), which incorporates aspects of relational and emotional care. Instrumental care refers to tangible care tasks that must be completed to provide a minimum standard of physical safety and physical well-being to care recipients (Bowers, 1987). It emphasizes conformance to industry and organizational regulations that provide baseline standards for care quality, while avoiding abuse, neglect, or errors. Its explicit nature (relative to empathetic care) allows caregivers to more easily communicate and coordinate tasks, and monitor whether they are completed in an efficient and timely manner as part of the care delivery process. In healthcare settings, instrumental tasks refer largely to activities required to keep patients clean, safe and healthy, and to maintain regulated standards of quality (Bradley and Falk-Rafael, 2011). While this baseline of care is important, it may not be sufficient for making care recipients feel cared *for*, since at a fundamental level, it lacks emotional attachment (Harlow,

1959) or relational engagement. A baseline level of instrumental care is necessary before empathetic care can be considered (i.e., it is hard to talk about the quality of empathetic care if basic levels of safety or sanitation have been neglected), but it may not be sufficient.

That said, the care flow model begins with the assumption that there is an adequate baseline of instrumental care and focuses instead on empathetic care, which encompasses idiosyncratic, interpersonal behaviors that support the development of care recipients' socio-emotional capabilities. It targets care recipients' emotional and relational needs (Folbre, 2008a), and emphasizes their dignity, identity, and agency. When care recipients perceive quality empathetic care, they feel comforted and believe that their caregivers are attending to their relational and emotional needs (Abel and Nelson, 1990; Kralik, Koch, and Wotton, 1997). Empathetic care is also "richer" (compared to instrumental care) in terms of the quality of interpersonal interaction and the information encoded in the relationship. As a result, it can be harder to codify with checklists or standardization. It can be learned through observation or direct experience. We do not seek to add to the extensive literature on instrumental care, which has already been a focus of regulation in other fields to target safety (Walker, Reshamwalla, & Wilson, 2012). Rather, we focus primarily on the empathetic care that is generated and spread, and its implications for work where human capability development is a critical outcome.

A Model of Care Flow

Figure 1 shows our model of care flow. It describes the cyclical process of generating and spreading care that unfolds before (anticipation), during (co-production), and after (replenishing) direct care episodes in an organization. For example, at a dyadic level, when a caregiver anticipates that her coworker might need a break after a potentially draining session with a client (anticipation), she stops by her desk after the session and checks whether she'd like to debrief (anticipation). They talk over coffee (co-production) until the coworker is replenished and the caregiver feels energized from having helped (replenishing), and so they proceed to prepare lunches for their clients (new anticipation phase). Care flow occurred primarily between the caregiver and coworker, but it also includes interactions with different groups of clients. The goal is to ensure that there is enough care and that it is spread to those

who need it, given that some people will need time to enhance their capabilities. In the next section, we describe the elements of care flow and specify two contextual factors associated with the process. Then, we highlight the three temporal stages (i.e., anticipation, co-production, and replenishing) and levels (i.e., dyadic, collective, and organizational system) of the care flow model. We also specify the multi-level mechanisms, both situational (i.e., macro-level organizational phenomena which impact dyads), and transformational (i.e., dyad-level phenomena that influence the macro-environment) underlying each stage (Hedstrom & Swedberg, 1998). Finally, we discuss the implications and future directions for studying care flow. Since the model is cyclical, effective interactions can develop over time.

 INSERT FIGURE 1 ABOUT HERE

Two Elements of Care Flow

Table 2 describes two elements of strong care flow: (1) generation and (2) spread.

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Generation. The first element of strong care flow is generation, which refers to the creation of care (e.g., feelings of concern, responsibility, and affinity, and work tasks around care) (Cancian & Olicker, 2000) between the caregivers and care recipients. Care, unlike raw materials or knowledge, is a so-called moral resource (Hirschman, 1984), meaning that it can be generated even as care is co-produced and expended during care episodes. The interaction between caregivers and care recipients generates new feelings or actions by (a) directly enhancing care recipients' capabilities and improving or restoring caregiving capabilities (Gist & Mitchell, 1992; Lilius, 2012) or (b) indirectly enhancing care recipients' capabilities enough that they can become caregivers themselves and engage in care episodes with others (e.g., caregivers or peers) (England, 2005). Since care is created through use, generation is most likely to occur during the co-production stage of the care flow model, where caregivers and care recipients act together to address care recipient capabilities. Practically, for organizational members to continue generating care, they must be protected from burnout (Maslach & Jackson, 1981; Maslach et al., 2001)

and given opportunities to restore their caregiving capabilities. For instance, employees who must face particularly angry patients or customers may need time and/or empathetic coworkers in order to cope with the situation before they can generate care with someone else (Rafaeli & Worline, 2001; Sutton, 1991).

P1: As caregivers and care recipients effectively complete the stages of the care flow process, more care will be generated. Generation will be strongest during interactions between caregivers and care recipients in the co-production stage.

Spread. Spread reflects both the ability of organizational members to direct care to those who specifically need it and to diffuse it broadly to make it available to those who need it later, without creating isolated clusters of quality care for some groups but care deserts for others (Kahn, 1993). The idea of spread as both direction and diffusion may seem contradictory, but it is comparable to the spread of information, which can be broadly distributed, so that everyone has a general sense of the message, or targeted and tailored to specific individuals in a way that makes sense to them. In other words, the idiosyncratic nature of care requires it to be broadly accessible, but tailored to each person's unique need. When care is directed, an appropriate level reaches a care recipient who needs it. When care flow is diffused, care resources tend to be more freely and extensively available to members throughout the organization. Patient-centered care in the health care industry seeks to direct care to patients, identifying their unique needs and determining targeted care plans. In schools, students whose teachers had worked to successfully diffuse care—i.e., by increasing their interactions in a set of elementary schools—achieved significantly higher reading scores than those who did not, even after controlling for the level of teacher experience (Leana & Pil, 2006). Students achieved better results when their teachers shared information with each other and had a common vision of the organization (Leana & Pil, 2006). In contrast, negative outcomes in organizations, including poor patient satisfaction, staff burnout, or turnover, can in part be seen as an organizational failure to spread care to those in need. For instance, silos and subcultures can inhibit both directed and diffuse care flow throughout the organization.

P2: As caregivers and care recipients effectively complete the stages of the care flow process, care will spread throughout the organization. Directed spread will be strongest as a result of enhanced preparation, coordination, and targeting during the anticipation stage. Diffuse spread will be more likely during the replenishment stage.

At the same time, generation and spread are interrelated. As organizational members witness the generation of care, it is easier for care resources to spread because the members know that it will be available to them later. Caregivers and care recipients are supported, and therefore have the capacity to direct and disseminate care throughout the organization. In a similar way, when care is effectively spread, organizational members are more likely to have the capability to generate more care.

Contextual factors around care flow in organizations

The care flow model is embedded in organizational systems and could be impacted by contextual factors in that environment. In defining the compassion process, Dutton et al. (2014) embed it in personal, relational, and organizational contexts, to suggest that all three can impact how compassion occurs at each stage of the model. We will discuss mechanisms at the organizational level that can inhibit or facilitate care flow as we describe the model. In this section, though, we briefly examine the other two contextual factors that can influence care flow: (1) characteristics of the individuals, (i.e., caregivers and care recipients), and (2) characteristics of their relationship. These two categories have been extensively studied in models of knowledge transfer and care work, suggesting their importance to care flow (Argote & Ingram, 2000; Folbre, 2008a).

Organizational Stakeholders—Caregivers and Care Recipients. There are at least two actors in every care episode: a caregiver and a care recipient. As stated before, we focus on role-related care that is delivered downward through the organization. Caregivers provide care and include direct and indirect care staff and managers. Care recipients receive care and include consumers or clients (e.g., students, social service clients, nursing home residents) and sometimes employees (Folbre, 2008b). One significant contribution of this article is the inclusion of the care recipient as an active participant in the care episode.

Caregivers. Caregiver characteristics that can influence care flow include their (a) skills and competence, (b) responsibility to care, and (c) motivation. Research from philosophy and nursing suggests that caregivers must have competence to understand both the needs of their care recipients and how to provide an appropriate level of care (Noddings, 1984; Von Dietze & Orb, 2000). For instance, teachers work to make students excited about difficult subjects. They encourage students to solve math

proofs, despite the students' discomfort, because they recognize the importance of engagement for enhancing their cognitive capabilities and achieving their future goals. The nursing literature similarly regards caregivers as experts who can decide how best to allocate care (Swanson, 1993) as a result of higher levels of emotional intelligence or previous experience with the given task. Since care episodes are idiosyncratic and require flexibility in planning and scheduling (Abel & Nelson 1990), caregiver skill and competence can influence the success of the interaction. In the math teacher example above, teachers who fully understand the fundamentals of math might still struggle to provide care if they do not understand how students learn or how to support students as they struggle through challenging problems. Greater skill at understanding these interactions can produce better results by allowing caregivers to listen and respond more effectively. This translates into greater generation of care. Second, caregiver responsibility can influence care flow. Here, responsibility describes how caregivers are evaluated and whether they are expected to provide care as part of their job. Responsibility is often tied to in-role requirements—i.e., a job expectation to provide care (e.g., nurses; managers), rather than extra-role requirements—i.e., provide care on a discretionary basis (e.g., patients) to provide care (Kahn, 1993). Not all caregivers in the organization will be employees (some could be volunteers). However, employees may be accountable for delivering minimum standards of care, to meet regulations for care recipient safety or well-being. The ethics of care literature places all of the responsibility for care recipient outcomes firmly with the caregivers, without expecting care recipients to reciprocate (Noddings, 1984). Caregivers who take responsibility for identifying and responding to care recipients' needs with competence will likely produce stronger care flow (Tronto, 2005). The responsibility to care will likely enhance the direction of care, since caregivers will actively seek individuals for whom they are responsible to care. Finally, caregiver motivation can impact care flow. Motivation is driven by the caregivers' desire to provide good care, to reciprocate caring norms or care provided to them, or to care for care recipients that they like or enjoy. Nursing assistants often build strong relationships with particular residents (Mittal, Rosen, & Leana, 2009) and provide levels of care that they would like their

families to receive. Motivated caregivers persist longer in providing care to care recipients, increasing the generation of care. We propose:

P3: (a) Caregiver *skill and competence* related to providing care will facilitate the generation of care, (b) Caregiver *responsibility* will facilitate the directed spread of care flow and (c) Caregiver *motivation* will facilitate the generation of care flow.

Care recipients. Care recipients' needs, communication skills, and initial level of readiness can influence care flow by signaling their preferences and the skill, time, and effort required to enhance their capabilities. First, care recipients vary in the intensity and immediacy of their needs. For instance, the level and type of care needed by a baby is very different from that of a coworker. A newborn baby will require complete assistance (e.g., feeding, changing, and comforting), while the coworker likely only requires occasional emotional assistance to address a specific stressful situation. The greater the care recipient's need, the greater the potential for a rich, complex interaction that generates care. However, greater need can inhibit the directed spread of care, since the intense effort required to address greater care recipient needs increases the risk of compassion fatigue (Figley, 1995) and leaves less time to provide care to others. On the other extreme, the more self-sufficient care recipients are, the less reliant they will be on others to help them fulfill their needs. This can inhibit the diffuse spread of care, since individuals primed to think of themselves as self-sufficient are less likely to engage in prosocial behaviors or to help others (Vohs, Mead, & Goode, 2006), reducing opportunities for generating or spreading future care. Second, care recipients have different abilities to express themselves, which can impact the care flow process. The ability to communicate includes an awareness of their needs, and an ability to articulate and convey those needs to others. Some care recipients can engage in constructive voice behaviors (Van Dyne & LePine, 1998) to articulate their needs and develop solutions to address them. Others can only signal preferences or indicate pleasure/displeasure with a given course of action. For instance, nursing home residents can prompt attention to their joy through non-verbal cues, including smiling or touching an object. Better expression facilitates generation and directed spread of care because it improves the richness of the interaction and the ease of spreading care to articulate care recipients. Finally, care recipient readiness will also impact how willing they are to be active participants during the

care flow process and to accept the care that is offered to them. Care recipient readiness is often taken for-granted—caregivers assume that the care recipient is willing and able to accept care (Dutton et al., 2014). If the care recipient is not ready to accept the care, then it will be harder for the caregiver to generate care with them (we discuss this more in the anticipation section) and might create a situation that is ultimately draining for all of the actors involved. Beehr, et al., (2010) describes several types of help that can strain the relationship between caregivers and care recipients. For instance, they argue that social interaction can emphasize the stressful nature of the environment, provide an affront to one's self-conception, or simply come as unwanted assistance (Beehr, et al., 2010). When care recipients are ready to accept care, they will be more open to generating care with caregivers and diffusing the care they received to others.

P4: (a) Care recipient *needs* will facilitate generation, but inhibit the directed and diffuse spread of care, (b) Care recipient *ability to express* their needs will facilitate generation and directed spread of care, and (c) Care recipient *readiness* to accept care will facilitate the generation and diffuse spread of care.

Quality Relationships. The second contextual factor that can impact care flow is the quality of network relationships throughout the organization, which serves as the medium through which care flow occurs. High quality connections can develop instantaneously through a mutual affinity, or as a result of repeated interactions over time. In either case, they are characterized by trust, reciprocity, and mutuality (Dabos & Rousseau, 2004). Dutton and Heaphy (2003) highlight three features of high quality connections: (1) higher emotional carrying capacity, meaning that they allow for the expression of emotion; (2) tensility, or the connection's strength in the face of conflict or strain; and (3) degree of connectivity, or openness to new ideas (Dutton & Heaphy, 2003, pp. 265-266). High quality connections generate benefits for caregivers and care recipients. In a study of mentoring, Allen (2003) found that even when mentees could not perfectly reciprocate the mentoring behaviors to their mentors, the mentors still derived benefits, including a sense of accomplishment, new ways of doing their work, and satisfaction from helping others (Allen, 2003; Allen, Poteet, & Burroughs, 1997). Similarities between mentors and mentees, also led to better learning (Allen & Eby, 2003).

High quality connections increase the generation of care by enhancing the richness of the connection between caregivers and care recipients. Higher emotional carrying capacity involves caregivers and care recipients openly expressing their emotions, making it easier for them to empathize with each other and understand care needs, increasing generation. It may be harder to transfer these emotions to others, though, reducing directed or diffuse spread. Tensility allows caregivers and care recipients to express ideas and emotions that may be uncomfortable, but that move toward effective care episodes, again increasing generation. At the same time, when tensility is strong and both parties are secure in communicating how best to generate care, it becomes easier to direct similar care to others, too. Finally, the degree of connectivity describes how connected the relationship is to new ideas and to seeking new opportunities to “create expansive emotional spaces that open possibilities for action and creativity” (Dutton & Heaphy, 2003, p. 266). The degree of connectivity would likely diffuse care by creating new avenues for spreading insight from care actions to others.

P5: High quality connections will increase the generation of care. (a) Higher *emotional carrying capacity* facilitates generation but inhibits both types of spread, (b) *tensility* facilitates generation and directed spread, and (c) *degree of connectivity* facilitates diffuse spread.

In summary, these two components are essential factors that can impact care flow, describing the participants, and their relational connections.

A process model of care flow

Now that we have defined the context, we present the three stages of care flow: (1) anticipating the recipients’ care needs; (2) co-producing care with the recipients; and (3) replenishing care to allow caregivers and care recipients to restore their energy. These stages are grounded in ideas from existing models of care summarized above, including stages identified in the compassion organizing literature (noticing-feeling-responding) (Dutton et al., 2006; Kanov et al., 2004) and even the knowledge literature (Szulanski, 2000). For each stage, we describe how it operates at the dyadic, collective and organizational system levels and then follow Hedström and Swedberg (1998) to develop a typology of social mechanisms through which care flow is established across organizational levels. Transformational mechanisms explain “how a number of individuals [or dyads], through their actions and interactions,

generate macro-level outcomes” (Hedström & Swedberg, 1998, p. 21). Situational mechanisms “establish how macro-level events or conditions affect the individual” (Hedström & Swedberg, 1998, p. 22). Each stage of the process provides caregivers and care recipients an opportunity to align their intentions and perceptions by making their expectations and preferences known. The better the two groups can communicate and create meaning through interaction at each stage, the more successfully the two parties’ interests will align, and the stronger the care flow will be.

Anticipation

Anticipation is a proactive stage that involves interpreting information, including care recipient signals, to predict and recognize changes in care recipient needs or to build readiness to receive care. Jenks (1993) describes this phenomenon as caregiver “knowing,” which is gained through interpersonal relationships—knowing patients, other peer nursing staff, or physicians. At the same time, this process also involves understanding care recipient readiness. One problematic assumption with many care models is that care recipients “will be open to, ready for, or accepting of compassionate responses” (Dutton, Workman & Hardin, 2014: 297). At a dyadic level of analysis, then, anticipation involves interactions in which care recipients signal their needs (formally or informally) and caregivers recognize those needs or anticipate events or triggers that could change the care recipients’ capabilities (positively or negatively). In many cases, they work to prepare the care recipient by building readiness: informing the patient of the prognosis, alternative treatments, and risks, and then providing support for the patient’s decision. For instance, steps to build rapport with patients, including asking them questions about their preferences (Lopez, 2006) or counting down (3, 2, 1) before lifting or moving them can develop trust and respect and improve anticipation. Taken together, the dyadic relationship involves calibrating readiness so that both parties can co-produce care. For example, a certified nursing assistant (CNA) in a nursing home setting notices that her resident will be celebrating his birthday in the middle of March, for the first time since his wife passed away. Anticipating that this could cause him sadness, the CNA re-arranges her schedule to be available to him in March. When the resident tells the CNA that he is worried about an upcoming

procedure and would like to talk, the CNA helps the resident find information about and emotionally prepare for the procedure to increase his readiness.

At a collective level, anticipation involves a group of people creating and interpreting signals to anticipate the needs of others. This could be a set of nurses working on the same unit or an interdisciplinary team planning how to anticipate patients' needs. For instance, anticipating that a resident will be nervous about using a new lifting device, a CNA and physical therapist could jointly demonstrate the procedure to him to build his readiness and obtain his approval to proceed. Or, students could share with each other that their teacher is having a bad day and make a card to cheer him up. Anticipation includes recognizing subtle differences in the care recipients' general mood or usual behaviors that might signal negative or positive affect or suffering (Swanson, 1993) and then making predictions about their future needs to direct attention and build readiness.

At an organizational level of analysis, anticipation entails informed, systematic anticipation of care recipients' needs and caregiver capabilities. Individuals can be systematically matched, to build care recipient readiness and ensure that caregivers are able to meet care recipients' needs during the next step of the care flow model (co-production). At an organizational level, caregivers scan the environment for care recipient needs, they evaluate their ability to address the needs (e.g., Can they do it? Do they need help?), and communicate the care recipients' needs to others. Organizational leaders facilitate this process by monitoring the quality of the matches, and encouraging matches that maximize effective outcomes. For instance, in public schools, teachers meet as a team to discuss student progress and to communicate potential issues with some students, so that they can plan collective solutions for addressing the students' needs and maximizing the effectiveness of the outcome (Leana & Pil, 2006). Similarly, in healthcare, organizations have been investing in systems to increase care coordination for patients across multiple specialties. Part of the care team includes employees who can answer patients' questions and build their readiness, but also includes employees who are knowledgeable about scheduling appointments and tracking treatments. Organizational leaders can encourage these relationships by providing opportunities to encode and share knowledge about care recipient needs and caregiver capabilities.

Anticipation is similar to the idea of “noticing” in the compassion literature (Dutton et al., 2006; Kanov et al., 2004), which requires that caregivers be aware of and attentive to others’ emotions, especially with regard to others’ pain or suffering (Kanov et al., 2004). However, anticipation is different in two key ways. Anticipating goes beyond just recognizing others’ emotions, to include an aspect of prediction or planning. In other words, caregivers anticipate events or triggers (or care recipients foreshadow them) that change care recipients’ capabilities, and they make plans to address them. Second, care recipients are included as active participants in the process, in terms of expressing preferences or readiness. At the end of this stage, caregivers are allocated to care recipients, based on their needs.

Transformational mechanism for Anticipation. Transformational mechanisms describe how dyads collectively impact macro-level outcomes (Hedström & Swedberg, 1998). The transformational mechanism for anticipation involves what Weick and Roberts (1993) call collective mind, or the development of a set of collective mental processes through which organizational members coordinate to attend to a situation. While the idea of collective mind seems intuitively cognitive, Weick and Roberts (1993, p. 374) explicitly refer to mind as containing emotional and behavioral components, the “integration of feeling, thinking, and willing.” Indeed, in their conceptualization of collective mind, Weick and Roberts (1993, p. 374) highlight two aspects that correspond with anticipation, the need to operate with heed, which they define as “attentiveness, alertness, and care” and with inter-relatedness, “behavior that takes into account the expectations of others.” Caregivers in the anticipation phase are heedfully scanning the environment, looking for and anticipating changes in care recipients. Weinberg (2006) observed that nurses who interact with patients on a regular basis, chatting with them or helping with daily tasks, acquire specific information about them that allows the nurses to make better decisions about their care (Adams & Nelson, 2009). Caregivers do this by engaging in preparatory behaviors (e.g., asking questions; building rapport; learning histories and preferences) with care recipients, to facilitate the ability to anticipate future needs. Jenks (1993) finds that experienced nurses are very good at developing interpersonal relationships as a way to better recognize the needs of their patients. Through these interpersonal relationships, caregivers can also work with care recipients to increase care recipient

readiness. Care recipients in the anticipation phase are contributing to collective mind by expressing or foreshadowing their needs and preferences. They can also learn to develop tactics for more effectively expressing readiness to receive care, so that the care flow process can be more effective. The goal of the anticipation stage is to build recognition and trust and to foster care recipient readiness.

Collective mind, here, is not the same as “hive mind” or collective consciousness, where everyone knows or has access to the same information. Instead, Wegner (1987) and Wegner, Erber, and Raymond (1991) suggest that individuals with close relationships will collectively assemble a shared understanding, through which to encode shared experiences. No one individual has all of the information, but they interact with others to understand what needs to be done and who will do it. For example, in the public schools example, allowing teachers to share their experiences (and possibly information about their students) enhanced students’ reading scores (Leana & Pil, 2006). Managers who wish to intervene here could consider providing time and/or space for members to interact informally, to improve caregivers’ recognition of care recipient needs or tactics for improving readiness.

P6: Collective mind, or shared mental processes about where care is needed, will be associated with a more effective anticipation stage and the directed spread of care

Situational mechanisms for Anticipation. Van de Ven (1986) notes that over time, employees can grow accustomed to their surroundings and become less aware of others’ needs. Situational mechanisms allow organizational leaders to create systems to improve anticipation throughout the organization. The organization is better suited than individuals alone to develop systems by which to match caregivers and care recipients, and to direct attention to ensure that care flow reaches all members of the organization (March & Simon, 1958). Organizational leaders are also better at translating and disseminating best practices throughout the organization. The primary situational mechanism that organizational leaders can use to improve anticipation is a shared transactive memory system that can organize and formalize the information collected and analyzed by the dyads throughout the organization (Ren & Argote, 2011). Transactive memory systems encode who knows what, rather than the information itself (Argote, Ingram, Levine, & Moreland, 2000; Moreland, 1999; Moreland & Argote, 2003). In the anticipation stage, it

might be more accurate to describe the transactive memory system as encoding both (a) who knows each care recipient best, and (b) who knows how to handle the specific needs that have been identified. For instance, the system could track not only who “knows” what (and even what there is to know) in the organization, but who “feels” and “needs” what. Such a system could track important care recipient dates (e.g., birthdays, anniversaries), care needs (e.g., allergies, emotional needs, check-ups) and also notify caregivers of significant events, like family visits. It could also be used to codify the collective mind practices of certain groups throughout the organization. In other words, this system could be designed to retrieve and catalog information from caregivers and care recipients about their skills, their needs, their readiness and the effectiveness of matches in the organization. In the hotel industry, such systems have long been used to track customer preferences and build the relationship with the customer (Mohammed & Rashid, 2012). Healthcare organizations, which are working to reduce readmission rates to avoid reimbursement penalties, have started investing in electronic health records to coordinate their patients’ care needs. These investments allow several caregivers (e.g., physicians, nurses, specialists) to view information about a patient, and also to help the patient coordinate his own care (Nguyen, Bellucci, & Nguyen, 2014; Rudin & Bates, 2014). While both of these examples deal with customers of the organization, these shared systems can similarly benefit employees, by providing resources for learning about their colleagues’ skills and about whom to go to in order to address their own needs. In addition to providing information about their treatment plans, though, these systems can incorporate information about the care recipients’ feelings, fears, goals, or achievements to improve the organization’s ability to anticipate their emotional and relational care needs and to better enhance their physical, psychological, and emotional capabilities. In this way, organizations can use transactive memory systems to learn about care recipient needs, the most appropriate caregiver for a particular situation, and the best match for maximizing anticipated outcomes (Moreland, 1999).

P7: Organizational systems around transactive memory will be associated with a more effective anticipation stage and the directed spread of care

Co-production

The second stage of care flow, co-production, describes the actual interactions between caregivers and care recipients as they act together around caring attitudes and actions. At a dyadic level, co-production entails the appropriate, direct interactions through which caregivers provide and care recipients receive care designed to enhance care recipients' physical, psychological, and/or emotional capabilities (Cancian & Oliner, 2000; England et al., 2002; Folbre, 2008b). The dyad involves a mutual bi-directional relationship, where each person's output becomes the other person's input (Phillips-Silver et al., 2010). The care work literature describes co-production as an interactive process to which both caregivers and care recipients contribute (Folbre, 2008a). For example, a supervisor co-produces care with her subordinate by listening to her vent about an issue with a student and then helping her to brainstorm tactics for addressing the situation. Another example involves a physical therapist cheering on her patient as she successfully walks across the room for the first time since her accident. Even when care recipients have difficulty expressing their preferences, caregivers can thrive in the interaction, by developing their competence and feeling good about the application of their skills to enhance the dignity and capabilities of the care recipient. Co-production is distinct from the final stage of compassion organizing—"responding" (Kanov et al., 2004)—in that the care recipient is an active participant. In some cases, co-production could actually increase a person's immediate suffering, if it pushes them to do something challenging or painful in the short-term that ultimately aligns with their ideal future self and aims to enhance their capabilities in the long-term. Swanson (1993, p. 353) suggests that nursing focuses on "assisting clients to attain, maintain or regain the optimal level of living or well-being they choose." Nurses still have to convince patients to take their medicine or exercise to get better, even when it is uncomfortable. However, they do it in a way that respects the care recipient's dignity, identity, and autonomy. Additionally, co-production allows both parties to celebrate joy or accomplishment, empowering them to pursue challenging goals in the future.

At a collective level, co-production involves actual interactions among a group of caregivers and care recipients. For instance, in a classroom setting, teachers present a concept in a way that many

students will understand and then separate students into groups to enhance and support the comprehension of the material. Here, care is co-produced between the teacher and his/her pupils, but also among the pupils in the class to facilitate a supportive learning environment. Another collective group could be a set of team teachers who meet with a student to determine the student's needs and to coordinate their teaching styles in order to enhance the student's chances of success. Instead of a bi-directional loop, the care outputs and inputs are distributed through the group (Phillips-Silver et al., 2010).

At an organizational level of analysis, co-production describes the system of caring interactions between caregivers and care recipients throughout the organization. The system of co-produced caring interactions at an organizational-level of analysis is multi-directional. Caring interactions can occur directly between caregivers and care recipients, or indirectly through spill-over effects that occur when other members witness or indirectly benefit from the care. For simplicity, though, the care flow model focuses on role-related downward care flow (e.g., from supervisors to employees, or employees to customers). Appropriate care occurs when the type of care supplied is sufficient for the amount of care needed. For instance, elderly residents in assisted living facilities can be self-sufficient in many domains (e.g., they can go for coffee with friends, or take walks), although they may want or need to talk to caregivers when they feel sad or lonely. In this case, the appropriate care would entail giving the elderly residents freedom and autonomy, while being available to them when they feel less capable. This level of care would not be appropriate (i.e., sufficient) for patients with cognitive conditions like Alzheimer's, who are less able to understand or express their needs. For these patients, appropriate care would not entail as much autonomy, but it might still involve comforting them when they are confused or anxious.

Transformational mechanism for co-production. Gittel and Douglass (2012, p. 716) suggest that caregivers and care recipients decide together “what is best to be done and how best to do it” while co-producing care to enhance the capabilities of the care recipients. The transformational mechanism for co-production is collective efficacy (Gibson, 2001) around delivering and receiving care. Collective efficacy is defined as “a group's collective belief in its capabilities to organize and execute the course of action

required to produce given levels of attainment on a specific task” (Gibson, 2003, p. 6). In the case of co-production, this specific task is the enhancement of care recipient capabilities. Similar to collective mind, these collective beliefs develop through interactions and collective experiences. Even as caregivers and care recipients join or leave the network, the group retains a shared history that continues to shape group norms and dyadic behavior over time (Gibson, 2003). Although collective efficacy reflects a cognitive mechanism, it is developed through caregiver-care recipient caring interactions and is influenced by the group’s collective affect (Gibson, 2003). These interactions can even spill-over to affect others. For instance, Haidt (2002) suggests that acts of kindness can spread through vicarious learning—seeing someone else engage in compassion can encourage others to similarly act for the common good. Co-production allows care recipients to contribute in some way to their own care, even if only to the extent of expressing needs and/or preferences (Brudney & England, 1983; Needham & Carr, 2009; Wilson, 1994). The level of collective efficacy influences care recipients’ perceptions of their own effectiveness, and of caregivers’ abilities to recognize and relieve pain and to create mutual trust (Gibson, 2001). Sharing and demonstrating these collective beliefs during the co-production of care can further enhance care recipient capabilities by strengthening the relationships. As Folbre (2008c: 1770) notes:

‘[S]tickiness’ of care work makes it difficult to increase efficiency... [yet it] also has positive effects, precisely because care doesn’t fit the characteristics of a standard commodity. Sustained personal interaction with care recipients can strengthen intrinsic motivation to help them, which enhances performance in complex jobs characterized by task ambiguity, where it is difficult to specify in advance which specific goals should take priority.

Thus, replacing one caregiver with another is not without cost, even if the replacement caregiver has the identical technical training, knowledge, skills, and experience of the original. This makes care distinct from other forms of work. Literature in manufacturing and knowledge work perceives stickiness unfavorably, since it is synonymous with slow and sluggish service. In care work, stickiness is much more positive and indicates a strong tie between caregivers and care recipients. For instance, if a patient is afraid of using a machine to be lifted out of bed, it is useful to have staff who know how to use the equipment and can explain the process to the patient. However, telling them how the machine works may not be as comforting to them as having a trusted caregiver hold their hand during the process, or as having

their roommate remind them of other brave things they have done before, reassuring them that they can do this. Other research has shown that when caregivers believe they can reduce their care recipients' suffering, it improved the patient's assessments of well-being (Keefe et al., 2003). These interpersonal behaviors that occur throughout the organization include pep talks, interactions that stretch the care recipients' abilities, or those that help them to cope with or to take their minds off of their problems. Managers wanting to improve collective efficacy should allow caregivers to build relationships with recipients, and also provide opportunities to learn innovative methods for engaging in empathetic care.

P8: Higher levels of collective efficacy around care will be associated with a more effective co-production stage and greater generation of care.

Situational mechanism for co-production. Gittell and Douglass (2012) argue that organizational leaders are well suited to develop formal structures that embed care work practices, rather than relying on a few caring individuals to try to change the culture of the organization. At the organizational level of analysis, the situational mechanism for enhancing co-production involves the creation of a strong organizational culture that emphasizes care for others. To generate such a culture, organizational leaders can emphasize policies around teamwork and role flexibility that embed relational coordination into the role of all managers, employees, and other stakeholders (Gittell & Douglass, 2012). Culture at the organizational system level can either be reinforced at the sub-group level, or the sub-groups can form their own sub-cultures. First, organizations can encourage co-production through culture by formally ensuring the use of consistent teams of caregivers and effective employment practices to ensure successful care recipient hand-offs. As the teams get to know each other, stickiness, mentioned above, makes it easier for them to co-produce care with each other. Research on high reliability work teams highlights the role of interdependence, communication, and mutual trust for enhancing organizational outcomes (Baker, Day, & Salas, 2006; Roberts & Rousseau, 1989). In health care organizations, the importance of the system of co-production is evidenced by new regulations that reward the coordination of care across providers (Chassin, Loeb, Schmaltz, and Wachter, 2010). Employment practices that can contribute to this culture of care include hiring and investing in full-time workers (Rosen, Stiehl, Mittal,

& Leana, 2011) or setting consistent schedules (Lambert & Waxman, 2005) so that caregivers end up working with the same care recipients. At the same time, one potential cost of strong teamwork is that the stickiness might create silos around the team, limiting the care available to other groups. Organizational leaders can limit this risk by cross-training caregivers to co-produce care with multiple teams, with different care recipients or around different care needs. They can also formally overlap shifts to allow caregivers to discuss care recipients. As a culture of care develops in the organization, it is also possible that individuals within “silos” of care will recognize the opportunity to spread their abundant care to areas that are lacking, thus perpetuating the caring culture.

Second, organizational leaders can employ relational job design (Grant, 2007) to develop a relational structure that emphasizes care. Organizations can redesign reporting relationships or work roles to more explicitly connect care recipients to organizational members who do not otherwise directly interact with them. For instance, encouraging role flexibility (within fixed boundaries, to avoid concerns about breaking regulations) breaks down barriers and expedites care deployment, rather than waiting for an employee in the proper hierarchical role to perform a narrow set of tasks. Role flexibility is associated with proactive work behaviors (Parker, Williams, & Turner, 2006). Organizational leaders can develop formal policies for allocating caregivers to enhance the culture, so that the average level of care is maximized throughout the system during the co-production stage. Some caregivers are better suited to work with certain groups of care recipients (e.g., those with Alzheimer’s). Some care recipients demonstrate preferences for certain caregivers. Organizations can selectively hire and allocate these skilled caregivers to effectively co-produce care with the care recipients and to enhance their capabilities. At the same time, organizational leaders must determine how to allocate caregivers to minimize burnout, and to identify caregiving relationships that enhance the caregivers’ abilities to care. The reward for being an effective caregiver should not necessarily be to work with the most difficult care recipients.

P9: A strong culture of care, emphasizing interdependent teams and role flexibility, will be associated with a more effective co-production stage and better generation of care.

Replenishing

The final stage of the care flow process is the replenishing stage, where caregivers and care recipients reflect on their interaction and restore any energy they may have lost while engaging in co-production. The replenishing stage of care flow requires caregivers and care recipients to consider their previous interactions, to make sense of them, and to encode effective tactics for improving them in the future. Replenishing is also similar to the integration stage in the knowledge transfer process, where the new knowledge becomes routine, and is integrated with existing knowledge. During this stage, each party learns more about the other, through reflection, and builds trust and respect (Orlikowski, 2002). At a dyadic level of analysis, replenishing occurs as the two parties make sense of the interaction and develop meaning. The sensemaking component is a key feature of the compassion organizing model, when actors reflect on their efforts to relieve suffering (Dutton et al., 2014). This stage entails identity negotiation within the dyad and can foster future relational connections and tensility, as caregivers reflect on their role in providing appropriate care, care recipients consider the extent to which their transformed capabilities approach their ideal selves, and both reflect on the effectiveness of the interaction. In an ideal setting, reflection builds trust and understanding to facilitate their relational connection. For instance, when a student finally understands a difficult concept, the teacher learns about the approach that was used to help the student understand and identifies new skills that can be used with future students. The student gains appreciation for the process, feels proud about their new capabilities and appreciates the teacher's help. Together they both enhance their relational connection quality for future learning interactions.

However, due to the idiosyncratic nature of the relationships, some interactions will be more replenishing than others (Lilius, 2012). Research by Frost and Robinson (1998) highlights the so-called 'toxic handler,' who buffer other employees from negative aspects of the organization, but in doing so, expose themselves to stress, anxiety, and pain. Even when the co-production stage is not successful (e.g., the caregiver was unable to meet the care recipients' needs, or the caregiver's energy was depleted during the interaction), in an effective care flow process, the replenishing stage allows caregivers and care recipients the ability to recognize that recovery is needed, and to decide how to recover—e.g., by taking

time for themselves, or by changing the scope or meaning of the interaction in the future. For instance, after dealing with a child's tantrum, the caregiver could recover by changing the scope of the job to emphasize how they are impacting the child's future, rather than the child's hurtful words in the present. The caregiver could also have a conversation with the child after the incident to discuss different ways of reacting to the same stimulus in the future.

At a collective level, replenishing involves a small group that can support sensemaking and meaning. Group members can share best practices to improve stickiness. For instance, students in the same class can reflect on a teacher's feedback during the co-production stage and support each other's efforts to improve their capabilities during the next co-production interaction. They can also spread care to others, using newly developed capabilities to become more effective at addressing others' needs. Group members could also develop ways of coping with difficult situations. For instance, they could share new ways of sharing empathy or addressing common issues.

At an organizational level of analysis, replenishing provides an opportunity for organizational members to collectively find meaning in their jobs to support recovery. For instance, organizational leaders could examine why certain caregivers have consistently high satisfaction ratings from care recipients over time, so that they could translate this information throughout the organization. From an organizational perspective, it is important to evaluate and understand the system of relationships that exist throughout the system and to evaluate the quality of care produced through these interactions. For example, are the care recipients' capabilities improving? Are their needs being met in a timely manner?

Transformational mechanism for Replenishing. The transformational mechanism for replenishing involves collective job crafting (Leana, Appelbaum, & Shevchuk, 2009, p. 1172), where dyads or small groups "jointly determine how to alter the work to meet their shared objectives." Indeed, Leana et al. (2009) found that strong social ties enhanced the use of collective job crafting among child care teachers and aides. Collective job crafting requires caregivers and care recipients to jointly assess the success of their interactions and to determine how to change aspects of the job to improve it in the future. Initially, Wrzesniewski and Dutton (2001) described job crafting as a process through which individuals shape and

change the boundaries of their work to increase their satisfaction with it. The three types of boundaries that individuals craft include the task boundaries, cognitive task boundaries, or relational boundaries associated with the job (Wrzesniewski & Dutton, 2001). As individuals craft the boundaries of their work, they derive a sense of control over their work, create a positive self-image, and increase feelings of belongingness in the organization (Wrzesniewski & Dutton, 2001). For instance, caregivers can change the relational boundaries of their work by pairing very difficult interactions with restorative ones throughout the day or by finding a colleague to help them with challenging care recipients. For instance, a nursing home resident would regularly argue with staff, who eventually realized that he missed his autonomy. Once they made this realization, they offered him a new role as the nursing home greeter, which changed his role in the organization, and changed the caregivers' relational boundaries (Lopez, 2006). Here, we refer to the collective crafting of caregiving boundaries. This stage relies on the caregivers and care recipients to assess what is working, what is not, and how to change aspects of the work to make it more meaningful. Previous research has found that working with care recipients can be restorative (Lilius, 2012) or depleting (Maslach & Jackson, 1981). Due to the system of relationships that exist in organizations, it is likely that some caregivers will eventually become care recipients—they may need time to recharge or they may need a supportive peer or supervisor to connect with them emotionally. It is also possible that some care recipients will be able to (or want to) become caregivers. Exchange theory suggests that individuals seek to maintain balance in relationships between what they give and what they receive, so that care recipients would likely want to reciprocate the care they receive if they can (Blau, 1964). One way care recipients can do this is by validating the caregivers' skills and abilities through continued exchange of aligned care. Another way is to leverage their restored capabilities to help others (Folbre, 2008a). Crafting the boundaries between caregiving and receiving care, and focusing on restorative interactions with care recipients can serve to replenish caregivers, making it easier for them to provide care to others. Managers have to be open and flexible to new ways of defining work boundaries and evaluating what works. Allowing care recipients to become caregivers enhances the care available in the organization and empowers care recipients to further develop their capabilities.

P10: Collective job crafting will be associated with a more effective replenishing stage and more diffuse spread of care

Situational mechanism for replenishing. The situational mechanism for understanding replenishing is organizational resilience. Resilience is the “capacity to rebound, to ‘bounce back’ from adversity, uncertainty, conflict, failure or even positive change, progress and increased responsibility” (Luthans, 2002, p. 702). While resilience is often examined as an individual characteristic (Luthans, 2002), at the organizational level of analysis, it is a “measure of robustness and buffering capacity of the [organization] to changing conditions” (Berkes, Folke, & Colding, 2000, p. 12). Resilience can be fostered through policies that encourage perseverance, or that build members’ resistance, to help them bounce back from adversity quickly. For example, schools could provide mentorship programs to help anxious new teachers learn tactics for dealing with difficult students. High stocks of resilience facilitate quick organizational responses to rapidly changing conditions, and enhance members’ abilities to respond to and recover from situational ambiguity. Resilient organizations identify and encourage beneficial, functional relationships between caregivers and care recipients, and they protect caregivers at risk of burnout.

First, managers can improve resilience by monitoring the effectiveness of the care dyads throughout the organization. For instance, managers could evaluate the effectiveness of mentorship relationships by evaluating whether the mentee is engaged with their mentor and whether their output or skills are improving as a result of the relationship. Second, managers can monitor the burden placed on caregivers to protect them from burnout. Ineffective care flow can deplete the care resources of individual caregivers by pairing them with care recipients who are difficult or who do not match the caregivers’ skill sets. Similarly, care recipients can be exposed to unwanted care. One way to relieve the burden on caregivers is to increase the number of caregivers available or to reduce the burden on any one, either by ensuring proper staffing levels, or by increasing the care capabilities of others in the organization. For instance, Sutton (1991) described a call center where individuals who handled difficult clients were given fewer calls, since each one was especially draining. The organization was able to

dispatch calls based on their severity and then to provide some reprieve for employees who were stuck with the most challenging calls. Third, managers that give their employees greater schedule control experience fewer absences, lower employee turnover, and fewer instances of issues from the employees' home-lives spilling over into work (Moen, Kelly, & Hill, 2011). Giving control, even over schedules, can improve resilience. This enhances employees' ability to provide consistent care, and to be present to meet the care recipients' needs.

P11: Fostering organizational resilience is associated with a more effective replenishing stage

Outcomes of Care Flow

Care flow has important implications for a number of outcomes, at the organizational, collective, and dyadic levels. While it is difficult to measure care directly due to its intangible nature, we can still develop some idea of the amount of care available in the organization by measuring the perceptions of organizational members. For instance, we would expect employee attitudes (e.g., job satisfaction) and behaviors (e.g., attachment) to be higher in organizations with better care flow, and for factors like burnout (Maslach & Jackson, 1981) and turnover to be lower. But, beyond reducing burnout, this process provides opportunities to strive for that which is life-giving in their relationships. The care work literature makes a strong case for care as a mechanism for enhancing care recipient capabilities. Indeed, sick individuals that are nursed back to health develop improved capabilities that can be re-directed toward helping others in the future.

A major concern about the delivery of care to paying recipients, insofar as it affects direct caregivers, is that it can exploit employees (England et al., 2002). In order for the same quality of care to be delivered when resources are reduced, the care organization may place additional responsibility on individual employees. For instance, when nursing assistants are absent, their residents are redistributed among the remaining workers. However, when properly managed, organizational care can be replenished. The organization, rather than individuals, absorbs system shocks so that care flow continues unimpeded (neither at the expense of caregivers nor care recipients). This is not a mere scaling up, to the

organizational level, of individuals' motivation and abilities to provide quality care. Rather, it involves the contextual opportunities facilitated (or constrained) by the organization, to enhance care quality. At an individual level, within each dyad, stronger care flow enhances care recipient capabilities, and strengthens the relationship between caregivers and care recipients, allowing both parties to thrive. At a collective level, stronger care flow can enhance the quality of relational coordination (Gittell, 2006). Each positive interaction strengthens the set of group relationships, increasing trust and coordination, and enhancing the richness of the relationship, making it easier to anticipate, co-produce, and replenish care in the future. At an organizational level, stronger care flow can increase the quality of care delivered throughout the system. It can also reduce turnover, by showing consideration to employees and by ensuring that their capabilities are enhanced. Its salience in the organization increases the attention that organizational members give to it. Positive psychology tenets (Seligman & Csikszentmihalyi, 2014) do not just exist to make members less miserable, but also serve to develop their ideal selves. Focusing on care flow can allow organizations to discover latent strengths around the provision of care. It can also unlock virtues within organizational relationships, including dyads and broader collectives.

Discussion

Care flow has theoretical implications for extending our understanding of the emerging emotional and relational aspects of care work that underlie value-adding activities in a growing number of industries. Our care flow model not only addresses a growing organizational phenomenon by specifying stages for managing it, but also emphasizes the importance of *context* for seeing a familiar organizational phenomena (i.e., the flow of resources) in a new light (i.e., as related to care). The care flow model makes three notable contributions.

First, it identifies and differentiates two elements of care flow that have been examined interchangeably in the past: the generation and spread of care. While the generation of care involves the creation and recreation of interpersonal feelings and actions, the spread of care involves the allocation of care to caregivers and care recipients, in either a directed way to those who specifically need it or a diffuse way so that it is broadly available when needed. Research on care in other fields focused

extensively on the generation of care, but did not often separate it from spread. At the same time, previous research on work flow has followed trends in Western economic development and demonstrated that different types of work processes produce different work flow systems (Tushman & Nadler, 1978). To date, research on work flow has relied heavily on established models from manufacturing or knowledge work (e.g. innovation, process improvement), so that even hospitals have drawn from models such as total quality management (TQM), to increase efficiency and the flow of patients through the system (Shortell et al., 1995; Westphal, Gulati, & Shortell, 1997). While these models do improve efficiency (Shortell et al., 1995), they are less likely to address (and may even try to minimize or ignore) the processes that promote activities essential for care flow. Just as manufacturing and knowledge-based organizations informed our understanding of the flow of resources such as raw materials (MacDuffie, 1995) or information (Darr, Argote, & Epple, 1995), care organizations can inform our understanding of the flow of feelings and actions that attend to another's needs. Similarly, managing the spread of care flow can create unique organizational competencies. In fact, researchers in other fields, such as nursing, have long recognized the importance of quality health care for improving client outcomes. Separating the generation and spread of care provides new research directions for theories around work processes.

Second, the care flow model identifies three distinct stages through which caregivers and care recipients can intervene to generate or spread care (i.e., anticipation, co-production, and replenishment), and examines the multi-level mechanisms that can foster or reinforce generation and spread across dyads, collectives, or the organization. The use of stages to model a work process is not unique—compassion organizing highlighted the stages of noticing, feeling, and responding (Dutton et al., 2014; Kanov et al., 2004), and the process of knowledge transfer contains initiation, implementation, ramp-up, and integration (Szulanski, 2000). However, the use of stages illuminates areas of effort that can otherwise remain invisible. The three stages of the care flow model not only clarify where caregivers and care recipients could intervene to enhance the care flow process, but they integrate research from multiple domains into a single process model. For instance, research from feminist economics has produced valuable insight into the co-production of care, suggesting that care work involves the input of both

caregivers and care recipients as they work together to improve care recipient capabilities (England et al., 2002; Folbre, 2006, 2008a, 2008b, 2012). They suggest that it is not enough for a caregiver to provide care unless it is aligned with the needs and/or preferences of the care recipient. A separate line of research has examined the consequences of caring, such as burnout (Maslach et al., 2001), compassion fatigue (Adams et al., 2006; Figley, 1995; Joinson, 1992) and restoration (Lilius, 2012). Providing care can be physically or emotionally demanding or enriching, and so we included a stage that provides an opportunity to assess the results of the interaction and to take steps to restore capabilities before a new interaction. The third stage, which has received less attention, involves the preparation for the co-production interaction, where caregivers and care recipients build readiness to participate. The compassion literature highlights the idea of noticing (Kanov, et al., 2004), but as we mention above, the anticipation stage is a unique contribution. Anticipation requires caregivers and care recipients to empathize with each other as they prepare for an interaction, but also to take action to make sure each is ready to proceed. In nursing homes, nursing assistants describe how they ask residents whether they are ready for certain activities (e.g., bathing) and how they will come back later if not. Even in helping residents to stand from the bed, or transfer to a chair, CNAs talk about counting down (i.e., Ready? 3, 2, 1, Go!) to let the resident prepare. Some research examines caregiver anticipation of care recipients' gaps in care (Lyndon, 2010), but more is needed to define this stage as it relates to anticipating what needs to occur and working with care recipients to build readiness for the next stage.

One question that could arise from this model is: How can care be spread before it is generated? The three stages of the model are cyclical, so as care is generated, it forms a base-level of organizational care. If an organization has no stock of care generated earlier, then it relies on the contextual factors to provide initial levels for the anticipation stage (e.g., caregivers, care recipients, organizational context).

Third, the relational nature of care warrants a renewed focus on both caregivers *and* care recipients as actors in the caring relationship (Dutton, Workman, & Hardin, 2014). Models that exclude the care recipient are incomplete. As we alluded to above, current process models are insufficient for modeling care flow (See Table 3 for examples). For instance, effective manufacturing flow fosters

efficiency in the conversion of raw materials into tangible products that eventually exit the system, often with little direct input or interaction with the customer (Bowen, Siehl, & Schneider, 1989; Hage & Aiken, 1969). As raw materials are transformed, they must be replenished. The flow is constrained by blockages on the line and resources that can only exist in one place at one time through sequential steps (Borgatti & Halgin, 2011). In contrast, care can be replenished at an organizational level as it is co-produced, just as trust evolves through the process of interacting with others (Lewicki & Bunker, 1996). The unique needs of the care recipients makes the relational and emotional aspects of care flow idiosyncratic and more resistant to economies of scale (Folbre, 2006).

Effective knowledge transfer fosters the flow of information (explicit and tacit) and “know-how” to produce enhanced knowledge, tangible products (e.g., knowledge management software), or intangible services (i.e., technical support) (Argote & Ingram, 2000; Argote, McEvily, & Reagans, 2003; Szulanski, Jensen, & Lee, 2003; Tushman & Nadler, 1978). Both care and knowledge flows involve interpersonal interactions in the transmission of an intangible resource¹. Unlike raw materials, knowledge and care flows are nonlinear and can be duplicated (or generated) through use, so that the source still retains the information after transmitting it to a recipient (Borgatti & Halgin, 2011). They are also not useful if they are hoarded, or fragmented such as when care flow passes between certain stakeholders (e.g., supervisors and care workers), at the expense of others (e.g., patients; Kahn, 1993). In some cases, knowledge and care can even be transmitted simultaneously, as when a doctor provides health information to patients with empathy and consideration for their psychological and physical well-being. However, there are several important differences between knowledge and care flow that necessitate new models. For example, stickiness, which is problematic in knowledge flow (Szulanski, 2003) is seen as helpful in underpinning the relational nature of care flow (Folbre, 2008c). This requires new thinking from managers about how to design work processes when caregivers are not interchangeable. Also, although knowledge can spread from one source to multiple recipients simultaneously across time and space (e.g.,

¹ Although knowledge flow does not require interactions in order to transmit knowledge, as in the case of reading a book to learn statistics.

through print or electronic media), care flow requires empathetic consideration and co-production from at least two people. Care flow includes the contribution of the care recipients.

INSERT TABLE 3 ABOUT HERE

In summary, while existing organizational theories of manufacturing and knowledge flow can inform work processes in care organizations (e.g., TQM in healthcare) they are not sufficient for understanding the relational and emotional aspects of care. Care recipients' dynamic and idiosyncratic needs do not fit neatly into existing models. In addition, the beneficial role of stickiness in care flow is not captured by previous conceptualizations in knowledge work. Thus, we argue for new models to examine the movement of care. In care work, the goal is to enhance the capabilities of the care recipients. Care flow requires an understanding of the empathetic needs of others, rather than (or in addition to) abstract expertise (knowledge flow), or standardized processes (manufacturing flow).

Future research directions

Our care flow model raises several questions that provide direction for future research.

Who are caregivers and care recipients? We have noted that care is multi-directional, but have focused primarily on role-consistent (1) downward flow. However, care flow can also occur: (2) upward, e.g., from employees to their supervisors or clients to caregivers; and (3) laterally, peer-to-peer (Gittell & Douglass, 2012; Kahn, 1993). While previous research treats caregivers as a distinct set of care experts, if we consider a system of relationships in the organization, the clear boundary between caregivers and care recipients blurs and the roles become more permeable. The roles are comparable to the source and recipient in knowledge transfer (Argote & Ingram, 2000). They reflect relative positions in the interaction (giving or receiving information or care), rather than predefined and separate groups of individuals based on qualifications. This means that the definitions of caregiver and care recipient might not always overlap with formal occupational titles that require the provision of care. For instance, a new certified nursing assistant in a nursing home could simultaneously be a caregiver (e.g., to a resident) and a

care recipient (e.g., of a colleague who is providing direct training or mentorship). Similarly, a resident who is the care recipient, might also serve as a CNA's caregiver, by listening to the CNA's concerns or sharing joy, allowing the CNA a moment to recharge. This raises several questions for future research: What does it mean for someone to identify as a caregiver or a care recipient? How do they shift between these roles? At what point has a care recipient developed their capabilities enough to become a caregiver? Do formal designations (e.g., job titles) impact the way that people view their roles as caregivers or care recipients? How do managers manage caregivers who are not organizational members? It could be that care recipients eventually reciprocate the care they receive to their caregivers, essentially exchanging roles with them. However, it could also occur in a sequential order, where they "pass it on" to others who require care. Future research is needed to understand how actors transition between the roles of caregivers and care recipients and work to reciprocate the care they receive.

How are intentions and expectations matched? The anticipation stage of the care flow model is novel in that it captures the importance of preparation in the process of care flow. However, little is known about how caregivers and care recipients navigate this stage. When the care recipient is included as part of the care team, it is not enough for caregivers to decide alone how they want to provide care to others. Instead, it is important that the caregivers understand the care recipients' long-term goals, their current state and expectations, and their readiness to accept care. At the same time, care recipients need the time and space to communicate these preferences. In some cases, they may not be able to do so with words. What the caregiver intends and what the care recipient perceives could be very different, and can impact the quality of the co-production stage. One key feature of the care flow model, then, is its emphasis on matching caregiver intentions with care recipient expectations throughout the process. For instance, Lopez (2006) describes an example of emotional care in one nursing home, where a resident was acting out against nursing assistants because he felt useless. The social workers in the home stepped in and worked with him to make him a greeter, providing him renewed purpose in a new role (Lopez, 2006). This match of intentions and expectations allowed the resident to feel empowered, and the nursing assistants to have an easier time shaping their relationship and providing care to the resident in the future.

Part of the role of the caregiver might also be to help shape these expectations. For instance, in rehabilitative nursing homes, some patients expect nursing assistants to take care of all their needs, but the nursing assistants push back and tell the patients that in rehabilitation, the patients must learn to do the tasks themselves in order to get better. When the care recipients' capabilities are declining, the caregiver may need to help the care recipient find new ways of doing the things they enjoy. For instance, Lopez (2006) describes how activity coordinators would help residents at all activity levels contribute to creating pillows, an activity they enjoyed. Some residents would construct the pillows, others would fold rags, so that they could feel helpful, too (Lopez, 2006). This becomes an ongoing negotiation between caregivers and care recipients. Future research should examine tactics for matching caregiver expectations and care recipient preferences

How do caregivers and care recipients navigate the timing of care? Care flow is a cyclical process. Its intended outcomes might not be attained instantaneously, but instead can develop over time. For example, gaining mastery of a particular subject, recovering from surgery, or maintaining capabilities as people age all require repeated effort from caregivers and care recipients. However, progress with care flow requires that caregivers and care recipients align their long-term expectations, as discussed above. This raises interesting questions about what makes for appropriate care? Research on care work argues that "care that makes a recipient 'feel good' is not always the best form of care" (Folbre, 2008a, p. 7). At any given point during the care flow process, the caregiver or care recipient might not feel good and, in fact, feeling good in the short-term may not be sufficient for the care recipient to achieve their long-term goals of accomplishment or independence. Improving capabilities is hard work, and assuming there is agreement about what the care recipient wants to do in the future, the caregiver might need to push them to stretch their current capabilities in ways that are frustrating (e.g., solving difficult math problems), painful (e.g., walking after surgery), or uncomfortable (e.g., working independently). A recent article suggests that some altruistic individuals choose to activate negative affect in others (e.g., anger or fear) to prime those other people to reach their end goals more effectively (López-Pérez, Howells, & Gummerum, 2017). Since the caregivers knew that the task would be unpleasant for the care recipient, they induced

negative emotions that would allow the recipients to complete the difficult task (López-Pérez et al., 2017). However, what happens when a caregiver believes that something is in the care recipient's long-term interest, but the care recipient does not agree? Is action that a caregiver takes to improve capabilities in the long-term still care if it makes the care recipient feel worse in the short-term? The compassion literature explains that "the response or display does not have to eliminate or remedy suffering for compassion to exist [but] there must be a movement to respond" (Dutton, et al., 2006). At the same time, they also acknowledge the unpleasantness of unwanted care. More research is needed to understand the negotiation between caregivers and care recipients. How do caregivers prepare care recipients for hard work that may increase negative affect, to eventually lead to an outcome that the care recipient values?

Detrimental flow. We have generally discussed effective care flow, but future research is needed to better understand detrimental flow (Kahn, 1993). A primary concern is that care does not reach those who need it, such as when there is no match between caregiver capabilities and care recipient needs. Similarly, if organizations are understaffed, some individuals will not receive care. However, another more nefarious threat is that some individuals will actively work against care flow—e.g., pampering care recipients to the point that their capabilities decline. External stakeholders, including family members of patients or students influence care flow. For instance, if a patient is told to get up and exercise to help the healing process, but a family member does tasks for them, their capabilities can decline and threaten the co-production of care between the patient and his doctors. We argue that good caregivers are able to work with the care recipients to understand the difference between providing assistance to an individual and enabling them by doing everything for them.

Tension can arise from misalignment, when the care recipients' preferences conflict with the beliefs of others (e.g., caregivers, family members, the organization). Physicians with terminal prognoses will often refuse invasive treatments with side-effects and low probabilities of success and choose instead to spend their remaining time as peacefully and painlessly as possible. This can create tension with family members who would rather the individual pursue more aggressive treatment in the hope that it will prolong life. Similarly, in a nursing home, some residents may prefer to sleep in rather than to get up

early. However, it is easier for employees to move residents to breakfast around the same time. Beehr, Bowling, and Bennett (2010) talk about this type of unwanted care. Compassion fatigue can arise when caregivers engage in the care flow process, but the care recipients' capabilities do not improve. For instance, Lilius et al. (2011) describe a situation in which an employee complains about the same thing every day. By listening, the caregivers become burdened and tired of the complaining. The focus on enhancing care recipient capabilities could (possibly) help to alleviate compassion fatigue, but if the care recipient never develops readiness to receive care, caregivers might suffer in the future.

Another threat involves disregarding the preferences and readiness of the care recipients. There is a growing emphasis in medicine and education on care recipient preferences. Care recipients often enter the care flow process in a vulnerable position. They may have goals for an idealized self that they are trying to realize—e.g., reaching their maximum potential or slowing the progress of degenerative diseases—but the caregiver might be in a stronger position to actually guide the caring activities. So, the caregiver has the responsibility of understanding the care recipients' goals and preferences and working with them to align co-production towards the realization of those goals. For instance, if students do not value playing the piano, then forcing them to practice against their will can denote harshness and misaligned care. Even if such harshness evokes compliance, it is not care if it denigrates the dignity, identity, or agency of the care recipient. Instead, the care flow model suggests another strategy, which involves working with care recipients to assess goals and preferences, increasing care recipient readiness, and aligning care flow with the goals and preferences of the care recipient. Here, the teacher can remind students that practice will bring them closer to their goal of mastering a piece of music, performing well at a concert, or developing a lifelong appreciation for music. The delivery of care may not be comfortable, but it should be aligned with the care recipients' goals.

Finally, there has been some concern about whether to institutionalize care as a labor market activity (England, 2005). Since care historically occurred in the home for free, there is a tendency to devalue it in the labor market (England et al., 2002). There is also concern that if care workers are engaged in authentic actions, then pushing for higher wages and better compensation could reduce their

authenticity (England, 2005). This extends to communities, where McKnight (1995) expressed concern that the introduction of professional caregiving organizations could lead community members to lose their ability to, and/or lessen their perceived responsibility to provide care, reducing the total amount of care available. At the same time, as care becomes a work activity, it is important for organizational leaders to understand and compensate the value that it adds, rather than exploit the employees who provide it.

Care flow in other industries. Care organizations, including those in health care, social work, and education, have unique features that require new theoretical models to understand their activities. First, they exist in large and growing industries that rely on value-adding activities around developing human capabilities to fulfill their missions. Healthcare expenditures alone account for nearly 18% of the U.S. GDP (CMS, 2014), while education expenditures account for almost 5% (UNESCO, 2013). Second, the mission-driven and service-based nature of care organizations means that the spread of care is essential to effectiveness for both nonprofit and for-profit firms. For instance, nursing homes develop practices for encouraging caregivers to think about and treat their patients as “family” (Dodson & Zincavage, 2007). Even for-profit hospitals are evaluated on patient outcomes, including their satisfaction, and use language and symbols to emphasize the importance of providing high quality care to patients. Third, caregivers in care organizations must address the needs of care recipients as part of their jobs, while taking into consideration their dignity, identity, and agency—their caregiving roles are not discretionary. So, care organizations are incentivized to develop policies and procedures to ensure compliance and high quality interactions. At the same time, care recipients have a say in the type of care they receive. Physicians cannot force patients to exercise or to undergo a risky surgery.

Despite our emphasis on care organizations, models of care flow could also be important for other organizations. Indeed, the positive organizational scholarship (POS) literature on compassion organizing (Kanov et al., 2004; Lilius et al., 2011) provides examples of demonstrated care in settings as varied as a Fortune 500 retail company (Grant, Dutton, & Rosso, 2008) and an accounts receivable business unit (Lilius et al., 2011), where care is not necessarily required as a part of the unit’s core mission. New trends in manufacturing, including a focus on innovative work design (Appelbaum, 2000), have led

researchers to examine how the quality of manufacturing work flow can be improved by integrating teamwork and *supportive* human resources systems (e.g., supervisor support, job security, good wages, and career development opportunities) with the technical design of the work flow (Appelbaum, Bailey, Berg, & Kalleberg, 2000; Ichniowski, Kochan, Levine, Olson, & Strauss, 1996). Care even acts as a lubricant for other work processes. For instance, the effectiveness of knowledge transfer is facilitated when the source is accessible to, empathizes with, and validates the target (Argote & Ingram, 2000; Szulanski, 2000)—close relationships could improve the exchange of information (Darr et al., 1995). Despite our focus on care organizations, organizational leaders should focus on the dynamic system of interactions involved in care flow to enhance the flow of other organizational phenomena, as well.

Helping bridge research to practice

Positive psychology has highlighted new organizational directions for identifying and unlocking the value provided by the people working in organizations (Seligman & Csikszentmihalyi, 2014). At a fundamental level, managers who consider the dignity and individuality of employees in organizations can help members to attain their ideal selves. If there is a mismatch, so that employees do not receive care, then care flow is likely to become stagnant. For example, campaigns emphasizing “the customer is always right” can lead employees to feel ineffective and uncared for, limiting their ability to provide care to others. At the same time, teachers huddled together in the teachers’ lounge providing support to each other while students are unsupervised, also contribute to a lack of care. Care flow must operate so that caring for employees is not seen as at odds with caring for consumers or meeting business demands.

The care flow model highlights a few practical tactics for enhancing the effectiveness of care flow. First, managers should consider both the generation and spread of care in organizational systems. Separating the two concepts provides new insight into how much care an organization needs and who has access to it. Staffing levels can play into this to some extent—managers should ensure that there are enough formal caregivers to spread care and make it available to those who need it. However, managers also need to consider the quality of care generated between caregivers and care recipients. When caregivers are identified as being very good at providing care, they sometimes become the default

caregiver for difficult care recipients. If not managed properly, this can contribute to burnout, or to unrealistic expectations where good caregivers are expected to perform at a much higher level than their less effective peers. Managers can recognize good caregivers and reward their efforts.

Second, organizational systems must be designed to allow the three stages of the care flow process to occur. Unlike manufacturing contexts, care is inherently relational and emotional. To be effective, caregivers and care recipients need time to navigate their idiosyncratic relationships, anticipate others' readiness to engage, co-produce care, and then replenish care when the interaction concludes. For each stage of the model, we highlight tangible mechanisms through which caregivers and care recipients might collectively develop caring systems. These involve (1) improving anticipation through the development of transactive memory systems and a shared collective mind; (2) engaging in co-production through the development of a strong organizational culture and a shared collective efficacy to care; and (3) replenishing the system through systems that encourage organizational resilience, and the development of collective job crafting. As Leana and Pil (2006) explained, students performed better when their teachers shared information and tactics for teaching more effectively. However, the organization also plays an important role in enhancing care flow. For instance, in health care, many organizations are developing systems (i.e., electronic health records) to better track and coordinate care for patients. They allow physicians to understand the holistic care received by the patients, and for patients to move through a complicated system. As such systems become more sophisticated, they can allow organizations to better understand and anticipate the needs of their care recipients and to allocate resources to those who require care.

Finally, organizational systems should be designed to allow for and encourage stickiness between caregivers and care recipients. Organizational cultures that recognize the unique needs of caregivers can develop systems to enhance the coordination of care. Dutton and Heaphy (2003) describe how high quality connections are subjectively experienced through vitality, positive regard and mutuality. Managers could work to build these sentiments to enhance care flow. For instance, managers could help to increase the vitality, or positive energy, in organizations by recognizing care and holding people

accountable for providing it at a high level. As employees and care recipients feel cared for, they may be better able to provide care for each other and for third parties. Rich connections within clusters can create spaces where people feel supported and valued—they generate more than enough care to address the needs of care recipients in the cluster. As they see their interactions regenerating care and yielding positive spill-over effects, the cluster could serve as a catalyst to find new areas in the organization to spread care to, either to reciprocate the care they receive (Blau, 1964), or simply to enhance the level of care around them. The desire to give and receive care becomes contagious so that if care is truly regenerative, then those creating care will want to share it with those who need it. In this way, clusters of care serve as an incubator for building care that will be desired by others and serving as catalysts to spread care during the replenishment stage. Future research should investigate the role of sub-groups in affecting the care available in the organization.

Our model provides a basis from which future research can examine care flow in organizational research. Future research should examine the patterns of care flow in organizations where care is essential to the mission and compare these patterns with other types of organizations. Studies are needed to examine the unique characteristics of care flow in organizations. For instance, despite the fact that efficiency models have been integrated into care organizations, these models do not address the emotional aspects of the job that are inherently less efficient and hard to measure. Our focus has been on the generation and spread of care, but research could consider how organizations with little or no care can build a care flow system from scratch. We assume that care organizations have some initial level of care flow, but what if they do not? What can managers do to produce care flow in the organization? Similarly, researchers should examine whether increased care flow spread links to various organizational outcomes, including high quality care, employee retention, organizational effectiveness, or employee outcomes, such as well-being or performance. Most importantly, research is needed to identify the benefits of care flow in organizations that provide appropriate care, including higher attachment and satisfaction. And the costs of not managing care flow: Turnover, burnout, conflict, safety violations, and accidents.

Conclusion

Our model suggests that care flow is the process by which caregivers anticipate, co-produce, and replenish care with care recipients. We suggest that organizations that can better manage their care flow will experience beneficial outcomes, including generating more care and increasing the spread of care throughout the organization. Our work brings together previously disparate research examining care and introduces a language with which to discuss care in the organizational literature.

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Figure 1. A Multi-level Model of Care Flow

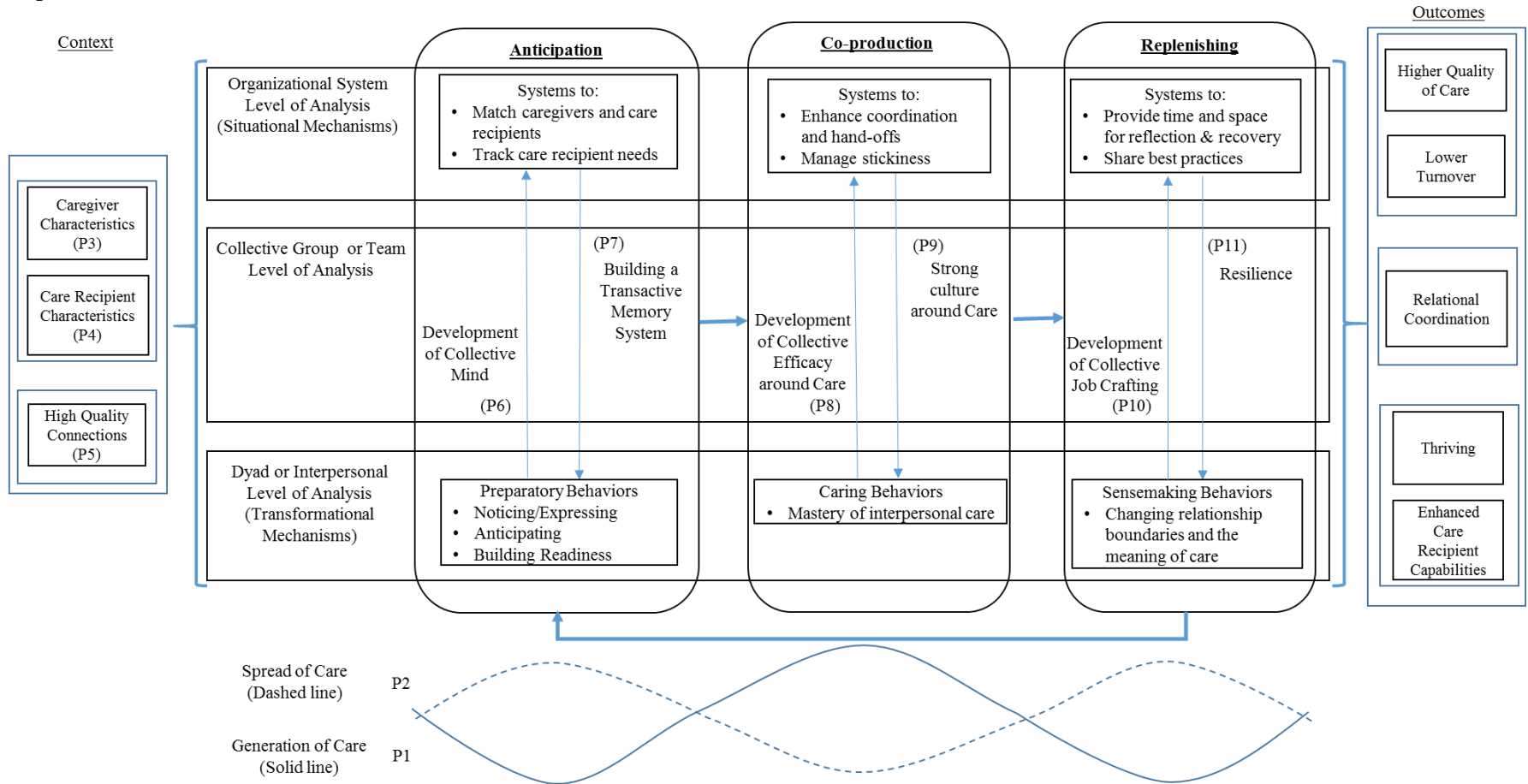


Table 1. *Comparison of Research on Care Topics*

	Care Flow Process	Compassion Organizing	Flow of Caregiving	Care work	Nursing Care in Health Care	Community Care	Ethics of Care
Representative Work	This paper	(Dutton et al., 2006; Kanov et al., 2004)	(Kahn, 1993)	(England & Folbre, 1999; Folbre, 2008a)	(Jenks, 1993; Swanson, 1993)	(McKnight, 1995)	(Noddings, 1984; Tronto, 2005)
Focus	How to generate and spread care in organizations	How to respond to human suffering, including noticing, feeling, and acting	How organizations replenish emotional resources lost during caregiving	How care workers provide caregiving to enhance the intellectual, physical, and emotional capabilities of recipients	How nurses complete their work, including instrumental care tasks, act as patient advocates and address socio-emotional needs (when there's time)	How the introduction of "professional" care resources can reduce community care resources	What caring entails and the responsibility of caregivers to engage in engrossment and motivational displacement to address patients' actual needs
Goal	to describe how to manage care flow in organizations	to use "elements of its current capability to improvise a process of organizing that provides help and assistance to members"	to allow subordinates to replenish their caregiving resources	to enhance the intellectual, physical, and emotional capabilities of recipients	to describe the role of nurses and improve their ability to do their jobs	to highlight the potential of "professional" care to limit existing community care resources	To understand the ideas of caring and ethical caring
Level of Analysis	Multi-level	individual and organizational	small group patterns that are mapped across the organization	occupational	Individual workers	community	Unequal caring relationships, where the carer gives care without expecting any in return

Table 2. *Care Flow Process: Spread and Generation*

		Research Questions	Effective flow	Detrimental Flow
Generation		How is care generated so that it is available when needed to meet specific needs of the recipient?	Caregivers and care recipients co-produce care, both groups generate more care resources, enhancing care recipient capabilities and increasing the availability of care for others	Caregivers try to make care recipients improve capabilities that are not important to the care recipients. Care recipients ask caregivers to provide all of their care, not allowing for the enhancement of the care recipients' capabilities
Spread	Diffusion	How readily available is care to everyone in the organization?	Caregivers and care recipients at all levels feel that the organization recognizes their needs and enables them to them feel heard, respected, and valued.	Caregivers and care recipients in one unit feel valued and culturally supported, while employees and clients in another unit do not.
Spread	Direction	How readily available is care to those with specific care needs?	Caregivers have the time and skill to recognize care recipients' specific care needs and to provide appropriate attention to address them	Care is diffused equitably, but specific socio-emotional needs are not given special consideration.

Table 3.

Comparing and Contrasting Three Types of Work Flow

Type of Flow		<u>Manufacturing Flow</u> (Taylor, 1947; Senge, 1990)	<u>Knowledge Flow</u> (Szulanski, 2000; Nonaka, 1994; Argote & Ingram, 2000; Orlikowski, 2002)	<u>Care Flow</u> (Folbre, 2008a; England, et al., 2002; Kahn, 1993)
Resources Flowing	Resource/ Capability	Raw materials; finished goods	Data / information; Cognitive skills / expertise	Instrumental and empathetic care in socio-emotional skills and capabilities (empathy, support, compassion)
	Location of Resources	A tangible object in the system or waiting in storage or inventory	In individuals and systems (e.g., experts; data bases; knowledge management systems)	In the relationships between individuals
Aspects of Flow	Characteristics of Flow	Assembly, Alteration-- process by which raw materials are transformed into tangible goods	Transfer--process by which ideas are transferred from one person/system to others	Co-production--process by which care is produced and transmitted through the interaction of caregivers and care recipients
	Sources of Flow	Physical capital-- machines in the manufacturing process	Technology and Human capital-- intelligence, expertise, skill	Human capital and Socio- Emotional capital-- understanding others' emotional needs and the appropriate responses to them
	Competitive Advantage	Efficiency, TQM, Appropriate work design	Innovation, Adaptation, Improvisation, Learning	Customization of care, Enhancement of the cognitive, physical or emotional capabilities of others
	Role of Stickiness	Refers to slow process	Refers to the difficulty with which rich information flows	Refers to the quality of the relationship
	Customer Interaction	Very little contact with the customer. Customer needs are not likely to directly influence the process.	Some contact with the customer (as in consulting). Customer needs may influence characteristics of the process.	A large amount of contact with the customer. Customer needs are integral to the process and directly contribute to the final outcome.