What is Negentropy? A Manuscript Dissertation on "Negentropic Leadership" for

Innovation and Change in Higher Education

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by

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Authorization to Submit Dissertation

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Abstract

Innovation in higher education is often seen as coming through outside-in or top-down sources rather than from actors within the institution. However, faculty-led innovation and leadership holds promise for addressing a range of contemporary issues in higher education while increasing faculty commitment and satisfaction at their institutions. Effective faculty innovation and change depend on supportive academic leaders. Yet, leaders are often unprepared or unable to provide this support. This dissertation uses the principles of negentropy from thermodynamics applied to higher education to explore how academic leaders can build and sustain a faculty of negentropic actors who release energy for innovation and change into their institutions through new ideas, programs, and initiatives. I use a manuscript dissertation format to examine three phases of the faculty lifecycle in individual chapter manuscripts. I explore the role of the leader in supporting established faculty as innovators to their institutions. Then I examine leaders' roles in the hiring and the early-career socialization process in building a faculty of negentropic actors. Finally, I study the role of doctoral education—particularly the shift to online doctoral education—in preparing and socializing future faculty members. The first two studies use a pragmatic qualitative study with interviews of high-performing higher education leaders. The third study employs an autoethnographic approach to understand my experience as a doctoral student given my choice for online doctoral education and the impacts of COVID-19.

Acknowledgments

I now know why acknowledgments are usually written last in the dissertation. Through the entire process and until the final few days of the doctoral process, I have received help from a range of people to get across the finish line. Many people have contributed to my success, and I wish to say a few words of thanks.

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I also owe thanks to the Academy for Innovative Higher Education Leadership (AIHEL) at Arizona State University, and the Western Interstate Commission for Higher Education (WICHE) Leadership Academy for supporting this study and providing access to their alumni networks.

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Chapter 1: Introduction

Where do the most innovative and enduring ideas for change at higher education institutions come from? Is it from senior leaders like presidents and provosts who are turning over at faster rates than almost any other position (Higher Education Publications, 2018)? Is it from external change consultants who seem to populate the market in ever-increasing numbers? Is it from mega-donors and philanthropists whose names grace the outside of buildings and chair positions? Each of these may have a place in creating innovation and change. But, arguably, the source of most long-lasting change at colleges and universities comes from the most long-lasting and vested members of these organizations: faculty members. Mahoney and Kim (2019), staff writers at *Inside Higher Ed,* recently asked an important question about whether higher education institutions are doing enough to create and nurture innovation from within their organizations rather than relying on ideas coming from the outside, stating, "Is higher education doing enough to make room for creating new knowledge about itself *from within*?" (para. 12, emphasis added).

Faculty members are well-positioned to lead change and contribute solutions to many of the challenges their institutions are currently facing. But they require the support of another key player in the organization. When Kezar and associates (2007) interviewed 75 faculty who had played a significant role in leading change on their campus about the factors that had contributed most to their leadership, nearly every participant mentioned a supportive academic leader—department chair, dean, or other senior administrator—working to support their leadership. They stated, "This supportive individual is more than a mentor; he or she is someone who can actually change working conditions to support faculty leadership" (para. 7). In other words, behind every successful faculty leader and innovator is an academic leader. Academic leaders sit at the confluence of resources, access, and the academic mission and carry enormous influence over whether faculty choose to be involved in leadership, service, and innovation for the challenges of their institutions.

However, supportive academic leaders at colleges and universities may be all too rare today. Kezar and associates (2007) continued, "Chairs are often overwhelmed by bureaucracy, untrained for the role, apathetically waiting out their rotations, lacking in sensitivity, or have forgotten what it was like to be an early career faculty member" (para. 9).

This dissertation will explore how academic leaders can empower faculty members to be the true leaders and change agents within their institutions. The study is born out of the idea that faculty, not administrators, are best positioned to initiate meaningful and lasting change, yet their participation in innovation and change is often hampered by professional pressures, organizational culture, and poor leadership support. In the highly structured environment of the modern academy, faculty need the ongoing support and facilitation of effective leaders to be the innovators, leaders, and change-makers needed by their institutions.

By applying a theoretical concept from thermodynamics called negentropy, I will explore the role of academic leaders—department chairs, deans, directors, and other senior leaders—at four-year institutions in hiring, socializing, and empowering faculty to be 'negentropic actors' who will contribute solutions to their institutions' challenges. In addition, I will examine how such a negentropic mindset is formed early in a career through reflection on my own doctoral experiences as an aspiring faculty member. I will explore each topic through an independent manuscript by using a manuscript dissertation (MDIS) format.

Background

Nearly every day, alarming accounts of current challenges in higher education appear in print and online media (see, for example, Bauman & Brown, 2019, Conley, 2019, Liming, 2019). These reports highlight challenges occurring in the funding, enrollment, demographics, cost, and delivery systems of higher education. The sources of these challenges are relatively well-known. The decreases in public funding in many states, along with increased regulatory and accountability models, have contributed to rising tuition costs and student debt (Gumport, 2012; Mortenson, 2012). Plateauing numbers of college-age students due to demographic change and declining birthrates have stressed enrollments of traditionally-aged college students, with many demographers predicting more significant drop-offs to begin around the year 2025 (Grawe, 2018; Hussar & Bailey, 2017). Heightened competition from alternative providers and non-degree programs has resulted in more complex choices for students (L. Gardner, 2019). Some observers have forecast significant closures or mergers in institutions in the decade ahead (Christensen & Eyring, 2011; Horn, 2018). Meanwhile, persistent economic uncertainties have increased cost and career sensitivities in college-attending students (Douglas-Gabriel, 2016). For example, according to the American Academy of Arts

& Sciences (2017), bachelor's degrees in the humanities now constitute only 5 percent of degrees conferred.

Beneath these stories of change are deeper narratives within U.S. society calling into question the value proposition of college for every American (American Governing Board, 2015), casting into doubt its social impact, and even challenging the credibility of the higher education profession (Freeman et al., 2016). Debate also continues to surround fundamental questions such as the purpose of higher education, its place as a public or private good, and the appropriate amount of support and oversight from policymakers and oversight bodies (Legon, 2019). Similarly, concern lingers over the differing success rate of various demographic groups (Humphreys, 2012; Morton, 2016). The COVID-19 emergency has intensified this conversation as virtually all college campuses closed their doors in the spring of 2020 and hastily moved to online delivery.

However, many positive signs of change are also seen across the higher education landscape. Advances have occurred in the access, delivery, and community impact of higher education. Technology and new delivery methods have increased access to new student populations such as older adult and returning students, which have helped to off-set enrollment losses (Seaman et al., 2018). Organizations and corporations are showing increased reliance on universities for training and development (Fischer, 2013), and universities are lauded for making substantial contributions to the creative economy of their regions (Florida et al., 2006). Not to be overlooked, worldwide enrollment in higher education continues to surge, from 100 million students in 2000 to 207 million in 2014 (United Nations Educational, Scientific, & Cultural Organization [UNESCO], 2017). Thus, while the financial and enrollment conditions of some higher education institutions are in question, opportunities for growth remain abundant.

Change in the higher education sector is nothing new—in fact, the very purpose of education is to *create* change. However, one could argue the challenges of this season of the twenty-first century require more than managing ongoing change but addressing "wicked problems" (Rittel & Webber, 1973). The complex problems facing higher education are constantly changing even as solutions are identified, and solutions to one problem often spawn issues in another. This disruption is reconfiguring roles and changing what it means to a faculty member and a leader in higher education.

Changing Roles of Faculty and Academic Leaders

The current fiscal and enrollment challenges of higher education institutions mean faculty and staff are under increased pressure to take broader responsibility for the issues affecting their campuses (Romano & Connell, 2015). This need was summed up in the recent statement of one university enrollment manager who implored for a more collaborative approach to problem-solving and for employees to take a more expansive view of their position in the organization:

> Disruption is here to stay. Campus leaders cannot change the wind direction, but they can trim the institutional sails. For too long, the admissions dean or enrollment manager had the lone hand on the tuition-revenue tiller. Now, it's all hands (campus leadership, faculty, staff, trustees, etc.) on deck, pulling the tactical lines in a coordinated, strategic fashion. (Conley, 2019, para. 19)

Conley's statement applies not just to enrollment but to all areas of the institution where innovation and collaborative problem-solving are needed to adapt to change, such as new online program development, industry partnership-building, the adoption of new technologies, and outreach and engagement to new markets of students. Not only is a collaborative effort needed, but a new *mindset* of shared responsibility and collective over individual interest is required.

Historically, full-time faculty have been socialized to perform the discreet roles of teaching, research, and service and to prioritize the attainment of tenure above service to the institution (Neumann & Terotsky, 2007). However, new market conditions are changing expectations for faculty. There is now a greater expectation that faculty engage in more non-traditional activities such as recruiting students, obtaining grant funding, developing industry partnerships, creating spin-off companies, and doing community outreach on behalf of their institutions (Lawrence et al., 2012; Romano & Connell, 2015). Carr-Chellman (2014) stated "the new academic who can market and recruit for their program is likely to always have a job, as long as they're not tenure track, even if they do not do much in the traditional realm of university life" (para. 8).

While some faculty are successful in these roles, for many others, these tasks are unfamiliar and uncomfortable and represent work they were not trained to perform in the academy. For example, in the area of enrollment management, "it is atypical for most faculty

to consider ongoing marketing and recruitment of new students a part of their job" (Carr-Chellman, 2014, para. 7). Faculty's doctoral training, early-career socialization, and incentive structure are not aligned with these aims. Further, it is unclear whether faculty are motivated to participate in these activities out of commitment to their institution or personal advancement.

Academic leaders—many of whom are former or current faculty—are also ill-equipped for their new responsibilities. Leaders play a key role in hiring, training, socializing, and motivating faculty in their responsibilities, yet they have been historically under-trained for even the basic duties of their positions (Gmelch & Buller, 2015; Selingo, 2016). This challenge only increases when extended to managing the innovative or entrepreneurial activities of faculty. In addition, several structural and philosophical barriers stand in the way of cultivating a shared problem-solving mindset among the faculty. Leaders lack the flexibility and discretionary resources to provide incentives to faculty (Holland, 1999, 2019). They also operate within a rigid tenure and promotion system that carries enormous influence over faculty behavior and tends to reward individual accomplishment over institutional service (Lawrence et al., 2012; Neumann & Terotsky, 2007). Finally, leaders also must contend with philosophical challenges such as the tendency of faculty to view themselves as independent contractors (Lawrence et al., 2012) and identify with their academic field rather than home institution (Freeman et al., 2017).

Thus, both leaders and faculty have numerous obstacles to overcome in developing a mindset of institutional investment and collective responsibility. Given that faculty are considered the 'backbone' of the institution whose investment must be obtained for any meaningful change to occur at the university (Freeman et al., 2017, para. 6), my interest lies in understanding how academic leaders can best facilitate and support a faculty mindset of institutional investment and innovation at each stage of the faculty lifecycle—from early in their socialization to later as an established academic. I explore this challenge through an emerging organizational development concept called negentropy.

Negentropy in Higher Education

Negentropy is a scientific construct with metaphorical application to higher education institutions. It stems from principles of thermodynamics and is generally understood as the *antithesis* of entropy (Ho, 1994). Whereas entropy is the breakdown of order, or decay, that

occurs in all living systems as energy disperses, negentropy is the intentional work to restore order to living systems. It is "purposeful work against the natural disintegration that entropy produces" (Carr-Chellman et al., 2019, p. 442). Negentropy permits living system to move to higher states of order and effectiveness through the reintroduction and integration of energy into the system.

Although the concepts of entropy and negentropy have been understood in scientific terms for some time, their application to organizational systems is more recent. Heckman and Montera (2009) explained how entropy occurs in schools through the breakdown of order over time and described how 'negentropic actors' can counteract this entropy by releasing energy to the system in the form of new knowledge and ideas. Carr-Chellman and colleagues have specifically applied negentropy to higher education institutions by exploring various challenges such as faculty members in engaging in online learning (Carr-Chellman et al., 2019), organizational training and performance, (Carr-Chellman, 2019), leadership development for university leaders (Freeman et al., 2018), and the university as a living system (Freeman et al., 2018). Figure 1.1 is a representation of how negentropy operates within an organization.

Carr-Chellman and colleagues (2019) discussed how 'negentropic actors' are key to counteracting entropy at higher education institution. Negentropic actors can emerge from anywhere, but they are generally understood to be faculty members or leaders whose work brings renewal into the system in the form of new ideas, programs, or initiatives. One way that negentropic faculty introduce energy is to view their job beyond typical boundaries and undertake "capitalistic activities" (Carr-Chellman et al., 2019, p. 442) such as recruiting students, creating online learning programs, or building partnerships. However, negentropic actions can also be smaller-scale innovations in teaching, research, or service that benefit the organization such as introducing a new teaching method, improving a departmental process, or contributing leadership to a policy change. The key is that negentropic faculty are oriented to the success of the organization—and not just personal success—by integrating their work with the needs and interests of the institution. Stated simply, "The negentropic professor begins and sustains their career with a focus on the survival of the institution as closely tied to their own career progress" (Freeman et al., 2017, para. 2).

However, the negentropic behavior of faculty members is often difficult to initiate or sustain without the support of academic leaders. Carr-Chellman and colleagues (2019) wrote, "Leadership has to not just allow or encourage new offerings; leadership needs to help direct and focus these offerings in negentropic ways — ways that produce more integration and energy" (p. 442). The role of leaders requires reimagining traditional roles, processes, incentives, and resources to enable the work of negentropic actors. Understandably, there are certain risks for leaders in encouraging negentropic behavior such as accepting a degree of chaos (Brafman & Beckstrom, 2006) in return for creativity and creating potentially unethical situations with faculty members (Carr-Chellman et al., 2019). Thus, leaders have a challenge to learn how to foster, support, and sustain negentropic behavior with "trust, transparency, and alignment with faculty goals" (Freeman et al., 2017).

Purpose of The Study

Recent work on negentropy in higher education has largely focused on the perspective of faculty members in adopting negentropic mindsets, such as through online learning (Carr-Chellman et al., 2019), early-career socialization (Freeman, Kitchel, et al., 2019), and organizational training (Carr-Chellman et al., 2020). This study addresses the *administrative* side of negentropic behavior through examining the leadership characteristics and behavior that contribute to faculty negentropic mindsets. As such, it also fills a need in the literature for understanding how academic leaders can manage and direct the new range of non-teaching and non-research duties of faculty members. Despite the broad research in the areas of faculty commitment (Al-Hussami et al., 2011; Becker et al., 2009; Carver et al., 2011; Daly & Dee, 2006), faculty service and citizenship (Holland, 1999, 2019; Lawrence et al., 2012; Neumann & Terotsky, 2007), faculty engagement (Hendricks et al., 2018), and academic leadership best practices (Bolman & Gallos, 2011; Gmelch & Buller, 2015), several gaps remain in our understanding. The question of how to support the work of faculty in their new scope of duties to innovate, create new programs, and engage reach new markets—all within a framework of collective interest—has received little attention. In addition, minimal research has focused on the relationship between leadership practices and the development of faculty mindsets.

The aim of my study is to understand the role of the academic leader in helping facilitate and support faculty negentropic mindsets. There are at least three phases in the

lifecycle of a faculty member where the development of mindset is most pronounced—the socialization of doctoral students, the hiring and training of new faculty, and the ongoing training and motivation of existing faculty. Figure 1.2 represents this development process.

Academic leaders have a role to play in each of these phases. Leaders are central to the identification, hiring, and on-boarding processes of new faculty. Leaders have responsibility for the ongoing training and work environment of current faculty members. And, though less directly, leaders can influence the socialization process of future faculty as doctoral students. Overarching these dimensions is the need to understand how leaders support negentropic action without exploiting faculty and while remaining responsive to the deeply-held values of autonomy, flexibility, and equity that have been shown to by key to greater faculty productivity and commitment (Chen & Chiu, 2008; Daly & Dee, 2006).

Research Questions

I seek to understand the relationship between the practices of academic leaders and the development of negentropic mindsets in faculty members at four-year institutions of higher education. Specifically, my research addressed these research questions centered on each critical phase of a faculty member's development.

- How do high-performing academic leaders perceive their support for negentropy among current faculty members?
- How do high-performing academic leaders describe their strategies for hiring and socializing potential negentropic actors who will contribute leadership and innovation early in their career?
- What is the role of intentional socialization in the preparation of online doctoral students to be negentropic faculty members?

Procedures

This dissertation uses a manuscript dissertation (MDIS) format that replaces a single body of findings with multiple peer-reviewed articles. The MDIS format is recommended for individuals pursuing an academic career by encouraging opportunities for article development and publication (Freeman, 2018). The document consists of three independent manuscripts centered on the theme of negentropic leadership and the development of a negentropic mindset at four-year institutions.

Manuscript 1. This manuscript focuses on the work of academic leaders in creating or sustaining a culture of negentropy among existing faculty members. It addresses the inherent challenge that faculty energy flows away from the institution over time as faculty turn their attention outward and develop an "independent contractor" type relationship with their institutions. This explores how academic leaders best support and facilitate negentropic behavior with current faculty members. I used a pragmatic qualitative approach to conduct remote phone or videoconference qualitative interviews with academic leaders at the mid- to senior-level at four-year institutions. These interviews explored the leadership philosophy, organizational development practices, motivational strategies, and evaluation standards leaders use to support negentropic behavior.

Manuscript 2. This manuscript focuses on building a negentropic faculty through the processes of hiring and early career socialization. It addresses the challenge of identifying and hiring potential negentropic actors and then on-boarding and socializing them in way that supports and not suppresses this energy. I also used a pragmatic qualitative approach to explore the work of academic leaders in identifying and hiring negentropic actors into faculty positions. Like Manuscript 1, the primary method for data collection was remote phone or video-conference qualitative interviews with academic leaders at four-year institutions. Interviews explored the recruitment and hiring strategies, on-boarding philosophies, and training and socialization practices of academic leaders in order to build a faculty of negentropic actors.

Manuscript 3. Manuscript 3 is an autoethnographic exploration of my own intentional, or "negentropic," socialization as an online doctoral student in preparation for a faculty career. I used an auto-ethnographic methodology (Bhattacharya, 2017; Ellis, 2004) to understand how my online experience affected my preparation for service as a faculty member. My auto-ethnographic methods included composing and answering self-questions and reviewing personal documentary data with regard to my doctoral experience (Savin-Baden & Major, 2013). My study utilized a social constructivist paradigm by reflecting on personal and cultural experiences.

Sample Selection. Sample selection for both Manuscripts 1 and 2 occurred through a combination of purposive and convenience sampling (Creswell, 1998). Interviews were selected from a population meeting the criteria of (a) being a current or former academic

leader with responsibility for faculty supervision (e.g. department chair, associate dean, dean, center director) and (b) having responsibility over faculty noted for their involvement in the development of new online programs, industry partnerships, major grants, spin-off companies, outreach programs to new populations, or other negentropic initiatives. I reached out to established networks of academic leaders at the Academy for Innovative Higher Education Leadership at Arizona State University (ASU) or the Western Interstate Commission for Higher Education (WICHE) to access leaders with experience supporting negentropic behavior. These participants were asked for recommendations of other high-performing academic leaders who fit the description of supporting negentropic behavior. Interviews occurred with 11 academic leaders, consistent with minimum recommendations for qualitative interviewing to achieve data saturation (Guest et al., 2006; Guetterman, 2015; StatsWork, 2019).

Analysis. Data from the interviews was analyzed and coded following a constant comparison approach (Glaser & Strauss, 1967) with a list of *a priori* codes drawn from the literature and emerging codes added during analysis. Codes were then grouped by category and eventually by themes and sub-themes for findings. In article 3, my analysis relied on ethnographic analysis to make connections to the broader social and cultural context (Savin-Baden & Major, 2013)

Definitions

The following terms and definitions are operational throughout the study:

Academic Leaders: Employees of higher education institutions with supervisory responsibility for faculty and academic staff (Bolman & Gallos, 2011). Common position titles include dean, associate dean, assistant dean, department chair, or center director. For purposes of this study, I will not include more senior positions such as provost, vice president, or president who have more generalized supervision of academic staff and the organization unless these individuals have previously served in the above roles.

Faculty Members: Academic personnel at higher education institutions with primary responsibility for instructing and/or developing curriculum for instruction. This includes members of various faculty employment classifications such as tenured faculty, pre-tenured faculty, non-tenure track teaching or clinical faculty, and adjunct faculty. It also includes

faculty serving across various delivery modes such as online, hybrid, and residential (Kezar, 2013).

        Higher Education Institution: A degree-granting institution of higher learning certified to operate by an accreditation agency. For purposes of this study I limit higher education institutions to four-year colleges or universities in the United States (Bastedo, 2012).

        Negentropy: A theoretical construct adapted from thermodynamics. It represents the focused work to counteract the forces of entropy and restore order to living systems (Carr-Chellman et al., 2019). Applied to higher education organizational systems, negentropy is the release of energy into an organization through new ideas, knowledge, and activity that moves the institution to a higher state of effectiveness and order.

        Mindset: Choice and attitude regarding one's personal circumstances. It is the collection of thoughts and beliefs that make up one's mental outlook and directs one's responses to future circumstances and events (Meier, 2019). It is the "inner game" through which we make sense and meaning of our experiences (Gallwey, 2001).

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Significance

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        This study contributes to the ongoing search for solutions to financial, enrollment, and other institutional challenges facing many colleges and universities throughout the United States. It also adds to broader debates on the changing roles of faculty and leaders in higher education and the need to restore balance between individuality and collective responsibility among faculty members and their relationship with the institution. Various rifts between faculty and administration have arisen due to tension between the individual good as seen through individual faculty achievement and the collective good as evidenced through institutional citizenship, service to the institution, and negentropic behavior (Bess & Dee, 2014; Lawrence et al., 2012).

        Because new challenges continue to affect the academy, what today is a worry about finances and enrollments may tomorrow be concern for subjects outside of our current consciousness. Thus, a focus on negentropic mindset more than specific solutions is needed for long-term capacity-building, adaptation, and problem-solving in the academy. Yet, the current systems, structures, and philosophies that underlie faculty development and the tools at the disposal of academic leaders to support and incentivize faculty are limited in scope.

Additionally, neoliberal forces outside the control of faculty such as rankings, competition for institutional prestige, and globalization have created unhealthy expectations and realities for those who work in higher education (Museus, 2019; Squire & Nicolazzo, 2019).

I aim for this study to yield a better understanding of the association between good leadership practices and the development of negentropic mindsets among faculty. This knowledge enhances our understanding of how to improve the vital relationship between faculty members and leaders and bring insight from the theoretical to the practical level on ways academic leaders can hire, socialize, incentivize, and support faculty for their new set of responsibilities. It also helps us understand how to help faculty gain a stronger identification with their institutions earlier in their career.

Limitations

This study is limited to the perspectives of academic leaders accessible via purposeful and convenience sampling methods. Participants were primarily chosen through self-selection or by nomination of a colleague or acquaintance. This constitutes a potential selection threat as I was not able to state with certainty that participant responses represented the mean or the maximum variation of views on this topic. However, data was collected until saturation was reached within my sample. The study was also constrained by limited resources for conducting face-to-face interviews and the timing of the interviews due to COVID-19 precautions. Interviews occurred over video-conference due to cost and social distance requirements. Although it is unlikely any social interaction threats significantly distorted the data, I took steps such as using a standard question list and conducting member checking to ensure participants in both modes could fully answer the interview questions. Another limitation is that participants self-reported their experiences to my questions. Finally, limitations of this qualitative study also include my personal bias as a former academic leader and administrator. To be transparent in my position, I offer my positionality statement in the next chapter.

Organization

This study is organized into 7 chapters. Following this introductory chapter, chapters 2 and 3 is a review of the literature and an explanation of the methods and procedures used to guide this study, respectively. These apply collectively to all three articles. Next, per the MDIS format, chapters 4, 5, and 6 are separate manuscripts for each research question.

Chapter 7 is a generalized discussion of all three studies and my personal reflections. Tables, and figures can be found at the end of each individual manuscript in chapters 4, 5, and 6. References are found comprehensively at the end of the document.

Appendix: Figures

Figure 1.1: Negentropy in Social Systems
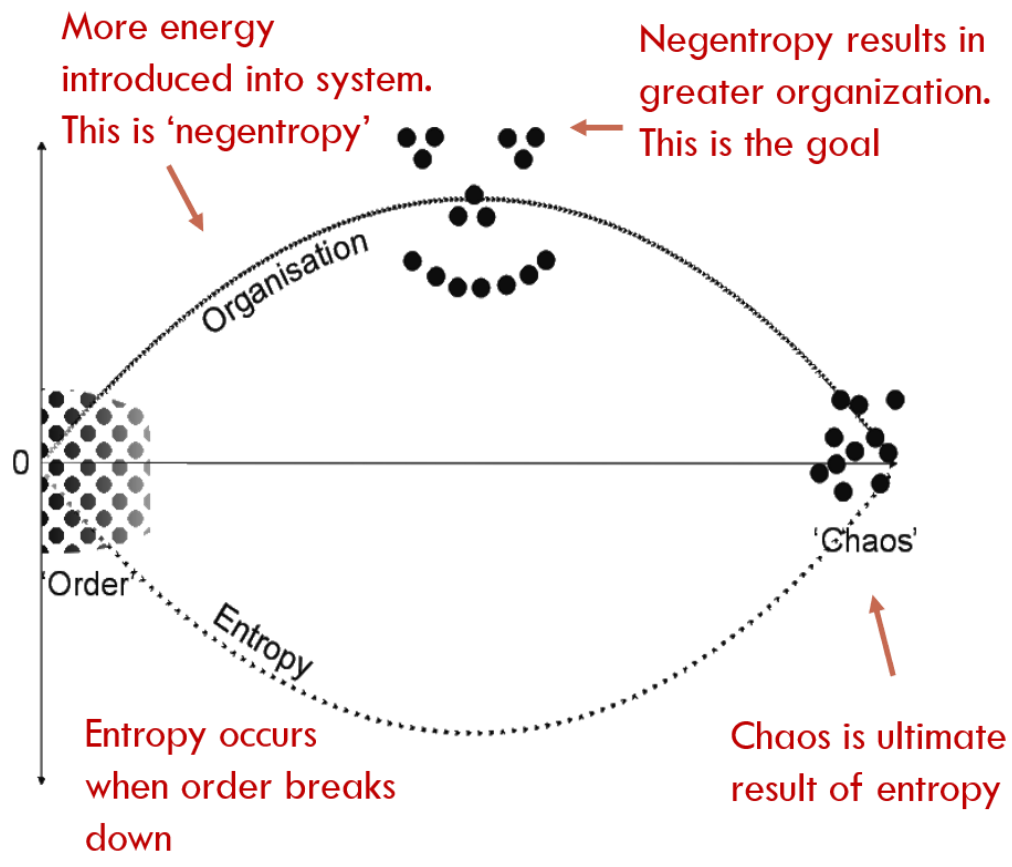
Figure adapted from: Gunther, F. (n.d.) "Entropy." Retrieved from
https://www.holon.se/folke/kurs/Distans/Ekofys/fysbas/LOT/entropy.shtml

Figure 1.2: Lifecyle of Faculty Mindset Development

Chapter 2: Literature Review

The challenges of supporting faculty in their new set of responsibilities are situated within a large body of research related to the organization of higher education, faculty motivation, and academic leadership. A much smaller, but growing selection of research addresses negentropy as an emerging concept in the study of higher education. Accordingly, this review of the literature addresses four pillars of knowledge: 1) an overview of higher education organizational theory, 2) a review of findings on faculty motivation, 3) discussion on best practices in academic leadership, and 4) a deeper introduction to negentropy as a construct.

Higher Education Organizational Theory

Organizational theory provides a useful vehicle to understand both the organizational and individual aspects of behavior within institutions. Gumport (2012) stated that organizational theory offers a "deep reservoir of theories, concepts, and methods… to model—and thus simplify—complex behavior" (p. 22). It can be argued that few organizations are in need 'simplifying' complex behavior as higher education institutions and systems, which continue to expand in scope and purpose in the twenty-first century (Altbach, 2014; Economist, 2018). Higher education institutions tend to operate as living and independent organizational systems. This is especially evident in the U.S. context where, unlike other countries with centralized policy and decision-making systems, the decentralized nature of government and economic structures produces increased autonomy and differentiation between organizations.

At the organizational level, organizational theory provides understanding of the structures, systems, roles, and missions of higher education institutions. At the individual level, it also gives insight to understanding human behavior within colleges and universities, which has been depicted as anything but simply orderly or rational (Weick, 1976). In this section, I will first explore the historic role organizational theory has played in higher education, then provide an account of contemporary challenges to the organization of higher education, followed by a discussion of new thinking of organizational studies and its role in the field.

Role of Organizational Theory in Higher Education

Numerous attempts have been made to frame the organizational life of higher education institutions through theory (Bess & Dee, 2008, 2012; Birnbaum, 1989; Hearn & McLendon, 2012). Hearn and McLendon (2012) discussed how views on organizational behavior in colleges and universities have changed over time in three overlapping phases. They described how scholars first invoked Weber's "ideal-type" bureaucracy (Weber, 1946) to view universities as centralized entities where decision-making occurs in hierarchical, top-down fashion. Scholars then began to acknowledge that the "ideal-type" bureaucracy may not adequately capture the reality of higher education organizations due to norms of shared governance and collegiality in higher education (Gumport, 2012). Rather, a "professional bureaucracy" model was more likely, in which individual actors who are experts in their field retain autonomy over their work (Clark, 1970; Mintzberg, 1979) and organizations are guided by "firmly embedded values [that] shape the organizations' identities and help them form shared accounts and common beliefs" (Hearn & McLendon, 2012, p. 48). Finally, a third model of organizations began to take shape in the 1960s and 1970s that focused on the use of political power (Baldridge, 1971). The political model emphasizes the role of interest groups, coalitions, and negotiation in policy and decision-making.

Instead of one model taking priority over another, it is likely that all three are in operation at any given time depending on the vantage point of the observer. Bess and Dee (2008, 2012) characterized the behavior of colleges and universities using three paradigms of positivist, social constructionist, and post-modern perspectives and showed how common challenges could be perceived through each diverging lens simultaneously. Similarly, Birnbaum (1989) stated that higher education institutions are "cybernetic," where the bureaucratic, collegial, political, and anarchical systems all operate concurrently with sensing and self-correcting functions built in. Ultimately, Hearn and McLendon (2012) concluded that "no single theoretical lens affords definitive insights" (p. 61) but each are critical to understanding higher education organizations.

With these organizational models in the background, early higher education scholars have also developed various theories—often characterized by catch-phrases—to depict college and university behavior. For example, Cohen, March, and Olsen (1972; 1976) described the operation of a university as "organized anarchy" where ambiguity and

confusion exist in decision-making processes due to "a variety of inconsistent and ill-defined preferences" of decision-makers (Cohen et al., 1972, p. 1). Cohen and colleagues (1972) then developed the "garbage can" model of organizational decision-making to show how "various kinds of problems and solutions are dumped by participants as they are generated" (p. 2). In this view, solutions at universities go in search of problems, and participants go in search of opportunities to contribute expertise and raise their status in the organization.

Similarly, Weick (1976) developed the concept of "loose coupling," which describes how units within higher education organizations are highly decentralized and exhibit weak interdependence among units. This decentralization leads to inefficiencies, duplicate resources, and minimal coordination between organizational sub-units. While Weick argued that such systems can be inefficient, costly, and difficult to lead, he also stated they benefit from being "highly adaptive, mutable, and innovative… and [having] a capacity for isolating and halting the failures of one part of the system from spreading to other parts" (p. 54). In other words, the decentralization and flexibility inherent in higher education allow institutions to deal effectively with uncertainty. The concept of loose coupling also introduced the idea that rationality and non-rationality can exist simultaneously in any organization (Hearn & McLendon, 2012).

Tierney (2012) applied loose coupling to modern higher education institutions, arguing that higher education institutions have numerous advantages to creativity at the organizational level. He reasoned that institutions consistently have excess amounts of human resources relative to their demands, leading to surplus capacity and "slack time" for creativity. They also often deal with problems in which several ways and means will produce the desired ends. However, creativity is often inhibited by other elements of the organization, such as the highly dispersed nature of networks, the absence of regulations, and lack of control. This means that campus units can engage in "planned unresponsiveness" when unwilling to change. Thus, change can be slow.

Scholars have also pulled from various other disciplines such as social and behavior sciences, political science, and psychology to understand the behavior of higher education organizations (Dressel & Mayhew, 1974). While these frameworks offer significant insights to organizational theory, it has also been noted by more than a few scholars that higher education is lacking its own theories and models to explain the complex behavior of its

institutions (Bastedo, 2012; Dressel & Mayhew, 1974; Fife & Goodchild, 1991; Gumport, 2012; Thacker & Freeman, 2019). This has led the study of higher education to be regarded as a multi-disciplinary field without a "clear, intellectual, methodological, or disciplinary center" (Altbach, 2014, p. 19). In particular, the non-rational elements of higher education organizations have not been well-explored by scholars (Gumport, 2012). Thus, Bastedo (2012), Gumport (2012), and others have called for more neo-institutional theory that focuses not only on visible regulatory regimes but also on the "normative and cultural-cognitive elements" (p. 34) that shape the behavior and decision-making in an organization.

Contemporary Challenges to Higher Education Organizations

Many contemporary challenges to higher education institutions continue to test the strength of these organizational models. These issues are well-known and were summarized in Chapter 1. In fact, these challenges are often expressed together as a trilogy of woes: diminishing public funding, looming demographic change, and the changing preferences of college-going students (Conley, 2019; Martin, 2002). In addition, the increased oversight and accountability of higher education institutions out of concern for the cost and outcomes of higher education has been a growing theme of the twenty-first century (Gumport, 2012). Thinkers like Levine (1997) have argued that higher education has now moved from a growth industry to a mature industry with the accompanying drawback of government support and increase in accountability.

The need for large-scale change at American higher education institutions has continued to appear in literature and policy circles. The U.S. Department of Education's Spellings Commission (2006) pointed out that urgent change was needed in higher education institutions: "U.S. higher education needs to improve in dramatic ways.… [It] has become a mature enterprise, increasingly risk averse, at times self-satisfied, and unduly expensive" (p. vi). The Commission's authors predicted twenty-first century higher education institutions would need to be increasingly open, collaborative, and global in their organization of knowledge. For example, curriculum would need to become increasingly interdisciplinary, and universities would need to be organized less as discrete units and departments and more as "hubs" of organizations around current problems. Scholars such as Ramaley (2014) also predicted as much:

The university must create new forms of infrastructure to support and sustain these new working relationships while encouraging faculty and students to seek out integrative and collaborative opportunities that address today's complex problems. These new hubs of activity and sources of technical support are being staffed by a new class of professionals who consider themselves scholar-practitioners and boundary spanners. (p. 18)

Scholars and commenters have forecasted that the open sharing of knowledge would lead to the increasing consolidation of higher education institutions. Christensen and Eyring (2011) applied disruption theory to higher education to predict that up to half of colleges and universities would go bankrupt, close, or merge in the coming two decades, a prediction Christensen has repeated on other occasions (Horn, 2018). Others have envisaged a higher education ecosystem in which students "unbundle" their college education into disparate courses and experiences (Craig, 2015; Selingo, 2013). Ramaley (2014) also projected, "Institutions will build extensive collaborative partnerships with other universities, sectors of society, local communities, and even nations to generate knowledge, address societal challenges, and create learning environments in which to educate their students" (p. 15).

Similarly, the rise in external involvement in higher education institutions may be shifting the aims and purposes of higher education. Some scholars have argued that the function of higher education has moved from a conservator of knowledge to a knowledge industry, one which is emmeshed in the constant pursuit of revenue (Bastedo, 2012; Gumport, 2000). Notions of academic institutions transforming into "entrepreneurial universit[ies]," blending capital and research, generating revenue, and engaging in technology transfer and spin-off companies are increasingly common (Etzkowitz et al., 2000). Part of the reason for this shift may well be lower state and government support. But scholars have also pointed to the growing neoliberal pursuit of national rankings and prestige that motivates the pursuit of research funding, greater selectivity, and investment in costly amenities (Pusser & Marginson, 2012).

Perhaps most startling, such macro-challenges to higher education organizations may be altering the perceptions of students, parents, and the general public of the purpose and utility of post-secondary education. Increases in tuition, rising student debt, and involvement of external actors have perpetuated public distrust in the purpose and need for higher

education (Lawrence & Morris, 2019; New America, 2017). Further, higher education may be increasingly perceived as solely preparing students for vocations rather than cultivating the development of "capable and cultivated human beings" (Mill, 2011, p. 186). This view is shared by prominent thinkers and employers in the economy. For example, in May 2019, Apple's chief executive Tim Cook stated, "I don't think a four-year degree is necessary to be proficient in coding. I think that is an old, traditional view" (Conley, 2019).

However, others have cautioned that discussion of change and demise of U.S. higher education not be exaggerated. For instance, almost a decade after initial predictions of consolidation, some institutional closures and mergers have occurred, but to a smaller extent than imagined (Newton, 2018). Buller (2015) argued that despite threats to the current organizational models of higher education, traditional four-year higher education institutions will survive as the "sleeping giants" of the sector. Buller claimed these institutions would survive because of their local expertise, and they will learn *from* disruptive innovators, rather than being undermined by them. Buller stated, "the concepts of disruptive innovation and unbundling the college experience come perilously close to eating our seed cord [*sic*]." As Ramaley (2014) explained, "We have faced times like this before, and our imagination, creativity, and commitment to the common good have helped us through" (p. 8).

New Conceptions of Organizational Theory

How do contemporary challenges in higher education affect our thinking about organizational theory? The study of higher education—and education more generally—is known to be a "low consensus" field (Gumport, 2012, p. 21). Thus, it is unlikely scholars will consistently agree on the best ways to utilize organizational theory or which theories to use at all. Organizational challenges in higher education are complex, or "wicked" (Ramaley, 2014), and will continue to change as they are solved (Rittel & Webber, 1973). However, certain new approaches to the study of higher education organizations have seemed to gained traction.

First, regarding which topics deserve our attention, some scholars have suggested a return to more fundamental questions and problems in higher education. Bastedo (2012) argued the "nearly exclusive focus on externally driven pressures and processes" (p. 8) in higher education research has resulted in an overemphasis on environmental questions such as policy, governance, and top-level leadership to the detriment of fundamental internal and

local topics. For example, the issues of organizational elites such as presidents, trustees, and policy-makers have received far more attention from scholars than challenges affecting mid or low-level administrators. And questions of effective teaching and learning are increasingly overlooked (Bastedo, 2012). Consequently, "administrators increasingly find the academic study of organizations distant from their problems, concerns, and leadership aspirations" (Bastedo, 2012, p. 9). In practical terms, this means directing scholars to look more at issues of "educational work and practice" such as student learning, college costs, faculty development, equity, and student access and completion.

Bastedo (2012) also recommended scholars better connect the "micro-level behavior of students, faculty, and administrators" with "macro-level outcomes" (p. 10). For example, this could occur by analyzing the psychological models and incentive structures of faculty based on administrative policies or expectations. He urged scholars take greater care in analyzing how higher education differs from other sectors with respect to organizational incentives and preferences, stating we need to "deepen… our understanding of higher education as an organization that cannot be duplicated by scholars from other traditions" (Bastedo, 2012, p. 10).

Another new approach to organizational theory has been described as moving beyond the "strategic paradigm" to embrace both rational and non-rational actions of institutions (Gumport, 2012). The strategic paradigm refers to the tendency of organizations to address their needs strictly "within a framework of rationality and action" (Gumport, 2012, p. 30) and is reflected in leaders conducting visible, strategic initiatives in response to threats. However, Gumport (2012) critiqued strategic approaches as "overly deterministic" (p. 20) by presuming that organizational or individual behavior can be pre-determined by external events or conditions. Instead, she sees potential in other developments in organizational studies that focus more on the "normative and cultural-cognitive elements" (p. 34) that shape the organizational behavior. These include history, legacy, unique cultures, value systems, and the "myth and ceremony" of the institution (Gumport, 2012). Neo-institutional theory, social movement theory, and positive organizational scholarship are examples of such approaches (Cameron et al., 2003).

Understanding organizational culture is another way to address the "nonrational and nonstrategic" elements of organizations (Gumport, 2012; Tierney, 2012). Bastedo (2012)

perceived a "sharp decline" in studies about organizational culture and climate in the prior two decades (Bastedo, 2012). Although research into organizational culture in higher education has yielded a "confusing morass of conflicting findings" (Tierney, 2012, p. 167), a common theme across all findings is that organizational culture is shaped not only by the formal but the informal governing mechanisms of an institution. Hearn and McLendon (2012) suggested that external interactions, hiring, and socialization processes are all influential in this shaping process. Culture is also interpretive (Hallett, 2003). Therefore, managers and leaders are cautioned to be aware of how various aspects of the organization are perceived (Martin, 2002).

Finally, one growing area in the non-rational side of organizational theory is the study of power. Until recently, positivist, functionalist, and entrepreneurial approaches have dominated the study of higher education institutions (Bastedo, 2012; Pusser & Marginson, 2012) while normative conceptions have been less explored. The work of Baldridge (1971) on the "political university" and Bourdieu and Passeron (1977) on reproduction in education were perhaps early exceptions to this rule. Bourdieu and Passeron argued higher education institutions have the ability to perpetuate the status quo in unseen ways due to internalized norms in the academy and society. The study of power seeks to understand what "motivates individuals to do something they would not normally do" (Kretovics, 2020, p. 4). It also seeks to unpack such implicit norms and biases in the institution (Lukes, 2005). Pusser and Marginson (2012) stated, "Power is the elephant in the room. It would seem to be too consequential to miss, but many do" (p. 91).

In the last quarter century, scholars have explored questions of structural inequalities, racial (Iverson, 2007), gender (Metcalfe, 2015), and other biases (McDonough, 1997; Morrow, 2006), and power relationships as applied to higher education (Pusser, 2015; Pusser & Marginson, 2012). Numerous frameworks are now available to scholars to analyze organizational behavior through the lens of power. For example, Ladson-Billings and Tate (1995) developed critical race theory (CRT) to demonstrate how race emerges in the study of educational inequity. Patton (2016) extended this concept to developing a critical race theory in higher education (CRT-HE). Scholars such as Wolfe and Dilworth (2015) and Eckel and Hartley (2011) have applied these frameworks to specific equity challenges such as the low representation of African-American higher education administrators. More recently Kretovics

(2020) examined how leadership, management, and power are interrelated and demonstrated (various archetypes and symbols of power in a higher education institutional setting) how power can be wielded for positive or negative outcomes. Power is not an inherently negative construct, it reflects the creative work of administrators and leaders

In addition, scholars have increased their focus on how power manifests itself in the neoliberal structures in the academy. The critical works of Slaughter and colleagues (Slaughter et al., 2015; Slaughter & Leslie, 1997; Slaughter & Rhoades, 2004) on academic capitalism have been among the most-cited in postsecondary research. Rankings are a visible neoliberal structure that Pusser and Marginson (2012) argued reflect power relations in higher education: "What is ranked and what is not ranked provide a window into contemporary power in higher education" (p. 98). Ehrenberg (2000) showed how rankings regimes implicitly direct what metrics are used at the institutional level, which influences administrator and faculty behavior. Rankings encourage selectivity and exclusivity and incentivize quality research over teaching, whereas the public goals for higher education include increasing access, enhancing diversity, or boosting affordability (Pusser & Marginson, 2012). Pusser (2015) further showed how neoliberal structures of the academy are evident in higher education policy and decision-making at the institutional and systems level. Although research in this space is growing, the need persists to understand power and the larger neoliberal forces at work in the academy.

In summary, scholars generally agree that organizational theory is needed to help understand both institutional and individual challenges in higher education. Higher education organizations are framed by both formal and informal, and rational and nonrational mechanisms that need to be understood to address challenges in the field. While low consensus exists on which frameworks are most correct, it may be concluded that scholars of higher education need to be acquainted with a multiplicity of perspectives on these challenges.

Faculty Motivation

The second pillar of knowledge needed for this study is understanding the factors underlying faculty motivation. Faculty have been identified as the "backbone" of higher education institutions (Freeman et al., 2017, para. 6) through whom any meaningful reform

efforts in the academy must take place. I will explore changes to the current role and standing of faculty and then review research on faculty values and reward structures.

Current Role and Standing of Faculty

Faculty at four-year institutions exist as a separate class of employees in higher education from staff and administrators. Faculty have been compared to "independent contractors" who enjoy autonomy over their work due to their specialized expertise (Lawrence et al., 2012). While the sentiment may differ for non-tenured or contingent faculty, full-time faculty largely regard themselves as peers, rather than subordinates, to key leaders and policy-makers at the institution. Brubacher (1970) stated, "Faculty, especially, are not merely employees but also professionals, that is, partners" (p. 114) to administrators. Thus, many scholars have observed that faculty prefer to work in a professional bureaucracy model where academic values, rather than hierarchical control, guide organizational decision-making (Clark, 1987; Gumport, 2012; Hearn & McLendon, 2012). Tierney (2012) observed that faculty life is not simply a subculture of the institution but represents a "culture unto itself" (p. 173).

However, scholars and commentators have observed that the nature of faculty life has changed in many ways since modern norms were formed during the post-War era in higher education. Work in the twenty-first century academy has been termed the "ivory sweatshop" (Wilson, 2010) due to intensifying pressures around research, publication, and resource generation. Concerns about workload have been cited as factors in faculty turnover (Bozeman & Boardman, 2013; Ryan et al., 2012) as well as in the happiness and satisfaction of faculty (Kaufman, 2007; Ryan et al., 2012). These pressures have also created a more business-like environment among colleagues. Long-time faculty member Wilson (2010) observed that campus social and collegial life had suffered, with fewer social outings and less overlapping time on campus due to flexible work schedules. "Now the Monday/Wednesday people never see the Tuesday/Thursday people," (para. 37) she said. Consequently, there are fewer unplanned "collisions" between colleagues and diminished opportunities for collaboration (Waber et al., 2014).

Another key change in faculty life, particularly at four-year research institutions, has been the increased emphasis on research over teaching and service. One Generation X faculty member participating in a duo-autoethnography with a Generation Y faculty member (Abetz

& Goodier, 2019) described the changes she observed over her time in the professoriate regarding teaching and service. As an early-career assistant professor, she recalled:

> Teaching excellence was expected, and we were very student centered. Faculty were usually in their offices, even on days they didn't teach, and it was not unusual to meet people with over 20 years of service to the institution… Everyone did a lot of service; some more than others just like now, but everyone contributed. (p. 127)

She recounted needing just two publications for tenure compared to the fifteen or more now required. In contrast, her pre-tenure Generation Y colleague commented she is discouraged from serving on college-wide committees and from taking on leadership roles in order to produce a tenure-able research agenda. Other scholars have documented negative impacts of institutional focus on research on faculty citizenship behavior (Holland, 1999; 2019; Neumann & Terotsky, 2007). Lawrence and Morris (2019) have traced the growing emphasis on faculty research and grants to increased competition for status due to the emergence of university ranking systems in the 1970-2000 era.

Such changes in the focus of faculty may be causing faculty members to become increasingly disconnected from their institutions' missions. Nichols (1995) described the phenomenon of "academic ratchet" as the "steady, irreversible shift of faculty allegiance away from the goals of a given institution, toward those of an academic specialty" (p. 5). Kezar and colleagues (2007) described this challenge as especially pertinent to early-career faculty members: "Increasingly, new faculty members are being socialized to view involvement in external activities as more important than campus involvement." In addition, due to the lack of tenure-track positions, more faculty may be accepting positions at lower-resourced and lower-ranked institutions and focusing on developing their academic profile to be marketable to higher-resourced programs. Massy (1996) argued that the loosening of connection between faculty members and their institutions manifests itself in local efforts to safeguard research, preserve workloads, and tamp down efforts for efficiency and innovation within universities.

Within their institutions, faculty may also be experiencing a marginalization of their voice in campus decision-making (Kezar & Lester, 2009). Scholars point to the increase in non-teaching administrative positions—termed the "administrative lattice" (Nichols, 1995)— and the rise in contingent, non-tenure track faculty as reducing the share of tenured faculty as a proportion of university personnel and leading to greater emphasis on management and

corporate approaches to governance (Martin, 2016; McNaughtan et al., 2017; Slaughter & Rhoades, 2004). Others have argued that the increase in peripheral functions of higher education, such as commercial ventures, research centers, foundations, and athletics have caused a further drift away from shared governance models (Bastedo, 2012; Collis, 2004; Gumport, 2012). However, some observers have pointed out that full-time faculty enjoy greater resources than in previous generations. For example, the introduction of teaching assistants (TAs), graduate assistants (GAs), graduate research assistants (GRAs), and contingent faculty allows universities to accommodate more students and raise the pay and prestige of full-time faculty members relative to other members of campus (Lawrence & Morris, 2019).

What appears clear is a growing divide between faculty and administrators (Bess & Dee, 2014). Instead of working toward shared goals, faculty and administrators find themselves at loggerheads over ends, ways, and means of institutional life. Birnbaum (2004) observed that in recent decades faculty participation in shared governance has shrunk from involvement in larger campus issues to the narrow interests of their individual units. Hearn and McLendon (2012) wrote that such changes may be turning faculty support *against* innovation on campus: "Traditional forms of shared governance that vest authority largely in tenure-line faculty housed in degree-oriented departments may be not only removed from innovative organizational trends on campus but actively resistant to those trends" (p .72).

Not only has faculty life and expectations changed, but the faculty have too. Members of Generation Y, otherwise known as "millennials" born between 1980 and 1996 (Strawser, 2019) are currently the largest segment of the U.S. workforce (Pew Research Center, 2018). They are expected to soon begin entering the faculty profession in greater numbers, followed closely by Generation Z. As students, Generation Y members were generally known to challenge the status quo, demand transparency, hold high expectations for their instructors, and desire frequent coaching and feedback—albeit feedback "delivered gently" (Strawser, 2019, p. 7). Howe and Strauss (2000) defined this segment as "special, sheltered, confident, team-oriented, achieving, pressured, and conventional" (p. 31). Some of these attributes may conflict with long-standing faculty norms. For example, millennials have realistic expectations regarding entry-level positions but may hold unrealistic views about when to be promoted and advanced (Ng et al., 2010; Smith, 2019). To better reach young faculty,

scholars recommend administrators adopt mentoring or "reverse-mentoring" programs (Smith, 2019), encourage more collaboration and teamwork in the workplace (Alsop, 2008), and focus on setting clear promotion and evaluation guidelines for success (Smith, 2019), including greater inclusion of teaching and service in rating systems (Mallard & Singleton, 2007).

Faculty Values and Reward Structures

Just as the goals of higher education institutions are often "contested, multiple, and ambiguous" (Hearn, 1999, p. 136), faculty are motivated in their work for divergent reasons. Faculty motives may include the ability to produce knowledge, solve societal challenges, support and mentor students, and champion a certain view or cause. Thus, questions of financial, social, or intrinsic rewards will vary across demographics and circumstances. However, faculty are undoubtedly affected by local cultures and rewards structures, and certain commonalities in motives can be identified (Gumport, 2012).

Research on financial motivators of faculty behavior has yielded mixed results (Al-Hussami et al., 2011; Hearn, 1999; Markowitz, 2012; Neumann & Finaly-Neumann, 1990). Al-Hussami et al. (2011) found that pay could not predict faculty commitment to the university. Neumann and Finaly-Neumann (1990) reported that monetary rewards have "inconsistent" impact and instead concluded that "faculty commitment is likely to be affected by intrinsic outcomes such as challenge and meaning in work as well as support from a friendly group or from an understanding chairperson" (p. 94). However, Markowitz (2012) found that satisfaction with pay can be influential in determining faculty intent to stay, and others have suggested that pay *equity*, rather than pay level, may be consequential in faculty commitment and satisfaction (Bozeman & Gaughan, 2011; Harshbarger, 1989).

While pay has not been found to be a primary motivator, the use of targeted financial rewards has been shown to have positive motivational effect in certain narrow instances. Faculty can be motivated to teach additional classes in off-terms or over the summer for extra pay. They can be incentivized to adopt new technology such as teaching online (Sibley & Whitaker, 2015). In fact, many digital learning leaders agree that professors need to be rewarded either financially or through the tenure and promotion process to engage in online teaching (Lederman, 2019b). Often, however, the challenge is not the willingness to reward faculty, it is the limited availability of funds at institutions for incentive pay. Thus, financial

incentives to faculty are usually quite paltry—"simply a little whipped cream on the pie, if at all," stated Bowen and Schuster (1986, p. 250).

More than financial rewards, faculty have generally been found to be heavily motivated by internal factors (Abbott, White, & Charles, 2005). In a cross-sectional study on faculty and public service ongoing since 1995, most faculty reported being motivated by intrinsic rewards such as work values, personal life experiences, and a sense of responsibility to give back in their service (Holland, 1999; 2019). The author stated, "Faculty motivation is, therefore, found to be strongly influenced by personal experiences, individual and collective professional objectives, and evidence of positive outcomes on organizational outcomes they value" (Holland, 1999, p. 650). She also found that leaders seeking to promote more service to the institution would make more progress appealing to faculty's internal values than by addressing the tenure and promotion system. Thus, Hearn (1999) recommended leaders thoughtfully review an institution's core values and principles in determining appropriate incentive structures.

Given the internal motivation of faculty members, it is not surprising that autonomy has been found to be a core value in faculty work (Chen & Chiu, 2008; Lawrence et al., 2012). The flexibility in shaping research, teaching, and service agenda is perceived as the ideal for the American academic (Ward, 2003). Aithal (2018) found that as faculty gained more autonomy in one area, such as research, their satisfaction in other areas increased. Others have observed that when leaders are responsive to faculty autonomy and equity, faculty productivity and commitment increase (Chen & Chiu, 2008; Daly & Dee, 2006). In addition, inclusiveness in decision-making, shared ownership, openness in communication, and trust have emerged as important work values for faculty (Carr-Chellman et al., 2019; Chen & Chiu, 2008; Daly & Dee, 2006).

Opportunities for future professional advancement are also significant motivators for faculty. Scholars studying French universities found that work vitality and satisfaction could be significantly diminished when prospects for future advancements were limited (Drucker-Godard, et al., 2015). Advancement opportunities must also be clear and unambiguous. For example, Drucker-Godard et al. (2015) found that complexity in the tenure and promotion process can demotivate faculty in their work, and Gormley and Kennerly (Gormley &

Kennerly, 2010) found that role ambiguity and conflict for faculty can reduce organizational commitment.

Finally, scholars recognize that faculty motivations change over time, thus the effectiveness of rewards and incentives systems may vary by age and generation (Becker et al., 2009; Kezar, 2013). Pre-tenured faculty members have reported higher interest in financial and administrative incentives (Holland, 1999), while tenured faculty are more likely to pursue service activities based on intrinsic motivation rather than financial incentives (Fjortof, 1993). This is not surprising given the more transient nature of early-career work and the higher likelihood of younger faculty leaving the organization to pursue career opportunities (Al-Hussami et al., 2011; Timalsina et al., 2018).

<div align="center">**Effective Academic Leaders**</div>

The third pillar of knowledge needed for this study is an understanding of the role of academic leaders and the challenges inherent in their positions. Kezar and colleagues (2007) identified supportive academic leadership as one of the most critical elements in a faculty member's involvement in service and leadership on campus, but they also emphasized that supportive leaders are uncommon due to a range of factors. I first provide context for the challenges of leaders in the contemporary academy and then discuss best practices for leadership effectiveness, specifically focusing on the role of leaders in promoting strong organizational commitment of faculty and in supporting the innovative work of faculty.

Roles and Challenges of Academic Leaders

Being an academic leader in higher education often means navigating numerous professional and philosophical challenges with limited preparation and minimal support. Gmelch and Buller (2015) observed, "Academic leadership is one of the few professions one can enter today with absolutely no training in, credentials for, or knowledge about the central duties of the position" (p. i). Scholars have noted that many leaders and managers enter their positions in an *ad hoc* manner (Selingo, 2016), institutions routinely underfund and deprioritize efforts to provide training to leaders (Goodchild, 2014), and colleges and universities lack access to useful best practices in leader development (Freeman et al., 2016). Large-scale efforts to train leaders may be improving, as evidenced by the annual 6 percent growth in higher education administration degree programs (Jensen & Freeman, 2019) and growing external professional development programs run by national organizations such as

the American Council on Education (ACE). However, these efforts may not fully prepare leaders for their roles, and scholars lack measures to understand their impact (Stone, 2012).

A key challenge for academic leaders is the ability to navigate the discrete worlds of administration and faculty life. As working environments in higher education institutions have become more complex and corporate-like (Wilson, 2010), leaders must develop new administrative skills and know-how in areas like human resources, budgeting, and data analytics, while retaining academic currency in their field or discipline. Bolman and Gallos (2011) stated:

> Academic leaders live with feet firmly planted in two different camps: the world of academia and the corporate-informed world of administrative performance. Each has its own values, beliefs, and expectations…Living in two worlds also means that much of the work and accomplishments of those in the middle are invisible to, or dismissed by, one constituent group or another. (p. 147)

Many scholars and observers have noted this bifurcation between the administrative and faculty work environments is increasing (see, for example, Johnson, 2019; Nichols, 1995; Provost, 2015). Caught in the middle, academic leaders often struggle to retain fluency in both languages.

While administrative demands have increased, managing the social, cultural, and political challenges of working with faculty members remains arguably the largest challenge for academic leaders. Local academic units such as departments and colleges are considered the "local rock on which the power of voice is based in academia" (Clark, 1987, p. 64). Faculty hold strong views about their position at the university, shared governance, leadership decision-making, and the maintenance of academic values. These views are largely shared by academic leaders as well, but leaders are perceived as the *de facto* face of the institution with power over decisions and resources. Ideological conflict is also a common challenge within departments, especially in certain disciplines. Braxton and Hargens (1996) found that low-consensus fields, such as the social sciences and humanities, tend to have more conflict, higher turnover, lower collaboration, and less efficiency in using resources than higher-consensus fields such as the hard sciences. Training for academic leaders in conflict resolution and personnel management has lagged, although more resources are becoming available (see for example, Green & Leonard, 2016).

Such challenges often come to a head in evaluating and providing effective feedback to faculty. Faculty largely view their relationship to a leader as a peer rather than a subordinate, and they may identify more strongly with their discipline or field over their institution. For these reasons, leaders may opt to limit critical feedback or engage in passive-avoidance behavior. Massy, Wilger, and Colbeck (1994) used the term "hollowed collegiality" to describe how certain issues such as one's research are freely discussed within faculty departments while core aspects of faculty performance such as learning and teaching are rarely broached. Further, leaders must be cognizant of generational challenges. For instance, although feedback is often sought by younger generations, it must often be delivered gently (Smith, 2019).

These represent only a few of the numerous challenges for leaders in academia. For leaders to effectively lead change in their units, they must learn how to support and empower faculty as the change agents for the institution. As described in the previous section, the commitment of faculty to their institutions has been challenged due to forces of the "academic ratchet," "administrative lattice," and various other reasons (Nichols, 1995). Thus, leaders must first learn how to promote strong faculty commitment to and identification with the organization, and then foster the innovation and creativity of faculty members.

Best Practices in Promoting Faculty Organizational Commitment

Commitment has been defined as "the relative strength of an individual's identification with and involvement in a particular organization" (Mowday et al., 1982, p. 226). It refers not just to whether employees remain at an institution long-term, as measured by turnover, but also to the day-to-day strength of an employee's attachment to and investment in the mission of the organization. Significant study on the topic from within higher education and industry more broadly reveals that certain leadership practices can be effective in promoting this commitment (Al-Hussami et al., 2011; Carver et al., 2011; Fjortof, 1993; Gormley & Kennerly, 2010; Gutierrez et al., 2012; Gwyn, 2011; Lawrence et al., 2012; Provost, 2015). Harshberger (1989) summarized these organizational practices as support for autonomy, personal friends and connection, a values-match between self and institution, and perceptions of equitable treatment.

But first, what factors have *not* been shown to be primary factors for commitment? Just as faculty are not primarily motivated by external stimuli, environmental factors such as

workload (Al-Hussami et al., 2011; Bozeman & Boardman, 2013), physical working
conditions (Neumann & Finaly-Neumann, 1990), and even pay levels (Al-Hussami et al.,
2011) have had only limited impact on enhancing organizational commitment of faculty.
Similarly, individual characteristics such as gender, race, or education level on commitment
have "weak or inconsistent" effect (Becker et al., 2009, p. 446). One exception may be age, as
it has been shown that younger faculty are more likely to leave the organization to pursue
career opportunities and may be less likely to demonstrate service to the institution (Fjortof,
1993; Neumann & Terotsky, 2007; Timalsina et al, 2018)

   Organizational Support. Among the factors most strongly associated with
commitment are organizational features such as organizational support, positive leadership
perceptions, and organizational climate. Perceived organizational support (POS) refers to the
extent to which faculty believe the organization values their contributions and supports their
well-being (Eisenberger et al., 1986). Specifically, POS includes elements of leadership
support and responsiveness, social and emotional support, recognition, and resources for
professional development (Candela et al., 2015; Dee, 2004; Lawrence et al., 2012; Provost,
2015). POS theory states that employees will demonstrate greater commitment to the
organization when they perceive their needs are being satisfied (Provost, 2015). In a nation-
wide survey of nursing faculty, Candela et al. (2015) found positive administrative support to
have highest impact on faculty's intent to stay at an organization. They recommended
academic leaders attend to the resources for faculty development and "personalize
relationships with individual faculty members to understand their needs and acknowledge
their efforts" (p. 580).

   Because organizational support is socially constructed (Kezar, 2013), leaders must
take the perceptions of faculty members into account and acknowledge that leader and faculty
perceptions may not always match (Tierney, 2012). For example, Provost (2015) found a
significant difference in how faculty perceived the support they received for online teaching
and how administrators viewed that same support. Candela et al. (2013) observed that, more
than sheer workload, the positive *perceptions* of faculty productivity by leaders most
influenced faculty members' desire to stay at the organization, and Gutierrez et al. (Gutierrez
et al., 2012) found that positive perceptions resulted in greater productivity in faculty.
Similarly, the perceptions of pay equity, rather than pay itself, may be more significant in

commitment (Bozeman & Gaughan, 2011; Hagedorn, 1996; Whitehouse, 2001). However, leaders should bear in mind that perceptions vary greatly with individual life conditions, career stage, and organizational conditions (Kezar, 2013), and organizational commitment is a dynamic process over a faculty member's career (Becker et al., 2009).

Seeing through the perspectives of faculty requires leaders to develop essential skills in listening and consulting. One study analyzed the perspectives of "the led"—faculty and staff not in leadership positions—at British universities and revealed that over half the sample reported they were not receiving the professional help or advice they needed even though their leaders were once full-time faculty themselves (Evans et al., 2013). Gumport (2012) found that faculty often oppose change initiatives such as those driven by revenue, unless they were first consulted on the change, in which case they may lend their support to it. Thus, leaders must learn to seek and incorporate input, along with developing the ability to see problems or situations from multiple points of view (Tierney, 2012). Managers who spend time with faculty one-on-one, involve faculty in larger work projects, and accept input in decision-making increase faculty's organizational commitment (Chen & Chiu; 2008). These actions play a key role in shaping organizational climate (Gormley & Kennerly, 2010).

One specific means of developing organizational investment is through the faculty socialization process (Tierney, 2012). This is particularly true early on in a faculty member's career or tenure at an institution. Socialization has been found to be effective in promoting an ethic of faculty citizenship for the welfare of the institution. Lawrence et al. (2012) found that "socializing new faculty to an ethic of academic citizenship is a collegial responsibility, and the behavior of established faculty conveys to new community members critical messages about their campus obligations" (p. 347). Mentoring programs and collaboration opportunities are effective tools to build positive working relationships (Gormley & Kennerly, 2010; Gutierrez et al., 2012).

However, even for mid- and late-career faculty, organizational support and socialization initiatives are needed to reinforce their commitment to the organization and facilitate innovation and creative work. Given that expectations for faculty have changed drastically in less than the span of one career (Abetz & Goodier, 2019) senior faculty also need development in new task areas such as online teaching and marketing (Elliott et al., 2015). In addition, Halonen and Dunn (2018) stressed the importance of senior faculty

making visible efforts to improve core skills—such as by attending faculty development sessions on teaching—so that newer faculty would not fear a stigma associated with seeking help by those who will vote on their eventual promotion.

Role of Incentives. The emphasis on faculty empowerment and autonomy does not negate the role of incentives in motivation. Strategic incentives, such as recognition programs, bonuses, course buy-outs, and even non-financial rewards such as administrative and research support can enhance the perception of organizational support (Al-Hussami et al., 2011). In fact, a diversity of leadership awards has been found to be most effective for motivating faculty. Holland (1999) stated, "Successful institutions or departments use diverse approaches including, for example, financial incentives; recognition through publicity, awards or special titles; support for dissemination activities; or support in fund raising or grant making to support public service projects" (p. 67-68). Regarding faculty compensation, some universities maintain faculty retention funds in the Provost's office to stay competitive in keeping talented faculty at the university (Carpenter, 2019). Some also use dollar-for-dollar increases, rather than percent, to deal with issues of salary compression (Hearn, 1999).

Faculty reward systems have been critiqued as being too narrow, both in terms of reward type and what is rewarded. In a piece almost 30 years ago, Boyer (1990) questioned whether the current faculty reward system was contracting "at the very time that the mission of American higher education was expanding" (p. xii). He suggested broadening faculty rewards to re-emphasize teaching and service and to reward collective as well as individual success. Others have encouraged rewarding public-facing, not just academic, scholarship (Bond & Gannon, 2019). Carpenter (2019) described a feedback system that is more informal and regular, with more consistent forms of recognition (i.e. more than once-a-year teaching awards), collaboration, badging and certification systems, and peer-to-peer modeling and mentoring programs.

However, other scholars have cautioned that leaders' reliance of financial rewards is not without unintended consequences. Hearn (1999) stated, "unfortunately, faculty's incentive to do well in salary evaluations can come into conflict with their incentive to improve the quality of their teaching, research, or service" (p. 155). In addition, when faculty evaluation and faculty development are conflated, faculty do not have incentive to expose weaknesses for improvement, and overall teaching quality may suffer. Thus, "institutions must be wary of

forcing one model unbendingly onto all fields" (Hearn, 1999, p. 158). In addition, neoliberal pressures associated faculty work with can lead to a culture of competition in which faculty undermine each other's work in pursuit of individual benefit (Museus, 2020).

Best Practices in Promoting Creativity and Innovation

In addition to fostering commitment to the institution, a leader's role in supporting the innovation and creativity of faculty is central to quality leadership. Creativity concerns the creation of new ideas whereas innovation pertains to the implementation of ideas (Hallett, 2003; McLean, 2005; Tierney, 2012). Tierney (2012) observed that the role of innovation in higher education organizations is more essential than a generation ago because of the increased importance of technology transfer, intellectual property, and the growing ties between postsecondary organizations and businesses. Creativity also influences the flow of human capital into and out of organizations. Florida et al. (2006) stated, "Openness to ideas—to creativity—is paramount to both talent attraction and economic success. Talented and creative people vote with their feet—and they tend to move away from communities where their ideas and identities are not accepted" (p. 15). Dee (Dee, 2004) found organizational support for innovation to have a significant effect on faculty commitment to the institution.

Tierney (2012) asked if creativity can be an organizational rather than individual attribute, and if so, what organizational attributes of higher education institutions consistently produce new creative ideas. He and other scholars (Hallett, 2003; Martin, 2002) concluded that organizational culture has a powerful, pervasive influence on individual action. Leaders occupy a symbolic position to define and influence this culture. "Organizational culture… [is] a negotiated order influenced by people with symbolic power—the power to define a situation" (Hallett, 2003, p. 135). Leaders exercise symbolic power by listening, developing key relationships, and harnessing various mediums to inspire through communication (Russell Thacker & Freeman, 2019). One key way an organizational leader unlocks creativity is through empowerment.

Faculty Empowerment. For creativity to flourish, scholars continue to emphasize the importance of empowering faculty members (S. H. Lee & McNaughtan, 2017). Empowerment involves granting political, economic, or social power or capital to individuals or groups (WikiDiff, 2015). It is closely related to autonomy, which is known to be core value in faculty work (Chen & Chiu, 2008; Lawrence et al., 2012). Empowerment is seen as one

potential tool for leaders to help faculty bridge the divide between their current work environment and the ideal (McNaughtan et al., 2019).

A growing area of the empowerment literature relates to job crafting. Job crafting was introduced as an organizational tool in management sciences to explain how employees could re-design or re-conceptualize their work to align with their interests and goals (Berg et al., 2013; Wrzesniewski & Dutton, 2001). Crafting occurs across three primary dimensions. Task crafting occurs when employees alter their work tasks to align with areas of interest (Tims et al., 2012); cognitive crafting takes place when employees redefine the way in which they think about their work to be more meaningful (Wrzesniewski & Dutton, 2001); and relational crafting happens when employees have a say in what work relationships they form (Berg et al., 2013). Applied to faculty work, scholars have found when faculty have more opportunities to craft their work, they experience revitalization and increased commitment (Lee & McNaughtan, 2017; McNaughtan et al., 2019). Most significantly, studies on job crafting have also shown a positive relationship with employee innovation (Berg et al., 2013; Tims et al., 2016).

Whether through job crafting or empowerment, faculty agency in the workplace has many potential benefits. For example, giving faculty the ability to hire their own research team or create their own committees for projects is a form of relational job crafting and increases commitment to the organization (Wrzesniewski & Dutton, 2001; McNaughtan et al., 2019). Empowering faculty to identify service opportunities in line with their interests can also increase satisfaction. Neumann and Terotsky (2007) argued it was time for faculty to "craft [service] purposefully and meaningfully, and to align it, as much as possible with their substantive interests… Professors' thoughtful crafting of service within their careers may make it more palatable—perhaps more meaningful—than it has been for many" (p. 306).

Negentropy as Theoretical Framework

To further understand how academic leaders can facilitate the creative and organization-centered work of faculty members, I explore the theoretical framework of negentropy. In this section I provide more context on the development of negentropy as a theoretical construct and outline how it has been applied to organizations, higher education institutions, and finally to the leadership practices of higher education leaders.

Development of Negentropy

Because negentropy may be unfamiliar to many, some background from the field of thermodynamics may be warranted. The field of thermodynamics is concerned with the flow of energy and matter in all living systems. The second law of thermodynamics states that living systems naturally experience breakdown and disorder over time as energy leaves the system in an irreversible process (Lucas, 2015). Like the melting of ice or the leaking of air from a tire, energy seeks to spread out in the highest configurable formation. This loss of energy from a system, or decay, is called entropy. In order to combat the natural forces of decay and return to states of greater order and integration, living systems must have energy reintroduced into the system (Miller, 1992). This restoration of energy is called negentropy. Defined simply, negentropy is the "active counterbalance to *entropy,* which is the loss of energy within a system*"* (Carr-Chellman et al., 2019, p. 438). Negentropy occurs when negentropic actors in the environment release new energy back into the system. More than simply restoring living systems to their original states, negentropy can bring a system to higher states of organization and integration (Carr-Chellman et al., 2019).

How does negentropy apply to human social systems or organizations? Like all living systems, human systems also experience states of equilibrium, or homeostasis, and energy loss over time as measured by entropy. The work of 'negentropic actors' is necessary to release energy back into the organizations or systems in the form of new ideas, activities, or solutions to disrupt the forces of decay. Negentropy is closely related to systems theory (von Bertalanffy, 1968; Wheatley, 2006), which depicts how organizational systems interact with their environments and has been popularized by concepts such as systems thinking and learning organizations (Senge, 1990). For example, Gonzalez-Perez (2018) applied negentropy to the spread of private electric vehicles in urban systems in Mexico to show how deliberate negentropic action was needed to counteract entropic forces holding back the electric vehicle market. Heckman and Montera (2009) were among the first to apply negentropy to educational systems. They detailed how entropy occurs in schools through the breakdown of order over time and described how negentropic actors could introduce energy to the system in the form of new knowledge and ideas.

Negentropy is a multi-faceted concept that includes aspects of innovation, entrepreneurialism, leadership, change theory, and institutional investment (University of

Idaho, n.d.). However, a negentropic mindset is not the same as innovative or entrepreneurial mindsets. Carr-Chellman et al. (2017) distinguished between innovative, entrepreneurial, and negentropic mindsets by stating that innovative thinking focuses simply on improving current practice while entrepreneurial thinking includes an element of personal profit. By contrast, negentropic thinking pursues change for the welfare of the institution. Stated, Freeman and colleagues (2018), "Institutional commitment is key to individual negentropic behaviors within the system of the university, as most such behaviors are an outgrowth of a caring attitude toward the home institution" (para. 5). These differences in the context of faculty tasks are highlighted in Table 2.1. For purposes of this study, I define negentropy as organization-centered innovation.

Negentropy in Higher Education

The concept of negentropy in higher education is still emerging and has not received significant attention in the literature. However, a small set of authors have applied negentropy in theoretical ways to higher education institutions to discuss improved organizational training (Carr-Chellman et al., 2019), leadership development for university leaders (Freeman et al., 2018), and online program development (Freeman et al., 2017). Higher education is a ripe area for application of negentropy because of numerous entropic forces in effect. For example, Carr-Chellman et al. (2019) observed how current challenges and fractures such as dropping enrollments, erosion of shared governance, and political pressure are evidence of entropy in the system. Additionally, external pressures have led to confusion and "disintegration" of the core purposes of higher education (Freeman et al., 2017). Where higher education was once conceived as a place for developing informed citizens for "well-considered socio-politico-economic decision-making," it has now largely evolved to be a place for vocational training to prepare students for the knowledge economy (Dhir, 2015, para. 2).

Universities need negentropic actors to restore order and bring progress to the institution. These can either be leaders or faculty members who take responsibility for the well-being of the organization and initiate action that introduces new energy into the institution. Examples of negentropic behavior may include pursuing grants, creating new online programs, reaching new markets of students, developing partnerships with industry, or even smaller perceived actions such as redesigning workflows, revamping teaching, or

simplifying requirements. Carr-Chellman and colleagues (2019) explained, "Whether leaders or faculty, negentropic actors typically act to restore energy to the system by reconceptualizing roles, processes, and resource flows in unorthodox and innovative ways that generate rather than drain energy from the system." (p. 442). The key is these behaviors are "purposeful" and "aligned with university needs" (Freeman et al., 2018).

Faculty can act in several negentropic ways to be agents of growth and change within their institutions. This starts with a mindset of personal success tied to institutional success (Freeman et al., 2017). Negentropic faculty hold an expanded view of their job beyond typical boundaries and balance individual with collective pursuits. For example, Carr-Chellman and colleagues (2019) applied negentropy to faculty behavior in online education. They described how the interests of faculty and leaders can align to initiate online learning as a negentropic initiative to restore energy and order to the university.

Role of Academic Leaders in Negentropic Behavior

Negentropic behavior is often difficult to begin or sustain without the support of academic leaders. Carr-Chellman et al. (2019) explained, "Leadership has to not just allow or encourage new offerings; leadership needs to help direct and focus these offerings in negentropic ways — ways that produce more integration and energy" (p. 442). However, Carr-Chellman et al. (2019) are careful to distinguish between leadership action that encourages faculty negentropic action and that manipulates faculty members. They identified six keys to negentropic leadership: 1) relinquish control and rely on faculty expertise, 2) identify appropriate incentives aligned with employee goals and interests, 3), avoid "colonial" manipulation by seeking goal alignment, 4) consider financial incentives but broaden incentives to other areas, 5) focus on "failing forward", and 6) identify areas where entropy is occurring as potential areas for negentropic action.

Within a leader's portfolio, there are several inflection points where negentropic action is needed. The first is identifying and hiring for negentropic actors. Faculty hiring has been scrutinized for emphasizing individual accomplishment over a mindset of collective responsibility and innovative thinking. In a feature on faculty hiring for Duke University's new Kunshan campus in China, Ferreri (2018) described the hiring committee's philosophy, "We're looking for people who aren't primarily focused on benefits packages and teaching loads," but rather those "who find appealing the idea that they're taking on something bigger

than themselves" (para. 17). To test this mindset, the committee allowed candidates to interact with each other and participate in group exercises such as a designing the curriculum for a new, interdisciplinary major. Freeman et al. (2017) stated the goal of "Identifying negentropic professors and developing them over time in the service of increased innovation in online offerings is an essential element of real faculty-driven… growth" (para. 6).

The second area for leadership action is providing ongoing training, support, and encouragement to current faculty for negentropic behavior. Early career faculty certainly need development, but support should also not be overlooked for more seasoned faculty who may have been socialized into the academy in a more traditional way. The shortage of funds and increased pressures on productivity often short-circuit the training and professional development of faculty members. Plus, current rewards systems may serve as impediments for innovative faculty behavior (Brownell & Tanner, 2012). Freeman et al. (2017) recommended leaders adopt incentive structures that return a portion of revenue money to their faculty units if their projects are successful—money that could be used for teaching, travel, or research support. Above all, they stressed that leaders create an environment of trust, transparency, and sincere effort toward goal alignment with their faculty (Freeman et al., 2017). Leaders must be aware that, in asking faculty to put the needs of the organization on par or ahead of their personal interests, faculty require a degree of trust that leaders have the best interests of faculty in mind. Therefore, CarrChellman et al. (2019) recommended leaders consistently ask themselves "what would have motivated me as a faculty member to pursue a new project?" and to structure their encouragement accordingly.

Despite the potential benefits of negentropy, it is important to also take a critical approach (Martínez-Alemán et al., 2015) when examining or implementing negentropic actions as they carry a number of potential risks both for individuals and institutions. Critical theory seeks to unpack assumptions within research for the purpose of social change (Kim, 2016). First, given the power relationships inherent between faculty and leaders (Pusser, 2015; Slaughter et al., 2015), leaders may misuse their power and influence by coercing or incentivizing faculty to act outside their job descriptions to pursue innovative solutions for the organization. Carr-Chellman and colleagues (2019) discussed the possibility of leaders unethically manipulating faculty members into solving organizational challenges and emphasized the need for transparency in leadership. Through pressure to contribute to

organizational objectives, pre-tenured and contingent faculty, especially, are in a vulnerable position to not upset senior colleagues or leaders who hold power over their future progression. Or, to the other extreme, faculty can seek to enter arrangements with businesses or external groups with unethical personal benefits in the name of negentropic action. Thus, guardrails should be in place to protect against these outcomes.

In a broader sense, leaders should also be aware that negentropy entails accepting a degree of chaos in return for creativity. This form of chaos differs from the "chaos," or energy loss, resulting from entropy. Rather, it is the kind of chaos discussed by Brafman and Beckstrom (2006) as necessary in open social systems for good decisions to be made across the organization. They found that organizations with a lower degree of structure and rigidity tended to have more innovation and creativity. Negentropic action is energy-releasing activity, and not all energy may be productive. Leaders must learn to manage the side effects of negentropic action without damaging the organizational culture needed for positive negentropic action. Part of this is emphasizing learning from failure through "failing forward" (Carr-Chellman et al., 2019). In short, "Understanding the appropriate way to encourage negentropic actions for the university... is an important set of leadership skills to hone" (Carr-Chellman et al., 2019, p. 442).

New Directions for Study

Where does the current research leave us regarding leadership negentropic behavior? What gaps remain in our understanding? Research on negentropy and negentropic mindsets in higher education organizations remains in its infancy. Other studies have examined the development of related measures such as innovative mindset (Stauffer, 2015), entrepreneurial mindset (Davis et al., 2016), and organizational citizenship and service (Lawrence et al., 2012) in higher education, but negentropy is distinct from these as a construct. In addition, most of the current research on negentropy has addressed the development of negentropic mindsets from a faculty rather than leadership perspective, and it has primarily been conceptual in nature. We need to know more about effective practices and characteristics of leaders who facilitate the negentropic behavior of faculty members.

More broadly, despite the range of research on academic leaders and their relationship with faculty members, several gaps remain. Most of the research has examined leader behavior in supporting the traditional faculty roles of teaching, research, and service. But, the

question of how to facilitate and support faculty in their "new" set of duties—that is, marketing, recruiting, building online programs, creating industry partnerships, and doing community outreach, among others—has received little attention. More research is needed to understand how to develop and socialize faculty for these roles. In addition, while leaders are well-versed in how to identify and hire faculty with credentials and skillsets in research and teaching, much less is known about how to identify and hire faculty with negentropic mindsets who will be capable of creating innovative and inventive solutions to unknown challenges in the future. Lastly, despite work on leaders' use of strategic incentives such as recognition programs, monetary rewards, and non-financial rewards to increase faculty commitment and institutional citizenship behaviors (Al-Hussami et al., 2011; Holland, 1999; 2019; Lawrence et al., 2012), gaps remain in our understanding for how to use incentives to support faculty for the new tasks of the academy. This study aims to advance our understanding of negentropic leadership and contribute to these areas of knowledge.

Appendix: Tables

Table 2.1: Negentropic, Innovative, and Entrepreneurial Mindsets in Faculty Tasks

	Negentropic	*Innovative*	*Entrepreneurial*
Scholarship	Reaches out to public	Breaks new ground	Focuses on marketability of ideas, transfer to industry, patents
Teaching	May disrupt away from current content, tends to question the foundations	Utilizes new technologies and approaches to deliver current content	Engage learners in partnerships with industry, 'pitches' competitive models
Curriculum	Creates new programs focused on connecting across disciplines, disrupting status quo	May work within existing programs but with different class approaches	Creates new programs focused on market need, gaps, contracts
Service	Transcends to real outreach practice	Works to improve current committee work and try new ideas for improving existing practices	Considers how to connect service with community companies and translate into consulting or contracts
Overall focus	On fighting back entropic tendencies	On doing new things, new for better/ improvement	On personal advancement typically through consulting

Source: "Negentropy: Systems Theory and Chaos for Universities," A. Carr-Chellman, retrieved from https://www.uidaho.edu/ed/ci/faculty/alison-carr-chellman/negentropy

Chapter 3: Methods

The use of a manuscript dissertation (MDIS) allowed for the creation of multiple studies and manuscripts rather than one body of findings. My first two studies explored the leader's role in supporting the development of negentropic mindset in faculty members and the identification and hiring of negentropic actors. The third study centered on the development of my negentropic mindset as a doctoral student preparing to become a faculty member. Based on the MDIS format, this chapter is organized into an overview of the research design for manuscripts 1 and 2 followed by the design of manuscript 3.

Research Design for Manuscripts 1 and 2

Studies 1 and 2 both utilized a pragmatic qualitative research design to investigate the academic leader's role in facilitating a negentropic mindset in faculty members and the leader's role in identifying and hiring negentropic actors as faculty for the institution. Data collection for both occurred via qualitative interviewing of the same participant group. Both designs are discussed here together.

Overview of Pragmatic Qualitative Research

Qualitative research provides rich narratives of the experiences, knowledge, and perspectives of its participants and includes specific approaches such as case study, narrative, phenomenological, grounded theory, and ethnography (Savin-Baden & Major, 2013). However, at times, a research design may not fit neatly into these well-defined categories, or a researcher may be interested in a conducting inquiry primarily to inform professional practice. Rather than engaging in "methodological acrobatics" to force the inquiry into one of these methodological approaches (Savin-Baden & Major, 2013, p. 171), a researcher may employ a pragmatic approach by using practical methods and techniques best suited to the research question (Smith et al., 2011). Among the main benefits of pragmatic research are the ability to understand the meaning of participants' perspectives in the context of their settings and to advance practical solutions over philosophical discussion (Smith et al., 2011). The results of pragmatic research are often new policy suggestions, recommendations for practice, and practical applications for social or organizational change ("Pragmatic Study," 2010).

Pragmatic approaches are expanding across fields of education, health, and business. In a pragmatic medical trial, for instance, researchers may relax eligibility requirements for a

study because of the difficultly in recruiting the required number of patients, controlling patient bias, or recreating the optimal clinical experience (Salive, 2017). Some researchers argue pragmatic studies are more applicable to everyday settings of patients or participants ("Pragmatic Study," 2010). In reality, many qualitative studies have pragmatic elements wherein researchers have made trade-offs based on available resources and time (Patsopoulos, 2011). Pragmatic research should not to be employed as a substitute for rigorous and sound methods in the research process. Systematic data collection, unitizing and coding procedures, and the triangulation of data analysis all remain necessary (Carter et al., 2014). In addition, because internal validity may be diminished in pragmatic approaches, scholars recommend that researchers gain perspectives from many different types of participants rather than a homogenous sample (Cooper & Endacott, 2007).

Pragmatic research falls on the continuum between objective and subjective approaches, and objectivist and constructivist epistemologies. Savin-Baden and Major (2013) described it as "mark[ing] the meeting point of description and interpretation, in which description involves presentation of facts, feelings and experiences in the everyday language of participants, as interpreted by the researcher" (p. 172). Qualitative researcher Johnny Saldana stated researchers can "take a pragmatic stance toward human inquiry and leave [themselves] open to choosing the right tool for the right job" (p. 177-8). Consistent with a descriptive approach, I followed rigorous data collection, coding, and theme identification processes (Carter et al., 2014). But due to the interpretive elements, I also provided information to acknowledge my bias and assumptions in the interpretation of the results to make clear my theoretical leanings.

Qualitative Interviews

The primary method for data collection in studies 1 and 2 was qualitative semi-structured interviews with academic leaders at four-year institutions. Interviews explored the leadership philosophies, strategies, and practices employed by participants in their approach to academic leadership of faculty. Specifically, I inquired about their recruiting, hiring, socializing, incentivizing, professional development, and evaluation strategies for faculty. Interviews were conducted via a secure video or phone conference platform and lasted between 30 and 45 minutes. Seidman (2013) suggested semi-structured interviews are pathways to include participants as co-researchers in your study by co-creating knowledge

through dialogue with the researcher. Additional topics can be explored, or questions raised, based on participant comments and experiences. In other words, the original set of questions served as a guide but not a master of my interviews.

Questions for this study were developed through an iterative process between my major professor and me through consulting the literature on academic leadership, faculty motivation, and negentropy. A preliminary set of ten questions were composed touching on each area of the study. The semi-structured interview protocol was then submitted to the university IRB for approval of exempt status. The questions were further refined in the pilot phase of the project.

Pilot Study

Sampson (2004) described the benefits of pilot studies as testing research methods, interview questions, identifying participants, and conducting a preliminary analysis of codes. In addition, exploratory studies are helpful in framing future research inquiries. In the spring of 2019, I conducted an exploratory study on academic leadership by interviewing four academic leaders on the University of Idaho campus for a case study related to the role of leaders in supporting faculty members in their online teaching and course building responsibilities. Although the study was not framed through the lens of negentropy, I received valuable feedback that helped shape the future direction of this study on negentropy. Most significantly, participants pointed out that faculty participation in the development of online learning has failed to reach its potential due to slack expectations on faculty contributions in this sphere, limited impact of online teaching on faculty evaluations, and lack of meaningful training and development for faculty in those roles. Participant information for this study is included in Table 3.1.

Regarding the current study, I also conducted a small pilot test by meeting with two outside participants—one faculty member in my program and one doctoral student who serves as an adjunct professor—to review my interview protocol and refine my questions. I asked for feedback on question content, question order, and any additional questions that should be addressed to my participants. I also asked for their recommendations in identifying participants for the study. Furthermore, I received feedback on the subject by attending a panel on best practices in academic leadership at the Association for the Study of Higher

Education (ASHE) annual conference in November 2019 and asking questions of the participants, all of whom currently serve as academic leaders.

Participants

The population of interest for this research study was mid- to senior-level leaders at four-year higher education institutions with direct responsibility for the supervision of faculty members. Although many academic leaders such as vice presidents, provosts, and presidents have supervisory responsibility, they may not be directly responsible for the hiring, training, and evaluation of faculty members and thus are not my target population. Titles of this population may include dean, associate dean, department chair, program chair, or center director. Particularly, I looked for current or former academic leaders with supervisory responsibility over faculty noted for their involvement in the development of new online programs, industry partnerships, major grants, spin-off companies, outreach programs to new populations (e.g. adult, minority), or other initiatives that have contributed to institutional advancement.

Participant Selection. Participants for these two studies were selected via both purposive and convenience sampling methods. The sampling was purposive in that I was deliberately seeking participants who will yield "information-rich cases for study in depth" (Patton, 1990, p. 169). Unlike a probability sample that uses random sampling to make statistical inferences to the sample, a purposive sample relies on the judgment and subjectivity of the researcher to select participants who will produce the best answers to the research questions (Creswell, 1998; Trochim & Donnelly, 2008). Researchers first "go to the groups which they believe will maximize the possibilities of obtaining data and leads for more data on their question" (Glaser, 1978, p. 45). In this case I sought for participants who supervised faculty involved in "negentropic" behavior such as the development of new online programs, industry partnerships, major grants, spin-off companies, or outreach programs to new populations.

Creswell (1998) described how within the broad category of purposive sampling, convenience sampling is one approach researchers can use when limits on time, resources, or participant availability exist. Researchers must often make various trade-offs based on constraints such as geographic location and accessibility of potential participants (Coyne, 1997; Patton, 2002). For example, my population may be considered "semi-elite" with heavy

time commitments and schedules, creating difficulty in creating an adequate sample size (Mikecz, 2012). Convenience sample means utilizing local networks and contacts along with techniques like the snowball method to secure interviews (Savin-Baden & Major, 2013).

Practically speaking, my plan involved engaging several academic leadership networks to find current or former academic leaders for participation. First, I contacted the Academy for Innovative Higher Education Leadership (AIHEL) at Arizona State University, a leadership development program that trains academic leaders from throughout the country on innovativeness in leadership. With their permission I solicited volunteers through their alumni program using the networks of a committee member who attended the program. I also reached out to the Western Interstate Commission for Higher Education (WICHE), which offers a Western Academic Leadership Forum for rising leaders. I used the snowball method by asking participants to recommend new participants and provide access if they are comfortable doing so. From an initial call for participants to over 35 graduates of these programs (exact numbers unknown due to use of organizational email list), three participants volunteered. Following these interviews, an additional 20 names were recommended through the snowball method, 8 of whom agreed to participate in my study.

Sample Size. My final sample size was 11 participants, as shown in Table 4.1. This is consistent with recommendations for qualitative studies to reach saturation (Creswell, 1998; Guest et al., 2006; StatsWork, 2019). For instance, Guest and colleagues (2006) conducted an experiment with qualitative sample size and found twelve interviews were optimal for saturation to be reached. While no precise guidelines on sample size can be given for every type of qualitative study, the researcher must use "judgment and experience in evaluating the quality of the information against uses to which it will be put" (Sandelowski, 1995, p. 183). Guetterman (2015) also raised ethical considerations about over-sampling, stating that sampling sizes have expanded in recent decades beyond what is needed for saturation.

Participant Confidentiality and Ethics

Prior to the data collection, I communicated with participants via email to arrange either a telephone or video-conference interview. Participants were provided an informed consent form detailing my responsibilities as researcher in protecting their confidentiality and data and to consent to recording of the interview for transcription. The confidentiality of participants was assured in each step of transcription and analysis. I recorded the interviews

either with the Call Recorder app on my personal cell-phone, or if conducted via video-conference, using the recording function on the Zoom video-conference platform.

Following the interviews, audio recording files were secured on a password-protected local hard-drive. I then manually transcribed the files and omitted any identifying characteristics in the data including names, institution references, or city or regional references. Participant names were also replaced with pseudonyms. At this point, the audio files of the interviews were destroyed from my hard-drive and phone. In the write-up of the study findings, I checked again that all identifying information was been blinded from the transcripts.

While these steps are fairly standard in Western academic research for protecting confidentiality, deeper and "more complex" questions about participant trust and expectations must also be considered (Bhattacharya, 2007). Qualitative research is "fluid and messy" (p. 1113). Due to the sensitive nature of the material that was shared, I also provided the participants an opportunity to see how their quotes would be portrayed in the project write-up. I did this through the member checking process by sending each participant the quotes I planned to use with a short description of the context in which they were used.

Data Coding and Analysis

When working with the data from a pragmatic study, Cooper and Endacott (2007) recommended taking an inductive approach, including reading and re-reading the transcripts, identifying key codes, clustering codes together in categories based on known relationships in the data, developing overarching themes and sub-themes, and drawing conclusions based on the evidence (Saldana, 2013). The key challenge in coding is to greatly reduce the data without losing its meaning (Adu, 2013). Vagle (2014) recommended researchers read the transcripts at least three times to immerse themselves in the data and systematically notate meaning as it arises in the form of reactions, questions, or relevant codes. No single coding approach fits neatly with pragmatic studies, only the researcher is encouraged to carefully select an approach in order to match the desired objectives of the study (Savin-Baden & Major, 2013).

In this case, I relied on constant comparison as my coding and analytical approach. Constant comparison was originally developed for grounded theory (Glaser & Strauss, 1967), but it is now a widely used method that allows researchers to develop themes and ultimately

explain qualitative phenomena (Savin-Baden & Major, 2013). It involves open coding of the data using both *a priori* and emerging codes, continually comparing codes and passages to those found earlier in the text for similarities and differences, examining patterns between codes to render categories, or themes, and repeating the process until saturation is reached. Thus, I first developed a set of *a priori* codes based on a review of the literature in academic leadership, faculty motivation, and negentropy. Emerging codes were then added to capture additional areas expressed by the participants. As I coded, I created analytical memos, or researcher journal entries (Saldana, 2013), on the computer to help me remember why I have coded certain items and to connect codes and passages to those found earlier in the text (Savin-Baden & Major, 2013). Codes were then be grouped into categories based on patterns, and finally preliminary and over-arching themes. Codes and their definitions are presented in tabled form in Tables 4.2 and 5.2.

Concerns for Quality and Trustworthiness of Results

Ensuring the quality and trustworthiness of data and findings is critical in qualitative research. In quantitative studies, validity and reliability are the primary concerns of researchers, but in qualitative research a range of approaches to validity and reliability exist, including credibility, dependability, transferability (external validity), trustworthiness, criticality, and reflexivity (Savin-Baden & Major, 2013). Some scholars contend tests of reliability such as inter-reliability do not apply to qualitative research, claiming that they are too grounded in positivist claims for knowledge (Kuzel & Engel, 2001). Nevertheless, several steps were taken to boost the trustworthiness of the data. Member checking occurred via email with participants following the interviews to verify areas of response that were unclear or to ask follow-up questions (Birt et al., 2016; Trochim, 2006). I also provided each interviewee a chance to review the quotes of theirs I used in the study and the context in which the quotes were used so they could make corrections or comments as necessary. This improved the credibility and confirmability of the data and allowed participants to add information that may have surfaced after the interview (Lincoln & Guba, 1985). "Rich" and "dense" descriptions of the data were provided in the project write-up to allow the reader to determine how credible, transferrable, and dependable the findings are (Trochim, 2006). I maintained an audit trail of important analysis products (e.g. analytical memos and coding tables), process notes (e.g. IRB paperwork and interview protocols), and calendar dates to demonstrate process and retrace

steps if necessary. Finally, from a self-disclosure standpoint, I provided a researcher positionality statement with each manuscript to be transparent about my theoretical leanings.

Triangulation of data, theory, and methods is also critical to trustworthiness. Data triangulation occurred through the qualitative interviews, the member checking process via email following the interviews, and the collection of documentary data such as internal or external documents to support the specific programs and initiatives mentioned by participants. Interview transcripts, written member checking responses, and documentary data were triangulated in the analysis. Theory triangulation occurred through using elements of critical theory and interpretivist approaches to understand aspects of power and culture in the analysis. Since pragmatic research is at the "meeting point" of description and interpretation, both objectivist and subjectivist perspectives were used. Finally, methodological triangulation took place in studies 1 and 2 through qualitative interviews and the collection of documentary data. Textual and content analysis were conducted for these two studies. For study 3, textual analysis of personal autoethnographic responses and personal documentary data (e.g. journal entries, emails, written material) were both employed.

Research Design for Manuscript 3

My final article of the MDIS was an auto-ethnography of my doctoral journey and my own "negentropic" socialization as an online doctoral student in preparation for a faculty career.

Overview of Autoethnography

Auto-ethnography is an approach to research wherein the researcher draws on their personal narrative to unpack how they experience a particular phenomenon (Ellis, 2004). It is a form of "critically reflexive self-storytelling" (Hughes & Pennington, 2017, p. xii) that reveals 1) counter-narratives to dominant claims of the culture and 2) sheds lights on implicit skills and knowledge needed to navigate those cultures. It is an approach to critical social research that has grown rapidly in the last twenty years (Boylorn & Orbe, 2014). It is seen as useful for linking various social and cultural issues to an individual context (Reed-Danahay, 1997). Often, auto-ethnographers view their positionality as advantageous to providing an insider's perspective on larger social or cultural issues. In my case, I told a story of being empowered to take a non-traditional path through my education by taking advantage of unique academic and professional opportunities that may have contributed to a negentropic

mindset. In addition, I reflected on ways in which I was *not* developed into a negentropic mindset and how this can be improved for future doctoral students. I wrote with a social constructivist paradigm.

Pilot Study

A duo-auto-ethnography with a fellow doctoral student served as a pilot study of sorts for this project. We wrote about our experiences as online doctoral students and fathers with an interest in a career teaching in higher education. As we met together and co-created knowledge about our lived experiences, we discussed ways in which our experiences as doctoral students have challenged norms of doctoral education, leading to disadvantages in some areas but advantages in others. We were both isolated from campus, with a limited number of role models to follow and role strain at home. But our educational process has also afforded certain benefits; for example, because I was not in a teaching assistant or graduate assistantship role, I had time to dedicate to special projects such as leading a major grant proposal with several other faculty. And being online students also allowed us to take advantage of outside work opportunities as they arise. This project provided new ways of thinking about how doctoral students could be socialized into the academy, especially as the percentage of online doctoral students continues to increase.

Autoethnography Process

Ellis (2004) compared the process of auto-ethnographic research to going "into the woods without a compass" and recommended one should take time to "wander around a bit and [get] the lay of the land" (p. 120). Some have criticized auto-ethnography as being too artful and not accountable to criteria applied to traditional ethnographies or research studies (Ellis et al., 2010). However, this form of research can be rigorous, analytic, and credible and not just focused on the "evocative" or emotional expression of oneself (Atkinson, 2006, p. 400). The auto-ethnographic process for each person varies but generally follows a course of reviewing the literature for themes on the research question, developing self-questions, reflecting deeply and responding to these questions, comparing the responses with the literature, and creating themes and findings. In responding to questions, participants can also engage various documentary data and artifacts like journals, letters, e-mails, and photos to recreate experiences (Hughes & Pennington, 2017). These provide evidence for claims and help improve the trustworthiness of responses (Duncan, 2004).

My process followed a similar course. I reviewed the literature on doctoral socialization and development of negentropic mindset (also informed by the results of studies 1 and 2) and developed questions about my own doctoral socialization. After reflecting on these questions, I searched the available sources documenting my life during my doctoral journey—monthly or weekly journal entries, many emails, and previous written material for other projects. This reflection was aided by conversations with my family, close colleagues, and advisor who are aware of my lived experience these last three years. Synthesizing these sources with my own thoughts, I wrote responses to the questions. The responses were edited through an iterative process until I feel they capture my lived experiences. I concluded with recommendations for policy and practice relevant to an audience of doctoral faculty and students.

Several limitations of this study exist. The written product only reflected my experiences and thus may not be generalizable to a larger doctoral student population. However, I wrote with the needs of this population in mind, so my audience may recognize linkages to common issues or challenges. Second, memory is fallible, and certain events will be impossible to fully reconstruct to give full justice to the experience. Thus, I began with the assumption that our memories, just like the meaning we ascribe to objects or events, change over time but still hold significance in how we see the world. Finally, regarding the ethics of auto-ethnography, there is a need to be concerned about representing others in an auto-ethnography who cannot represent themselves (Wall, 2008). Thus, if anyone could be reasonably identified from my story and might have been potentially damaged by the contents, I gave these people a chance to contribute their perspective to the article.

Researcher Positionality

Lastly, for all three studies, I provide a statement of my positionality to inform my audience of my personal outlook, values, and potential biases regarding my research topics. Doing so is an essential form of dependability in qualitative research (Given, 2009) and helps identify the influence of the researcher, including background, beliefs and biases, interests, and philosophical paradigms (Adu, 2013).

I am a White male currently pursuing a Doctor of Philosophy in Education with a research agenda focused on higher education organizations, faculty development, and diversity issues. I will be pursuing a tenure-track faculty role upon completion of my degree.

As an online student who first started my program part-time, and now as a full-time student studying remotely from campus, I have taken a non-traditional path through my degree. However, I have been intentional about accepting growth experiences outside the realm of coursework to develop skills for an academic career. These experiences and the forward-leaning approaches of my doctoral adviser have provided a unique perspective on how to prepare for the professoriate. They also shape how I approach this research study.

I approach this study with a perspective that learned excellence is possible for leaders in the academy. Previously, I served as an administrator and academic leader at a U.S. government university where I managed faculty in an educational program for international and U.S. military students. Due to this experience and various challenges associated with supporting faculty in a university environment, I developed an interest in understanding the behavior of effective academic leaders. I have seen examples of both poor and effective academic leaders. Because I have spent more time in a faculty management role than as full-time faculty, my outlook often leads me to identify more with the leadership challenges of leaders than the challenges of those being "led." I acknowledge this as a possible blind spot in my study. However, in many other settings I have been among the "led" and can relate to the perspectives of those not in leadership positions. My personal leadership philosophy emphasizes collaboration, service above self, and empowerment of others to act and take responsibility for their own decisions.

At a deeper level, my views in this study are shaped by various epistemological, ontological, and axiological frameworks embedded within me. Epistemology refers to the many ways of viewing knowledge and what "counts" for truth (Guba & Lincoln, 2005). Just as pragmatic research falls on the continuum between objectivist and constructivist approaches (Savin-Baden & Major, 2013), I also draw elements of both in my research outlook. This is not to "sidestep" important discussions on truth and reality (Feilzer, 2010) but to simply acknowledge that achieving actionable results in research requires the use of both lenses at times.

This paired approach also largely matches my outlook on the world. In some respects, I branch from convention that one must either be objectivist or subjectivist and that each form of knowledge exists in opposition to the other. As a Christian with a Latter-day Saint perspective, I believe all academic and spiritual knowledge is a subset of a larger whole, and

eternal laws and principles exist to connect each element of truth. Some of these laws we know now, and some we do not. However, within this divine framework, each person's circumstances and choices engender a unique outlook on their mortal condition—an outlook that must be accounted for in our research and in our human relations. Striving to understand these diverse perspectives, as imperfectly as we may, is vital to our individual progression. Thus, while I will search for objective truths related to leadership and organizations, I will also seek to understand my participants' responses through the lens of their individual experiences.

My ontological views are similarly styled. I take a realist approach to questions of existence, reality, and being. However, I also believe individuals can harbor "multiple mental constructions… dependent for their form and content on the persons who hold them" (Guba & Lincoln, 2005, p. 102). These constructions may vary, but certain generalized ideas and themes can be identified by amalgamating the experiences of many different people. Thus, when I talk with leaders, I will hold in awareness their differing individual realities while searching for the elements of a "single identifiable reality… that can be measured and studied" (p. 102) and that can be communicated to other leaders grappling with similar issues.

Finally, axiology asks not only what knowledge counts as truth but also what truths are worthy of our pursuit. All scholarship is value-laden or value-conscious, especially in qualitative research. In this case, I am aware that—even before a single interview is complete—the structure of my study has affirmed the intrinsic value of leaders and the necessity of organizations in regulating and advancing human affairs. Some may assert that organizations are increasingly unnecessary for education, for politics, for religion, for economic transaction, and for other dimensions of life, but I believe organizations do matter, not least because they provide a space for the essential roles of leaders, teachers, students to take place. They also serve our natural needs to interact, to co-depend, and to motivate and support each other. Leaders also matter because they fill an essential human role to lead and guide and to be led and guided. These values will color my study, analysis, and any conclusions I draw based on my findings.

Appendix: Tables

Table 3.1: Summary of Pilot Study Participants

Participant	Role Type	Gender	Age	Ethnicity	Highest Degree	Years in Online Teaching	Years in Management at Institution
Participant A	Director-level leader	M	45-69	White	Master's	18	2
Participant B	College-level leader	F	45-69	White	PhD	18	3
Participant C	Director-level leader	M	45-69	White	PhD	15	2
Participant D	University-level leader	F	45-69	White	PhD	20	2

Chapter 4: Good Energy: Fostering Faculty Leadership and Innovation for Institutional Change (Manuscript 1)

Abstract

Faculty-led innovation and change is critical for higher education institutions to confront a variety of contemporary challenges. However, fully engaging faculty in campus change efforts often proves difficult due to systemic forces driving faculty attention away from their institutions and faculty's early-career training and socialization models. This pragmatic qualitative study uses an emerging framework of negentropy adapted from the field of thermodynamics to explore how academic leaders can support faculty in innovating and leading change. Findings suggest a three-fold model of negentropic leadership in which leaders support faculty innovation through containing faculty energy loss, train faculty energy on defined problems and opportunities, and sustain energy through trust and appropriate incentives.

Introduction

Even before COVID-19, the outlook for many four-year higher education institutions appeared bleak due to declining funding, demographic changes, and a shifting market environment (Selingo, 2016). This sentiment was captured by the statement of one university enrollment director who called on his colleagues across the organization for help. He said, "Disruption is here to stay… For too long, the admissions dean or enrollment manager had the lone hand on the tuition-revenue tiller. Now, it's all hands (campus leadership, faculty, staff, trustees, etc.) on deck" (Conley, 2019, para. 19). His statement specifically calls out the role of faculty and others in helping the institution address challenges that were once the realm of administrators and staff alone. Indeed, the scope of faculty's duties has expanded in recent years to include not just teaching and research but also tasks such as admissions and enrollment, online program development, industry partnership-building, grant funding, and community outreach (Romano & Connell, 2015).

However, most faculty have not been trained, socialized, or rewarded to succeed in these tasks, nor would they consider themselves to be collective problem-solvers for their institutions. Their doctoral education, early-career socialization, and ongoing career experiences have been largely centered around individual achievement and autonomy rather

than the collective labor and leadership skills required to be effective change agents within their institutions. For many faculty, their working relationship with the institution has been defined as an "independent contractor" rather than one who sees their own fortunes as intricately tied to that of their employing organization (Lawrence et al., 2012). Yet, as the most permanent members of their home campuses, faculty are the lifeblood of their institutions whose ideas and innovation are needed for the future of their organizations.

How can colleges and universities better engage faculty as innovators and leaders for their institutions? At least one theme has been found to be consistent. Kezar and colleagues (2007) found almost every successful faculty change agent reported a supportive department chair, administrator, or other senior leader working in the background to understand, encourage, and support their efforts. They stated, "This supportive individual is more than a mentor; he or she is someone who can actually change working conditions to support faculty leadership" (para. 7). Thus while academic leaders—deans, department chairs, directors, and others—have very many tasks, among their most important may be the development of their faculty to be the true leaders and change-makers of their institution (Freeman et al., 2020).

This article focuses on the vital role of academic leaders in supporting their faculty members to lead out in innovation and change in addressing their organizations' ongoing challenges. Specifically, it addresses how leaders can support faculty in turning their energies inward by creating new activities, initiatives, programs, or ideas that address local challenges or create new opportunities for their home institutions. It examines this topic through the lens of a "negentropy" (Carr-Chellman et al., 2017), a thermodynamics principle that has only recently been applied to higher education.

Research Questions

The aim of this study is to better understand the association between good leadership practices of higher education leaders and the negentropic work of faculty members. Specifically, it addressed these questions:

- What leadership practices do high-performing leaders perceive to be most effective in fostering negentropic behavior among faculty members?
- How can leaders best support faculty in their "new" set of duties such as building online programs, creating industry partnerships, recruiting, and community outreach?

Background and Literature Review

To understand how faculty can be supported in their efforts to innovate and lead on their campuses, we must first understand the current forces at work in higher education, how these are changing expectations of faculty work and responsibilities, and the challenges many faculty and higher education leaders face.

Contemporary Challenges in Higher Education

Many contemporary challenges continue to test the strength of individual colleges and universities and affect the higher education ecosystem. These issues are often expressed as a trilogy of woes: diminishing public funding for education, looming demographic change with plateauing or declining numbers of enrolling students, and heightened competition and options in the marketplace (Conley, 2019; Ramaley, 2014; Selingo, 2016). In addition, deeper narratives within U.S. society continue to call into question the value proposition of college and challenge the credibility of the higher education profession (American Governing Board, 2015; Freeman et al., 2016).

Given these challenges, numerous predictions have been made about the future of higher education institutions from both public (Brenchley, 2015) and private sources (Selingo, 2016). Thinkers have predicted that many colleges will have to significantly change their business plan, offerings, and target student populations or face mergers, closures, or other serious ramifications in the decades ahead (Christensen & Eyring, 2011; Horn, 2018). Certainly, these challenges have affected some institution types more than others; small-market, liberal arts, and specialty schools, along with those with smaller financial footprints, have been most at risk. In spring of 2020, however, these issues became more mainstream as COVID-19 shuttered most college campuses and further destabilized institutions' plans for the future. Regardless of colleges' individual situations, there is an increased call for institutions to be more innovative, agile, and responsive to student needs in the decade ahead and to embrace a future that is potentially more online, connected, and uncertain (Kim, 2020).

Faculty's Changing Roles

These stresses on the traditional model of higher education converge with many pressures and challenges facing faculty in today's academy that prevent their full participation in innovation and change efforts. First, faculty are being asked to do more than their traditional scope of duties, and to often do it with less. Faculty have been called on to develop

expertise in new skills such as online teaching and new online program development (Elliott et al., 2015), marketing and recruiting (Romano & Connell, 2015), and partnership-building and outreach for their institutions (Carr-Chellman, 2014). But these changes come on top of increased pressures in publishing, obtaining external funding, and greater productivity (Abetz & Goodier, 2019). Further, due to constrained resources at many institutions, faculty may be receiving less administrative support, start-up funds, and ongoing research support than before.

Next, faculty's training and socialization do not always align with these new roles and expectations. This is particularly true early in a faculty member's career. Doctoral education is primarily seen as an independent endeavor (Blessinger & Stockley, 2016). Faculty are hired largely on individual accomplishment. New and pre-tenured faculty are encouraged to sideline service and leadership efforts to establish their personal research agenda and case for tenure (Abetz & Goodier, 2019) As some scholars have described, this lack of collective work, service, and leadership in the early career can set a precedent for disengagement in these processes later on (Kezar & Lester, 2011).

Third, ongoing rewards systems disincentivize investment in one's institution throughout a career. Promotion guidelines emphasize external funding and involvement. Yet, external funding, while a boon for the institution, is typically driven by outside goals and objectives of foundations and governmental agencies and can limit faculty's focus on creativity within their own institutions (Niehaus et al., 2017). Advancement guidelines also prioritize publishing in top journals in one's fields, yet top journals are typically more conservative than most regarding accepting new and innovative work (Hoffman, 2017), leaving innovators to publish novel scholarship in less prestigious outlets. External activities and pursuits within one's discipline gradually become a more prominent part of established faculty members' careers. Nichols (1995) described this disconnection from the institution as the "steady, irreversible shift of faculty allegiance away from the goals of a given institution, toward those of an academic specialty" (p. 5).

Finally, faculty morale within their institutions has suffered due to a deficit of trust between faculty and administrators (Bess & Dee, 2014). Various rifts have arisen due to tensions over resource constraints, personnel issues, equity issues, or greater emphasis on management or corporate approaches to governance by institutions (Martin, 2016). The

increasing presence of non-teaching administrators has also led to perceptions of marginalization of faculty's voice in campus decision-making (Kezar & Lester, 2009). This has many faculty questioning the value of institutional citizenship and service to their institutions (Lawrence et al., 2012).

Thus, asking faculty to invest in their institutions through innovation and leadership runs counter to the socialization, rewards system, and support many faculty feel they receive. Nevertheless, keeping faculty engaged in their institution's success is vital both for the institutions and for faculty's individual satisfaction. There is evidence that greater commitment to an organization results in increased individual satisfaction (Becker et al., 2009). Scholars have found when faculty have more opportunities to craft their work and take ownership of a particular issue or challenge, they experience revitalization and increased commitment to their organizations (Lee & McNaughtan, 2017; McNaughtan et al., 2019). Further, empowering faculty to identify forms of service in line with their interests can also increase satisfaction (Neumann & Terotsky, 2007). Investing creative energies in their institutions is one way that faculty can increase their own satisfaction and well-being in the workplace.

Critical Role of Academic Leaders

As Kezar and colleagues (2007) found, leaders like department chairs, deans, or directors play a key role in supporting faculty members' innovation and change efforts. But this support is not always assured. Kezar and associates went on to say, "Supportive department chairs are uncommon, however. Chairs are often overwhelmed by bureaucracy, untrained for the role, apathetically waiting out their rotations, lacking in sensitivity, or have forgotten what it was like to be an early career faculty member" (para. 8). Other scholars have added challenges such as the *ad hoc* way most leaders are selected for service (Selingo, 2016) and limits to the discretionary resources and incentives they can provide to their faculty (Holland, 1999; 2019). As higher education institutions have become more complex and corporate-like, some have noted that academic leaders must live with "feet firmly planted in two different camps: the world of academia and the corporate-informed world of administrative performance" (Bolman & Gallos, 2011, p. 147), and this space is increasingly invisible to those on either side.

What practices of academic leaders have been found to be most effective in supporting faculty? Broadly speaking, Candela and colleagues (2015) found positive administrative support, which includes elements such as leadership responsiveness, social and emotional support, recognition, and resources for professional development, to have highest impact on faculty's intent to stay at an organization. They recommended academic leaders strive to personalize relationships with faculty, understand their needs, and acknowledge their efforts. Daly and Dee (2006) concluded leaders who involve faculty in larger work projects and accept input in decision-making increase faculty's organizational commitment Holland (1999) found providing a diversity of awards and offerings, such as recognition, research and teaching support, and financial incentives to be more effective than any single approach. On a more practical level, leaders have also successfully engaged faculty through programs like the faculty symposium model that invites faculty participants to join an annual symposium based around a change initiative on their home campus (Hendricks et al., 2018; Morris, 2008).

Beyond these formal approaches, the need also persists for leaders to attend to the informal or implicit aspects of leadership. One critical informal element is understanding how power dynamics manifest in relationships between leaders and faculty members. As Pusser and Marginson (2012) stated, "Power is the elephant in the room. It would seem to be too consequential to miss, but many do" (p. 91). Leadership, management, and power are highly interrelated within academic organizations (Kretovics, 2020). A focus on power is important due to equity challenges arising from persistent low representations of minorities in higher leadership administrative positions (Wolfe & Dilworth, 2015; Eckel & Hartley, 2011) and faculty (Freeman, Krier, et al., 2019). Equity has been identified as one of the primary intrinsic motivations underlying faculty work (Daly & Dee, 2006). Power is not inherently a negative construct; rather it can be wielded for both positive or negative outcomes within an organization (Lukes, 2005)

Regarding faculty innovation in organizations, power has the potential to both enable and hinder the creative work of faculty and administrators. Bourdieu and Passeron (1977) argued higher education institutions have the ability to perpetuate the status quo in unseen ways due to internalized norms in the academy and society. Because decision-making in colleges and universities often occurs in a political manner through interest groups, coalitions, and negotiation (Baldridge, 1971), questions of who is represented, whose ideas are

considered, and who has decision authority factor heavily into ultimate decision-making. Leaders can utilize power to effect positive change and create space for innovation possible through diverse ways of thinking (Kretovics, 2020). Yet, they can also misuse their power to squash innovation, or worse, create unethical situations for faculty through asking faculty to involve themselves in these ways (Carr-Chellman et al., 2019).

In short, leaders occupy a symbolic position to define a culture that supports faculty investment in their institution (Thacker & Freeman, 2019), and this culture in turn has a powerful, pervasive influence on individual action (Hallett, 2003; Martin, 2002; Tierney, 2012). While we have a fairly good idea of the broad principles that leaders need to follow to create this culture—such as empowerment, involvement, recognition, trust, and understanding—what are some of the specific practices that can help leaders implement these principles and unlock the creative energy of faculty members? This study focuses on exploring the practical applications of these principles to enable leaders to support faculty in leading change for their home institutions. This is achieved through a framework called negentropy.

Theoretical Framework: Negentropy

The focus on energy in this study is a metaphor for understanding the flow of new ideas, knowledge, and activities within an organization. Viewing innovation as energy unlocks new ways of thinking about how innovation operates as an unseen but powerful force in an organization. One of these ways is through the concept of negentropy in the field of thermodynamics. The second law of thermodynamics states that all living systems naturally experience breakdown and disorder over time as energy leaves the system (Lucas, 2015). Like the melting of ice or the leaking of air from a tire, energy seeks to spread out in the highest configurable formation. This loss of energy, or decay, in a system is called entropy. In order to combat the natural forces of entropy and return to a state of order, living systems must have energy reintroduced into the system (Miller, 1992). This restoration of energy is called negentropy (Ho, 1994). Defined simply, negentropy is the "active counterbalance to entropy," (Carr-Chellman et al., 2019, p. 438). Negentropy occurs when "negentropic actors" in the environment release new energy back into a system. Figure 1.1 shows how this infusion of energy can do more than simply restore what was lost; it can also bring the system to a higher state of organization and integration (Carr-Chellman et al., 2019).

Obviously, the concept of entropy is not limited to physical or natural systems alone but also has relevance to organization and human systems. For example, Burt (2000) explained how human relationships succumb to the natural process of entropy unless efforts are made to infuse new energy—negentropy—through more contact or shared experiences. Heckman and Montera (2009) first explained how entropy can occur in educational organizations like schools through the breakdown of order and described how "negentropic actors" are instrumental in restoring this order by releasing energy in the form of new ideas and activities into the system. Since then, negentropy has been applied to higher education institutions in various ways by exploring how faculty members can have a "negentropic mindset" by engaging in energy-producing activities such as creating online programs (Carr-Chellman, et al., 2019), building external partnerships (Carr-Chellman et al., 2019), or leading multi-disciplinary teams (Freeman et al., 2018).

Negentropy is a multi-faceted concept that combines aspects of innovation, leadership, and organizational commitment, as depicted in Figure 4.1. For this study I am defining negentropy as *organization-centered innovation* that releases energy and moves the institution to a higher state of order and integration. A negentropic mindset differs from both an innovative mindset (Sidhu, Goubet, & Xia, 2016) and entrepreneurial mindset (Davis et al., 2016) in that it is a form of innovative thinking that does not just improve upon current practice but seeks to meet an organizational need and is motivated by organizational rather than solely personal gain. A negentropic mindset is also distinctly proactive—it seeks to be an active part of the solution rather than a passive participant in existing activities. Thus, it also differs from concepts of organizational citizenship and service (Lawrence et al., 2012).

The framing of the study with negentropy allows me to explain how leaders can foster and support the negentropic energy of their faculty members. I analyzed how leaders can "harness," "direct," "focus," or even "store" faculty energy through the tools and levers available to them. Regarding this role, Carr-Chellman and colleagues (2019) stated, "Leadership has to not just allow or encourage new offerings; leadership needs to help direct and focus these offerings in negentropic ways—ways that produce more integration and energy" (p. 442). Relatively little is known about how leaders can successfully "direct and focus" the negentropic efforts of faculty members.

At the same time, I also took a critical approach to understanding the relationship between leaders and faculty members given the numerous pressures of faculty life, the dominant reward system in operation, and current power imbalances in the academy (Martínez-Alemán et al., 2015). Because leaders sit in a position of power and influence over faculty, they may misuse their power or create unethical situations for faculty through asking faculty to involve themselves in these ways. They also have responsibility for balancing support for innovation equitably across the organization. Thus, questions of "whose" negentropy and innovation were also considered in this analysis.

Methods

This study used a pragmatic qualitative approach (Savin-Baden & Major, 2013) to understand the practices of high-performing academic leaders in fostering negentropy among their faculty. Pragmatic research is a methodological category of research increasingly used in qualitative research when a design does not align with well-defined approaches because it primarily seeks to uncover practical solutions to problems (Smith et al., 2011). Unlike other qualitative methodologies, it is not tied to a specific research method, but researchers choose from a collection of methods best suited to their research questions. Pragmatic research sits at the "meeting point of description and interpretation" (Savin-Baden & Major, 2013, p. 172) and offers both the ability to understand participants' perspectives in their individual contexts and to advance practical solutions over philosophical discussion (Smith et al., 2011). While pragmatic approaches have apparent flexibility, they are not to be a substitute for rigor and soundness in the research process. The following procedures were used for data collection, analysis, and reporting.

Data Collection

In this case, I chose qualitative interviewing as the primary method of data collection. Qualitative semi-structured interviewing is used to understand social problems through structured dialogue between researcher and participants (Creswell, 2013). My target population was current or former academic leaders at four-year institutions of higher education. These mid- to senior-level leaders of academic units included department chairs, deans, center directors, or other senior leaders with direct supervision of faculty in their portfolio. Questions were developed from a review of the literature on faculty motivation and

innovation and best practices in academic leadership. Interviews were conducted via a secure video or phone conference platform and lasted between 30 and 60 minutes.

Participant Selection

Of particular interest to this study were high-performing leaders who had encouraged their faculty to be involved in "negentropic" type behavior such as the development of online programs, new academic programs, industry partnerships, cross-disciplinary efforts, or other change initiatives that released new energy into the organization. Because of the need for information-rich interviews (Patton, 1990), I used a purposive sampling method (Creswell, 1998) that began with a screening mechanism of leaders who had attended one of two national higher education leadership academies that emphasize innovation in leadership. Using these academies' networks of alumni, I interviewed several former graduates who volunteered as participants. From an initial call for participants to over 35 graduates of these programs (exact numbers unknown due to use of organizational email list), three initial participants volunteered. Following these interviews, a "snowball" method (Savin-Baden & Major, 2013) was used to access additional participants recommended by interviewees as meeting the characteristics of my study. An additional 20 names were recommended through the snowball method, eight of whom agreed to participate in the study. A total of 11 participants took part in the study whose backgrounds are represented in Table 4.1.

Data Analysis

Given the developing nature of negentropy as a theoretical framework and the need to refine its application to higher education, a constant comparison (Glaser & Strauss, 1967) approach was used for data analysis. This began with an *a priori* list of codes, to which emerging codes were added during the analysis, as shown in Table 4.2. The analysis involved multiple readings of the transcripts and constant comparison of words and phrases in the text to passages found earlier in the text before assigning codes. Researcher journal entries (Saldana, 2013) and qualitative software aided in this process. Patterns between codes were examined to render categories, and categories were collapsed into themes for the research findings. The analysis emphasized thick and rich description of the participant responses (Trochim, 2006). Thus, rather than reporting numerous participant quotes for each theme, I focused on specific longer-form stories and examples and unpacked their meaning in the findings.

Limitations and Ensuring Trustworthiness of Results

Several limitations to this approach exist. Because initial participants self-identified as innovative and high-performing leaders, a potential selection threat emerged. Likewise, the self-reporting of data from participants introduced risks to the trustworthiness of responses. However, steps were taken to increase trustworthiness of results through the member checking process (Birt et al., 2016), which included setting participant quotes in the context of the potential findings and checking for congruence of meaning with participants following the interviews. I also sought documentary data such as websites or external documents as evidence of the new programs or initiatives mentioned by participants.

The limited sample size of my study also prevents wide generalizability of the findings. While 11 participants aligns with minimum recommendations for qualitative studies (Creswell, 1998; StatsWork, 2019), more participants would have strengthened the robustness of the results. Obtaining a larger sample was difficult due to the "semi-elite" nature of participants (Mikecz, 2012), meaning their participation was often mediated by gatekeepers and difficult scheduling requirements, similar to challenges ethnographers or other researchers face in "studying up" high-status populations (Seaver, 2014). Further, the participant group was not representative of the general academic leader population in at least two key ways. All but two participant volunteers were female academic leaders, and all 11 participants represent were White. These limitations are explored further in the discussion. Yet the richness and depth of responses from these participants strengthens the credibility to the results (Trochim, 2006). To preserve participant confidentiality, all responses all identifying information of participants has been blinded.

Positionality

Lastly, due to the purposive nature of sampling and the role of subjectivity in analysis (Trochim & Donnelly, 2008), I provide my positionality. I am a White male from a middle-class background currently pursuing a Doctor of Philosophy in Education. My professional background as a former administrator and leader of a small faculty unit at a university influences my views of contemporary challenges of both leaders and faculty. My lack of training in that role was all too typical of academic leaders, and my efforts in fostering innovation among the faculty showed me both the possibilities and the limits of what leaders can do through changing "working conditions" (Kezar et al., 2007, para. 7) of faculty.

Because I served in that role without full-time experience as a faculty member, I acknowledge that I may identify more with the leadership challenges of leaders than of those being "led" (Evans et al., 2013). Further, my leadership service as a member of several dominant demographic groups also colors my interpretation of my experiences. I have tried to bridge these gaps first through listening to the experiences of other faculty members—on why they have engaged in change, or why it has been difficult—and familiarizing myself with research on this subject. Like pragmatic research itself, my epistemological views are found at the meeting point of objectivist and constructivist thought. I believe leadership can be improved through certain objective truths embodied as strategies and practices. Yet perspectives on these practices can and will vary depending on one's vantage point within an organization. I draw on both lenses in this study.

Findings

In each of the nine themes below, I draw on examples, stories, or ideas shared by participants about fostering organization-centered innovation of faculty members. These examples are purposefully limited to one or two per theme to allow for rich description. Each theme is framed in terms of how negentropy, or "energy," can be introduced, preserved, and maintained in an organizational system through the support of an academic leader.

Limit Energy Loss by Creating Structure for Faculty Idea-Sharing

Participants mentioned a variety of formal and informal mechanisms that encourage faculty to invest creative energy on their challenges of their institution. Tabitha, a business dean, shared one practice she implemented when she saw faculty dropping off in their participation in local meetings and initiatives. She designed a monthly meeting with the whole faculty, organized like product design exercises, where faculty can share innovative ideas and brainstorm on educational challenges. She stated:

> I include monthly "How might we?" kinds of sessions with the full faculty. And I have to say, I end up with anywhere from a half to two-thirds of the full-time faculty that attend each one of those and some of them are doing it by calling or whatever. So, it seems to be something they're hungry for, being involved and engaged. And I think that's probably the secret thing, is to not disempower people because they can stop trying, and the farther along they are in their career the less likely they're going to come back and try again.

She observed that this regular structure increased the enthusiasm and innovative activity of her faculty, especially those further along in their career. Other leaders like Sharon, a theatre department chair, and William, a film chair, did not have separate meetings for idea-sharing but included space in their regular meeting schedule for faculty to lead brainstorming discussions of new ideas and concepts.

Beyond brainstorming, leaders like Tabitha, Terry, an education dean, and Theresa, an arts and sciences dean also spoke of the need for a formal proposal process for faculty members to submit new ideas or initiatives. Often this was a formal submission process reviewed by a board of colleagues who then awarded seed money or course releases to faculty to carry out the project. Such a process gave faculty members room to develop their ideas and prevented other faculty from questioning why certain faculty were awarded benefits. In other cases, requesting proposals also served as a leader's personal method for filtering between serious and casual ideas. For example, Terry stated her philosophy on requesting proposals, "If this is important to you, write a two-page proposal. Tell me how much it'll cost and tell me the timeline. And if people are serious, they will do that."

In creating these structures for listening and idea generation, participants saw themselves as limiting the energy loss that occurs when faculty ideas are not solicited or heard. This aligns with Carr-Chellman and colleagues (2019) who stressed the need for leaders to "account for areas where your institution is moving toward entropy and identify potential areas for negentropy to respond" (p. 446). Within academic organizations, participants felt this energy loss was occurring both on an individual and organization level through faculty sensing their ideas were not being heard. Tabitha shared a valuable caution that even welcoming new ideas or inviting proposals can cause energy loss when leaders are not serious about considering them. She stated, "I'm always careful about not asking people to put together proposals that you are not going to consider… I don't do that because it exhausts people, and it undermines peoples' trust in you." She believed proposals casually requested and considered would ultimately backfire and drive more energy away from the organization.

Harness Faculty Energy by "Getting to Yes" with New Ideas

As Tabitha's comment on exhausting people suggests, many leaders may claim to listen and be open to faculty input—like having an office comment box—but these actions may be insufficient unless the leader is actively working to help new ideas succeed. Nurturing

new concepts to fruition involves a separate skillset from simply seeking and considering new ideas. Participants felt that working with faculty members on their ideas was an interactive process that starts well before a formal proposal is submitted. Sasha, an education dean, told the story of how she responded when a young faculty member in another college proposed a fully online cross-disciplinary program in global development between his college and hers. She explained:

> He reached out to me with his idea because he's a former Peace Corps participant with a really a strong sense of social justice, which is in [our] mission, and I said to him, "We can't be accused of taking this degree program and owning it. You've got to go to those faculty in the [Global Studies] school and see how they would respond to this." And so he did, and they all wanted to be a part of the graduate program, but none of them had the time or the bandwidth to be able to write the proposal. … So, he came back to me and I said, "Well, as long as you will develop a committee and you seek their guidance on this, and we have complete buy-in from the get-go, then yeah let's see what happens." And so, he did, and oh my gosh, here we are a year later with a proposal that's been through the whole approval process, and we are just ready to roll that thing out.

Sasha's response highlights several aspects of a leader's role in "getting to yes." First, she placed the onus back on the faculty member to lay the groundwork for the initiative. While this may have appeared to rebuff his proposal, it actually further empowered him to prove the concept, similar to Terry's approach in requiring faculty to create a proposal and timeline with their idea. Sasha then asked her faculty member to rally his colleagues and show evidence of greater buy-in, which he did. Tabitha also recommended this strategy by asking her faculty who are bringing forward new ideas, "Who else should you involve in this and bring them into the conversation now before you write this proposal?" Finally, Sasha educated him on the political realities of pursuing such a project, which the young faculty member may not have fully considered. Through each of these steps, she was not only vetting the idea itself, she was developing this faculty member's personal leadership capabilities.

However, from a faculty perspective, such an approach may also have its pitfalls. In asking faculty to lay all the groundwork for an idea, a leader may impact faculty's already limited time and bandwidth. Some ideas may require a complete hand-off to the leader or

reassignment to another group simply because a faculty member is constrained in their time and energy. In addition, the developmental work may have been appropriate for a young faculty member, but more seasoned faculty may require a different approach.

Focus Energy on Defined Problems and Opportunities

The first two themes refer to ideas or proposals brought forward by faculty. However, there are times when a leader must look ahead and focus the energy of faculty members on a specific problem or opportunity. Concentrated energy is powerful, like a laser, but it must be used precisely to avoid detracting energy from other areas or creating unintended damage. Several leaders shared examples of focusing faculty energy on one specific organizational challenge or opportunity. Theresa described a concentrated effort in her college to build online teaching capacity and develop seven new online classes over the past year, which proved to be prescient leading up to COVID-19. Sasha described how, despite her initial reluctance, she took her faculty members' suggestions to begin an online doctoral program in higher education. She recounted how the college then experienced a revitalization of energy as the faculty came together to design the new program:

> I pulled together every graduate faculty in a big think tank, and I said, "Here's your charge, I want all of you to bring forward your ideas about what this EdD needs to look like and then bring your proposal to me." And, oh my gosh, it was the most exciting experience we have had. All the new faculty felt just as empowered as those who have been here 20 or 30 years to submit their ideas. I felt like they were more cutting edge, and they had just come out of doctoral programs. We really made it clear that everybody was equal and there were no ideas that we're not included.

The energy generated from this exercise was amplified through including the whole faculty. While later aspects of planning the EdD were carried out by a smaller team, opening the opportunity for all faculty to be involved in the ideation phase—typically the most exciting part of a project—created a buzz in the organization that yielded great results. This is consistent with Gumport's (2012) finding that when faculty are consulted on change initiatives—even after first opposing it—they may often become enthusiastic about the idea because of their inclusion.

Store Energy for the Right Time while Actively Proving Concepts

Even when good ideas are plentiful, it may not be possible to implement the best ideas immediately, and leaders need a mechanism to "store" energy for a more ideal time. Rather than shelve the idea entirely, however, there are steps a leader can take to prove concepts until the timing is right for their implementation. This is illustrated in an experience from Theresa who explained how a faculty idea for a digital storytelling program lingered for several years and then came together quickly to meet an emerging market need in their local area. She related:

> If someone comes to you and says, "I have this idea, will you listen to me?" you have to be willing to listen whether or not it's something you were really looking for. Because sometimes it takes the right moment for something to come to fruition. And we had that happen really recently. One of the faculty members in journalism and digital media has been talking for a few years about a master's program in digital storytelling. And this is actually a job description, believe it or not. I was looking on LinkedIn one day just a few months ago and there was a job ad for a company that was going to be hiring for three digital storytellers. And I went to her and I said, "Oh my gosh, this is a real thing. Let's see if we can put this forward." And this was February 2020, and I went up the chain and it looks very much like we will be launching this in the spring of 2021.

While Theresa's willingness to listen to her faculty member's digital story-telling idea is commendable, the timing of acting on the idea raises questions. Lifting a new program off the ground takes significant time, and waiting several years to implement the idea meant lost time in development to meet the emerging market need. The faculty member may have left the organization in that time, or the market may have been captured by another institution. So, when ideas are nascent and the need unclear, what can be done to test or prove concepts? Leaders can run a pilot program or implement a lower-stakes version of the idea like individual classes or a certificate program to better understand the demand signal from the market. For example, Terry discussed using pilot programs to prove concepts and collect data on faculty team-teaching proposals:

> Let's say you came to me with this idea of wanting to team teach a math and curriculum course. I might say "I can't afford to do that," or, "the budget doesn't allow

it, that's a lot of money," because of the use of two faculty. But then again, I might say that since they took the initiative and this is a great idea then why not do a pilot program for two years, collect data, and see if it's worth the college's investment in that?

Proving concepts with a small amount of energy may actually help conserve a larger amount of energy for later. This is relatable to a practice of some hydro-electric power plants. During off-peak hours, unused energy is used to pump water to a higher pool where it can be stored to create greater hydro-electric power when energy demand is high ("Types of Energy Storage," 2020). Similarly, a small amount of energy can be used to test ideas to prove a concept before large-scale deployment is needed. Equally important, this may also preserve the creative energy of the faculty members proposing the ideas.

Tap into Latent Energy by Engaging Faculty in All Career Stages

The next practice reflects that not all new energy needs to come from the outside. Sometimes a leader can tap into the latent energy in their human capital. From a thermodynamics perspective, latent energy occurs when a substance undergoes a "phase change" such as when a solid melts to liquid ("Latent Heat", n.d.). Energy is hidden within the substance until the phase change is complete and then is fully released. Similarly, faculty energy can be hidden during career transitions. This is especially evident at the end of faculty careers when enthusiasm may wane for more traditional faculty functions. Christine, a former biology department chair and current vice provost, and Gwyneth, an associate dean of education, both spoke about harnessing the energy of senior faculty for meaningful service and contributions to their institutions. Gwyneth stated:

> And then there are full professors at the end of their career thinking about retirement. One of the things that happens to those later in their life is they want to give back. And we need to figure out ways of harnessing that kind of energy and desire in ways that are meaningful, while at the same time… we have a senior person who is retiring tomorrow and they still want to tell us all how we're going to do things! And so, we've got to figure out a way to harness people. I want people's participation across their career spans. But we need to mentor and support people in how to do that in ways that are meaningful.

A leader may need to creatively activate this energy by asking faculty members to contribute to a special project, mentor a colleague, or become involved in a campus initiative that aligns with their experience. One way tenured faculty have been involved in greater campus initiatives at Gwyneth's school is a "Faculty Fellows" program that places faculty part-time in administrative offices around campus to work on a scholarly project related to those functions and to broaden their own awareness of local issues at the institution. The role is only expected to be four hours a week and pays a modest stipend, but it better integrates faculty with their home institution and places faculty in a position to contribute to issues important to their local campus. Similarly, Christine proposed a one-day "legacy retreat" for senior faculty at her institution to mentally shift gears and consider how they could turn their energy to mentoring junior faculty as well as ponder the long-term impact they hoped to have on their institution. She stated, "I really think it's about intention. It's giving some particular intention and space to people in that experienced group to potentially think about 'What do I do well, and how might I pass that along and mentor others?'"

Design Meaningful Interdisciplinary Work as "Alternative" Energy Source

As seen in Sasha's example of the online global development program and Theresa's digital storytelling program, interdisciplinary work can be effective not only for generating new energy but also for developing the leadership capabilities of faculty members. Interdisciplinary projects keep energy at the institution by allowing faculty to collaborate outside their traditional circles and by bringing disciplines into greater integration with each other. Sasha, Tabitha, and Michelle, a former arts and sciences dean and current associate provost, each spoke to the value of interdisciplinary work. However, they differed in how the work should be approached. For example, Tabitha felt that interdisciplinary work needed to be problem-based, stating, "Interdisciplinary work is expensive and hard, so there needs to be a reason to do it; we don't just do it for fun. … Make it problem-based: here's the outcome and here's the problem we need to address." On the other hand, Michelle viewed interdisciplinary work as more open-ended. She shared her practice at two different institutions of organizing interdisciplinary working groups for faculty without dictating the exact outcomes of the work. She stated, "It's kind of like you bring them together and then let them decide what projects are going to come from that instead of mandating something. It's a way for them to do something innovative." She felt it was best if the leader then stepped away Although their

approaches varied in that Tabitha was more prescriptive whereas Michelle was facilitative, both leaders saw their role in creating a structure for interdisciplinary work to initially take place, and both saw innovation result for their organizations.

"Diffuse" Negative Energy

Thus far all energy has been assumed to be positive, but what about negative energy like criticism or chronic resistance to change that can be introduced into a department or college? While positive energy is best concentrated on specific issues, some leaders advocated taking the opposite approach to handling negative energy by letting it disperse and not gather strength around one idea or area. Erika, who serves as provost and is a former graduate school dean, related a situation when a faculty member brought an idea forward for a master's program in clinical mental health counseling but was not supported by a faction within her department who had a competing vision for the department. Erika recounted:

> But this chair was very persistent, and she brought the idea to me and her dean. And we thought that it really had merit, so we supported her. And it turned into a bit of a political… some of the faculty in her department actually ganged up against her. They just did not think it was a legitimate offering. And when we looked at the research she had pulled together, it was really good, and it was clear that she was right. So we wound up having to separate the undergrad from the grad because they would not play nice in the sandbox with her… This new graduate program now seven years in has generated over four million in net revenue, 160 students, and it's a great success story.

Following this experience, Erika decided to disband the university's curriculum committee, which she perceived as holding up ideas like this coming from the college level. She found that novel ideas like the clinical health program tended to attract disproportionately negative attention in an overly rigid review process. Instead, she shared her strategy of keeping a constant flow of innovation coming from the schools to "diffuse" resistance around any one idea:

> I think that's also why it works to have decision-making dispersed across the schools for the curriculum because you have multiple things coming at the same time often, and people don't quite know where to attach if they're going to be resistant to something. Whereas if you've got one big thing it's like "oh all right, we're going to get our energies around resisting this."

Like Sasha's example of the online global development program, this practice again reflects the need to understand how leadership actions are perceived within and across units. Even if disbanding the committee was objectively the right decision to increase innovation, faculty may see the move as autocratic. Further, if faculty perceive that leadership is only attentive to the innovation brought forward by certain dominant groups, such as White employees or males, then larger issues of equity and inclusion must be discussed at the organization, and additional structures may need to be put in place to address power imbalances. In sum, if a leader views such an approach as necessary to increase innovation in an organization, there is an extra responsibility to gain trust with faculty members and ensure the leader's actions are perceived to be in alignment with their words.

Sustain Faculty Energy through Trust

In organizations where negentropic behavior is encouraged, a higher level of trust between faculty and leaders is arguably required. Erika's experience highlights the need to continually build trust with faculty to provide a degree of confidence that innovation and risk-taking will be supported and that ideas will be equitably considered from across the workforce. Erika followed up by describing how she balanced her "creative chaos" (Brafman & Beckstrom, 2006) leadership method with consistent work to develop trust with her faculty. She explained some of her trust-building practices:

> I try to get up close and personal with faculty because I have found especially at a smaller campus that if people know you, they are more likely to give you the benefit of the doubt. So, going to the dining hall, which is hard to do right now, but eating and sitting down at the table with faculty members and just getting to know them. I send notes, a lot of personal notes to faculty. When I hear about something that somebody has done that I think is terrific I'll send them a personal note. There are a lot of things I tried to do to demonstrate affirmation… You just can't substitute all those little acts of letting people know that you know them and you recognize their value. You build up a lot of social capital by doing that that you can then draw from.

In addition to trust between the leader and faculty, trust must be built laterally between members of a unit. The issue at Erika's institution highlights how rival factions can easily form around new ideas, even splitting close colleagues. Sharon, a chair of a theatre

department, has had success in building such a faculty culture. She related the value of collaborative work and "practical" experiences together as a faculty unit, stating:

> [Faculty] are aware of the work each other is doing. And they have that awareness because they like each other enough to listen and ask questions, but also because the work we do makes them colleagues of each other in very practical ways. They're doing projects together on a fairly regular basis. Not everybody with everybody, but enough that they have this understanding, and I think it benefits the whole team because you're getting this input from faculty colleagues who have a genuine interest in your success.

While theatre and the performing arts may lend themselves naturally to more shared experiences, other fields and disciplines still have opportunities for collaborative teaching, research, and service work that can be encouraged by the leader. A culture built on collaboration rather than competition can overcome corrosive forces that undermine the effectiveness of scholars in their work (Museus, 2020).

"Keep It Intrinsic": Interval Versus External Sources of Motivation

Finally, the question of faculty motivation for negentropy ran as a thread through each of the conversations. Regarding the impact of financial incentives, generally two camps emerged. The first is represented by Jenson, a sociology department chair, about motivating senior faculty to take on more than their traditional roles. He stated, "There are two ways to motivate senior faculty. One is more money, and two is time off." The second was Tabitha's assertion that intrinsic motivation fuels better, more consistent work. She said, "I find that I get much more consistent effort from people if it's not tied directly to—if I have to pay you to do it, you're probably going to do the [minimum]. …I try to keep it intrinsic." Her observation reaffirms what many scholars have found that pay is not a primary motivator for service to the institution and leaders are better off appealing to faculty's core value system (Holland, 2019). However, both Jenson and Tabitha agreed that leveraging scheduling and time off can be effective in supporting negentropic behavior. Tabitha continued by stating, "What I might do is suggest to chairs that maybe they use the levers of scheduling and professional development funding, or maybe doing some limited course release."

While most faculty incentives remain intrinsic, faculty are especially sensitive to impacts on tenure and promotion as it affects their future advancement (Drucker-Godard et

al., 2015). Sasha's institution has redesigned elements of its tenure and promotion system to embed faculty leadership in local initiatives into the standards. To achieve an excellent rating, it is not enough to be involved in service to one's campus, but faculty must be leading those efforts in some way. She described the system this way:

> We've developed guidelines for all three areas of evaluation: teaching excellence, professional development, which is what we call research and creative activity, and service. For service, in order to get the top rating, the excellent rating, you need to be involved in a leadership activity, and that would be not only being involved in a university-wide committee or initiative but leading that initiative.

She saw that this requirement has motivated some faculty who want to reach full professorship to get involved in leading change to achieve an 'excellent' rating. Yet, she was quick to add that internal motivation remains the most sustainable and desired attribute by her from a leadership perspective, stating, "That's kind of the role of the dean is to identify those people who have the internal motivation who can help you move ahead with interesting projects."

Discussion

Supporting faculty negentropic behavior is a complex effort, but it can also be simplified into a three-phase model. Based on these findings, the role of the leader in supporting the organization-centered innovation of faculty members involves: (a) containing the loss of energy among faculty at the institution ("contain"); (b) training faculty energy on defined problems or challenges ("train"), and (c) sustaining faculty leadership through ongoing trust and support ("sustain"). Figure 4.2 depicts this model, while Table 4.3 gives a summary of each role.

Contain. Leaders first work to identify sources of energy leaks and loss in the organization. Energy loss can occur individually as faculty feel their own ideas and voice have not been heard, or systemically if organizations lack forums or structures for faculty innovation to be seriously considered, including from underrepresented groups and identities. Energy loss can also occur at transitions between different career stages. To contain energy losses, negentropic leaders create structures that deliberately include and empower faculty to be part of the solution. Leadership practices such as holding "How might we?" sessions,

creating faculty proposal processes, organizing multi-disciplinary work, and opening meeting formats can improve the culture in this regard.

Train. Second, leaders train the energy of faculty on areas of greatest need in the organization. Train has a double meaning—the first being to focus or concentrate attention on a specific issue and the second to provide education or development in new or unfamiliar areas. Through identifying specific organizational challenges, organizing faculty "think tanks" around particular problems, constructing faculty exchange programs like the Faculty Fellows program, and other structures, leaders can harness the creativity and innovation of faculty members for institutional change. Regarding the other form of "train," leaders can create developmental experiences for all faculty to learn leadership and collaborative skills, such as Sasha did in responding to her new faculty member's proposal.

Sustain. Third, leaders sustain the negentropic energy and motivation of faculty members through trust, a healthy organizational culture, and appropriate incentives and performance structures. This also includes diffusing negative energy or resistance to change that may prevent innovation from occurring. In sustaining energy, they do not overlook the needs of faculty in their respective career stages where creative energy may be untapped, such as Gwyneth and Christine did with their senior faculty members. Negentropic leaders also seek to use the motivational levers available to them such scheduling, professional development funding, and promotional standards, while taking special care to preserving the values that underpin faculty's intrinsic motivation such as autonomy, flexibility, and equity (Daly & Dee, 2006).

One of the central tensions in supporting negentropic behavior is promoting freedom, or "creative chaos" (Brafman & Beckstrom, 2006), versus providing structure. Many of the strategies and practices put forward by leaders relate to having some type of basic structure that facilitates energy flow in the organization, such as a meeting space, a proposal submission process, an interdisciplinary working group, or formal program. Michelle remarked, "I guess what I've learned over the years is you have to have some kind of structure. You can't engage in magical thinking where you think it's just going to happen... You've got to put some structures in place." However, often the leader's role within this structure was described more often in terms of creating initial structure for discussion but not dominating those discussions or carving out a space for a program but not being involved in

every detail of this program. In fact, Michelle stated, "I think the real secret to good leadership is if you can find a way to extricate yourself from the thing, and the faculty carry on doing it."

Stepping away becomes more challenging if the leader is seen as a pillar of innovation themselves whom the organization depends upon for new energy. Erika identified this challenge now that she is approaching the end of her tenure as provost. She stated:

> One of the disadvantages of having a Provost who is so entrepreneurial that there is no idea I don't like. I could sit around and come up with new ideas until the day is long… Now I'm stepping out of the role, and I'm not sure if that's a healthy culture, because you really want to develop that culture for the long term across the board. And I think we have become a little too reliant on the administration coming up with new program ideas.

This challenge reinforces the need to develop the leadership and innovation capacity of faculty throughout their tenure. At a time when turnover is high in senior leadership positions in higher education (American Council on Education, 2016), faculty's career status arguably makes them the most permanent members of the organization whose ideas and leadership are most needed.

Lastly, these findings also reinforce the need for a stronger relationship of trust between leadership and faculty, which in higher education is explicitly a peer, not subordinate, relationship (Brubacher, 1970). Given this unique status relationship, leaders must truly understand the perspectives of their faculty members and foster more than a surface-level trust. Leaders like Erika may be justly critiqued for removing structures like the university curriculum committee that gave more formal voice to faculty. The onus remains on leaders to understand the impact of their actions across the workforce by actively listening to faculty and attending to possible equity issues arising in the quest for negentropy. Innovation and leadership may look different to different faculty. Thus, leaders can consider several key questions with their faculty such as, "What is meant by innovation, and whose definition of innovation should be supported?" Open conversations on these questions—coupled with consistent efforts to build trust—will improve the negentropic climate.

Implications for Policy and Practice

For academic leaders, these findings offer some pragmatic strategies to move from the philosophical to practical in their leadership work. Certain practices are more specific than others. For example, leaders can implement concepts such as "How might we?" sessions, faculty think tanks, interdisciplinary working groups, faculty symposia, proposal submission processes, fellowship programs, and open meeting structures. The specific details of these practices are helpful yet given the wide breadth of institutional types and settings, the greatest power will result by leaders applying the principles underlying each idea to a tailored practice for their own organizational settings.

These findings also highlight the role of *informal* efforts to create support negentropic practices and build trust with their faculty members. Sometimes overly formal initiatives can have the opposite effect of squelching innovation and undermining trust. Thus, the use of formal structures such as listening sessions, faculty think tanks, working groups, and proposal processes should be complemented with a leader's focus on individual interactions, one-on-one relationships, and the fostering of shared experiences that build positive culture and establish trust. In their interpersonal interactions, leaders can also play a key developmental role with faculty by helping them be successful in their change proposals and earn "small wins" that provide confidence for future efforts.

Another clear implication of these findings is in the training of academic leaders. The lack of training for leaders is all too common (Gmelch & Buller, 2015), and when training does occur it may focus primarily on administrative aspects of positions, rather than the organizational development and human relations dynamics of leadership. More resources for addressing the interpersonal elements of academic leaders' jobs are now available (see for example Advisory Board, 2011; Gmelch & Buller, 2015; Green & Leonard, 2018), along with a variety of regional and national leadership development programs. However, training need not always come from outside sources. Internal mentoring and socialization efforts are highly effective and often more successful at addressing interpersonal elements of academic positions (Gwyn, 2011). Given the rotating nature of leadership assignments, the next leaders will likely come from within the same academic unit. Thus, leaders should develop the leadership capabilities of all faculty members in their unit on an ongoing basis.

Future Research

Many elements of negentropic leadership could not be fully explored in this paper and merit additional study. For example, the role of motivation and incentives in faculty work still requires more attention. Many of the details about how to structure faculty incentives such as scheduling, course release, professional development funding, and faculty recognition programs require more understanding of their effectiveness. Another key area is understanding how leaders can help faculty members respond to failure in their negentropic efforts. "Failing forward" was identified by Carr-Chellman and colleagues (2019) as a key aspect of negentropic leadership; however, little is known in practice about how leaders actualize this principle. Third, the role of gender and race in negentropic behavior is also intriguing given the observation that underrepresented populations often bring some of the most outside-the-box and innovative ideas to organizations based on their life experiences (Rock & Grant, 2016). Only two out of eleven participants in this study were male, and most comments reported in this article were from female leaders. Does supporting negentropic behavior look different for male leaders, and how can the concept be adapted to inherent differences in leadership styles? Likewise, because of differing leadership style, are the voices of underrepresented groups heard to the same extent in proposing new ideas and innovations? Finally, additional work is also needed on learning the perspectives of faculty members on how academic leaders should support their negentropic efforts. A useful model may be the work of Evans and colleagues (2013) who analyzed the practices of academic leaders through the perspectives of faculty members—or "the led"—rather than only looking at the leaders from the outside.

Conclusion

Grassroots innovation and change efforts from *within* higher education institutions have the potential to transform higher education institutions more than any external initiatives (Maloney & Kim, 2019). Faculty are well-qualified to initiate and lead this innovation given their longevity and privileged relationships to their institutions, but their energy is often focused outside the institution rather than harnessed for local change. Academic leaders play a critical role in directing and supporting the negentropic behavior of their faculty members. In fact, the backing of a supportive department chair, dean, or other senior leader may be the single most important factor in whether a faculty member successfully participates in

innovation and change efforts or not (Kezar & Lester, 2009). But little remains understood on about how leaders can operationalize this support into everyday practice. This study has uncovered a variety of principles and practical measures leaders can use better foster and support the innovation and leadership efforts of their faculty. These findings are timely as higher education organizations continue to adapt to many contemporary challenges.

Appendix: Tables & Figures

Table 4.1: Summary of Participant Demographic Info

Participant Pseudonym	Role Type(s)	Institution type*	Region	Active Status	Years in leadership (cumulative)	Gender	Race/ Ethnicity
Christine	Vice Provost, Dept. Chair	Public Bac/D	West	Active	8	F	White
Erika	Provost, Dean	Private Master's/L	Northeast	Active	11	F	White
Gwyneth	Associate Dean	Public RU/VH	Midwest	Active	13	F	White
Jenson	Dept. Chair	Private RU/HRA	South	Active	5	M	White
Michelle	Associate Provost, Dean, Dept. Chair	Public RU/VH	Northeast	Active	8	F	White
Sasha	Dean	Private Master's/L	South	Active	12	F	White
Sharon	Dept. Chair	Private RU/HRA	South	Active	3	F	White
Tabitha	Dean	Private Master's/L	South	Active	5	F	White
Terry	Dean, Dept. Chair	Public RU/VH	Southwest	Retired	12	F	White
Theresa	Dean, Dept. Chair	Private Master's/L	South	Active	15	F	White
William	Dept. Chair	Private RU/HRA	South	Active	5	M	White

*Carnegie Classification: RU/VH – Research University (very high research activity); RU/HRA – Research University (high research activity); Master's/L – Master's College and University (larger programs); Bac/D (Baccalaureate Colleges: Diverse Fields)

Table 4.2: Summary and Description of Codes

ESTABLISHED FACULTY

Code	*a priori*	Emerging	Description
Incentives	x		Monetary, time, or other resource motivators behind faculty action
Intrinsic motivation	x		Internal sources of motivation such as student success, love of students, personal satisfaction and fulfillment
Financial incentives	x		Role of money or financial rewards in motivating behavior
State of higher education	x		Larger, system-wide issues identified by scholars as challenges or opportunities for higher education
Professional development	x		Role of formal professional development or training in preparing faculty for their responsibilities
Faculty review process	x		Performance evaluation systems for tenured and/or established faculty
Role of leader	x		Domain of leader responsibility as opposed to faculty or other actor
Leadership best practices	x		Leadership best practices for supporting tenured, senior, or long-standing faculty members
Innovation	x		New solutions or change to an existing problem
Trust	x		Trust between leader and faculty; the foundation for positive relationships
Feedback		x	Feedback either delivered or received by leaders in their relationship with faculty members
Listening		x	Willingness of leaders to listen and openness to hearing new ideas or thoughts from those they lead
Dismissal		x	Firing or non-renewals of faculty
Inter-disciplinary work		x	Openness to working across disciplinary boundaries. Also known as multi-disciplinarity or cross-disciplinarity
Faculty proposal process		x	Process where faculty can propose new projects and initiatives and receive institutional support to carry them out
Overcoming resistance		x	Leader's role in overcoming faculty resistance or from other sources of institution
Demoralization		x	Energy loss through not having ideas considered or voice heard

CROSS CUTTING CODES

Code	*a priori*	Emerging	Description
Examples of negentropy	x		Concrete example of new programs, ideas, or initiatives implemented by faculty as result of 'negentropic mindset'
Online education	x		Leaders' role in developing online education platform
Organizational culture	x		Culture of the department, college, or institution that sets expectations for behavior
Leader preparation	x		Formal or informal development for the leader to prepare for their leadership roles

Covid-19	x		Impacts of COVID-19 virus for higher education and its leaders
Doctoral programs	x		Program structure, content, and learning outcomes of doctoral programs
Student as negentropic actor	x		Ability of students to see themselves as agents of change for institution
Career preparation		x	Focus on preparing students for careers through the curriculum
Institution type		x	Category of institution and how this impacts innovation
Translation ability		x	Ability to translate research from specialist to non-specialist audiences and between academia and industry
Teaching		x	Core responsibility of faculty members to create curriculum, lead classroom discussion, and assess student work

Table 4.3: Role of Leader in Supporting Negentropy

| Role of Leader	Description	Leadership Practices
Contain	Leaders identify sources of energy loss in organization such as chronic disempowerment, lack of serious consideration of faculty ideas, career transitions, and external commitments, and they create structure to deliberately include and empower faculty in innovation and change efforts.	➢ Holding "How might we" listening sessions ➢ Creating faculty proposal processes with seed funding ➢ Organizing multi-disciplinary working groups ➢ Testing new concepts through pilot testing or small-scale action
Train	Leaders train energy and attention of faculty on specific challenges and opportunities of greatest need for the organization. They also provide training and developmental experiences in leadership and collaborative skills.	➢ Organizing faculty "think tanks" on a specific challenges or opportunities ➢ Faculty exchange, or "Faculty Fellows" programs with administrative offices on campus ➢ Changing meeting formats to raise faculty role in agenda-setting
Sustain	Leaders sustain negentropy through trust, organizational culture, and appropriate incentives and performance structures. They focus on unique faculty needs in each career phase.	➢ Promote shared experiences and collaboration within unit ➢ Leverage senior faculty in mentoring and providing service to institution ➢ Create faculty review processes that incorporate innovation and leadership ➢ Use non-financial incentives where possible such as project seed money or course release

Figure 4.1: Make-up of Negentropy
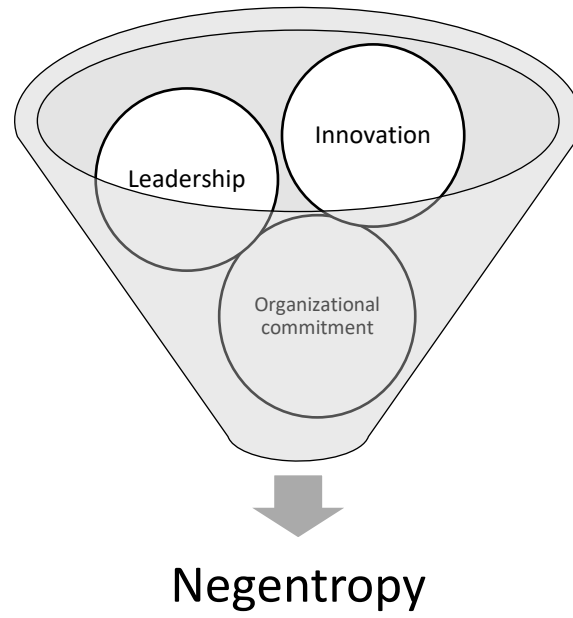
Figure 4.2: Model of Leader Support for Negentropy
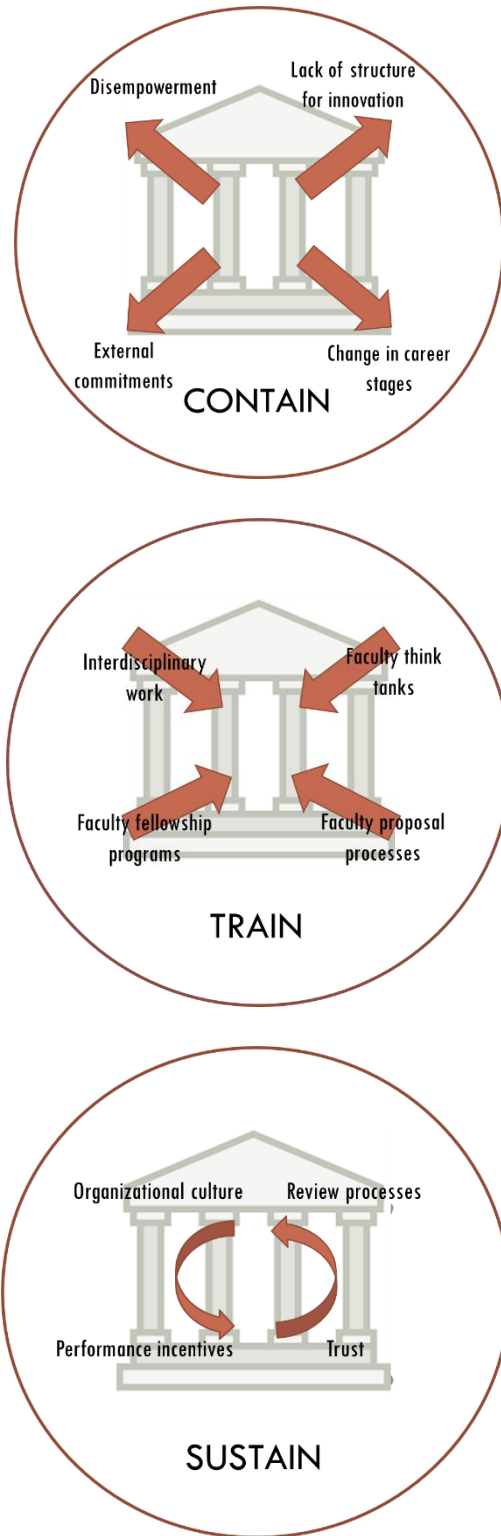
**Chapter 5: Rethinking Hiring and Socialization in the Selfie Era: Building a
Faculty of 'Negentropic Actors' (Manuscript 2)**

Abstract

Faculty are the lifeblood of any institution and their leadership critical to institutional change and adaptation. Faculty hiring and socialization are the most effective ways to build a faculty of change agents for their institutions, yet hiring and early-career socialization practices often reflect individually rather than collectively focused work, deemphasize innovation, and limit the leadership development of new hires. This pragmatic study uses a framework of negentropy from the field of thermodynamics to understand how academic leaders can support a mindset of institutional investment and innovation early in a faculty career through the hiring and early-career socialization process. Interviews with mid- to senior-level academic leaders reveal a number of practices leaders can use to improve hiring and early-career socialization including alternative assessment methods, selective mentoring, showcasing of faculty, faculty review frameworks, and strategic messaging.

Introduction

When Duke University opened its Kunshan campus in China, its leaders took an unconventional approach to hiring faculty to staff the center. Finalist candidates participated in an exercise with each other to design a curriculum for a new, interdisciplinary major. The hiring committee was less interested in the outcome of this exercise and more focused how each candidate approached their role in the simulation. The hiring dean described the committee's philosophy: "We're looking for people who aren't primarily focused on benefits packages and teaching loads," but rather those "who find appealing the idea that they're taking on something bigger than themselves" (Ferreri, 2018, para. 17). Once hired, these faculty would be expected to immediately begin contributing to building the young institution through developing new courses, teaching in interdisciplinary programs, and generally helping the organization in any way needed. Faculty would need to learn quickly how to "fit their individual contributions into a larger whole" (para. 10).

The identification, hiring, on-boarding, and eventual socialization of new faculty into an institution are arguably some of the most important jobs of an academic leader. These critical inflection points occur only infrequently and represent golden opportunities for

shaping the faculty workforce and culture from the bottom up. Yet, the hiring and socialization strategies employed by many leaders often reinforce individual norms and disincentivize early-career faculty from participating in innovation and change efforts at their institutions (Neumann & Terotsky, 2007), setting a precedent that can last throughout a career (Kezar & Lester, 2011). Such methods may have worked in former times, but new approaches to hiring and socializing of faculty—like the Duke-Kunshan example—may be needed as faculty are being called upon to innovate, lead, and guide their institutions through uncertain times (Conley, 2019).

This paper explores the role of academic leaders in redesigning the hiring and early-career socialization processes of faculty members to identify innovative and collectively minded hires and to remove barriers to their innovation and leadership earlier in their career at the institution. This topic is viewed through the lens of a "negentropic actor," (Freeman et al., 2017) a scientific concept metaphorically applied to higher education leadership to describe individuals who infuse energy into their organizations through new ideas, activities, and collective solutions to institutional challenges.

Research Questions

1) How do high-performing academic leaders describe their strategies for hiring and socializing faculty members as potential negentropic actors for their institutions?

2) How can leaders redesign the hiring and early-career socialization process to capture the innovation and leadership of faculty members early in their career?

Background and Literature Review

The challenges associated with hiring and socializing new faculty members have been discussed at length by numerous scholars. These challenges intersect with recent changes in expectations for faculty work and the ongoing work of academic leaders. Background on each of these areas is provided to set the context for this study.

Faculty Hiring and Early-Career Socialization

The hiring and early-career experiences of faculty members at their institutions must be understood through the lens of a number of systemic and structural issues in higher education. These forces are widely discussed by scholars and include the rise of the rankings establishment and competition for institutional prestige (Museus, 2020; Pusser & Marginson, 2012), shifting governmental support (Martin, 2016), neoliberal forces such as "academic

capitalism" (Slaughter & Rhoades, 2004), and an increase in the contingent faculty workforce with extreme competition for stable academic jobs (American Association of University Professors [AAUP], 2018). These forces initiate a chain-reaction of emphasis on individual achievement and personal productivity that begins in graduate school and continues through the faculty career span. For example, doctoral students with faculty ambitions are encouraged to pursue independent research and strive to build a record of individual accomplishment to compete for scarce faculty positions (Wergin & Alexandre, 2016). Then early-career faculty members, if job seekers are fortunate to land a position, must resume their individual labor to qualify for tenure, a process that has sometimes been called the "ivory sweatshop" (Wilson, 2010, title).

Individual norms are further reinforced as many early-career faculty are discouraged by their leaders from participating in serious service or leadership work at their institutions. Many leaders discourage such activities as a form of protection, reasoning this service may distract young faculty's attention from meeting tenure requirements or jeopardize relationships with their colleagues (Abetz & Goodier, 2019). This tendency is particularly strong at research institutions, although it can occur in other institutional types. Instead, faculty are encouraged to forge external connections and push further into their disciplines through hyper-specialization. As a result, faculty may come to view themselves more as independent contractors and develop a stronger identification with their field than home institution (Lawrence et al., 2012). Nichols (1995) described how the norms of faculty activity begin to move "away from institutionally defined goals and toward the more specialized concerns of faculty research, publication, professional service, and personal pursuits" (p. 5).

Though well-intentioned, this emphasis on individual-focused work and removal from leadership and service opportunities may have the unintended impacts of shaping faculty members' mindsets and skills later in their career. Kezar and colleagues (2007) described one possible side effect of these norms from a faculty leadership perspective:

> The lack of participation in leadership activities during the pre-tenure years may inhibit faculty participation later. … After years of training and working independently and autonomously, faculty may find it difficult to engage in the types of activities that are required of grassroots leaders, such as creating a vision, developing networks, and organizing multiple people. (para. 5)

Conversely, Kezar and her team found those who were successful faculty leaders later in their career had ample experience with teamwork, service, and opportunities for leadership earlier in their careers.

New Faculty Roles and Expectations

Simultaneously, due to uncertain futures for many four-year higher education institutions, faculty roles and responsibilities are changing to include greater expectations for faculty involvement in addressing local challenges. New market conditions are increasing demand in new skill areas such as online teaching and course building, student recruitment, partnership-building, grantsmanship, digital collaboration, and community outreach, among others (Lawrence et al., 2012; Romano & Connell, 2015). While some faculty are naturally successful in these roles, for many others, these are unfamiliar and uncomfortable tasks for which they were not trained to perform. Their doctoral work and early-career training are often not aligned with these aims. For example, in the area of enrollment management, "it is atypical for most faculty to consider ongoing marketing and recruitment of new students a part of their job" (Carr-Chellman, 2014, para. 7).

Despite their reluctance, faculty are being asked to take a more active role in collective problem-solving as new pressures bear on their institutions. This was especially pronounced during the COVID-19 shutdown as faculty were asked to skill up quickly in new teaching areas, do more with less resources, and become more involved in helping their campuses respond to the enrollment and budget fallout of the pandemic (Kim, 2020).

Challenges of Academic Leaders

Lastly, it is important to understand the perspective academic leaders bring to hiring and socialization. Leaders play a key role in supervising the hiring process, constructing early on-boarding and orientation efforts, and shaping the ongoing training, goal setting, and mentoring of new faculty. Whereas hiring has a definitive outcome, socialization is a much more nebulous process that takes place in "the less dramatic, ordinary daily occurrences that take place as we go about the normal business of being a professor, student, administrator, or staff member" (Tierney, 1997, p. 3). Thus, leaders are charged with not only selecting the right person for the position but also creating an overall environment that supports the ongoing development of that individual.

Academic leaders have been historically under-trained for even the most basic duties of their positions and are often ill-equipped for hiring and other responsibilities (Gmelch & Buller, 2015; Selingo, 2016). Several structural barriers also contribute to their challenge. Leaders operate within a tenure and reward system that carries enormous influence over faculty behavior (Neumann & Terotsky, 2007), and they often lack the flexibility and discretionary resources to provide additional incentives to faculty (Holland, 1999, 2019). Nevertheless, some leaders are successful in unlocking the creative energy of faculty. Kezar and colleagues (2007) found a supportive academic leader to be the first and most consistent theme cited by faculty who took part in leadership efforts throughout their career. They stated, "This supportive individual is more than a mentor; he or she is someone who can actually change working conditions to support faculty leadership" (para. 7). Working conditions in the early career include teaching and research loads, expectations for service, training, and mentoring and other social support received as part of socialization. The leader's role in changing these conditions in the early career, along with their impact on hiring, forms the basis for this study.

Theoretical Framework: Negentropy

This discussion on hiring and socializing of new faculty members is framed in terms of negentropy, a concept well-known only within the field of thermodynamics. Negentropy stems from a more commonly understood principle of entropy in the second law of thermodynamics. Entropy occurs when energy in living systems—natural as well as organizational—disperses and becomes disordered due to changes in environmental conditions. For example, ice melts in the presence of heat, air escapes through a hole in an inner tube tire, and even papers on an office desk do not seem to stay in their proper place for very long. Entropy is a measure of the energy loss and decay resulting from this disruption. Fortunately, there is a counteracting process that restores energy and order to a system, and this is negentropy. This occurs as "negentropic actors" in the environment release energy back into the system and stave off disintegration (Freeman et al., 2017). Figure 1.1 depicts how this new energy not only restores order but also can bring the system to a higher state of organization and integration.

From an organizational standpoint, negentropy is closely related to systems theory (von Bertalanffy, 1968; Wheatley, 2006), which has been popularized by concepts such as

systems thinking and learning organizations (Senge, 1990) by describing how organizations interact with their environments. Heckman and Montera (2009) were among the first to apply negentropy to educational systems. They detailed how entropy naturally occurs over time in schools through the breakdown of order and described how "negentropic actors" such as teachers, staff, and administrators can introduce new energy into educational systems in the form of new ideas, activities, knowledge, and innovative solutions that disrupt the forces of decay.

Higher education institutions have struggled with their own forces of decay in the recent past with erosions in enrollment, funding, public support, and shared governance, along with more recent challenges of pandemic closures and online learning. The resulting energy "loss" from these challenges has increased the urgency for leaders to seek negentropic actors who can release energy back into these organizational systems through new ideas and innovation. Faculty have been identified as the "backbone" of higher education institutions whose negentropic ideas, innovation, and leadership are most needed by these organizations (Freeman et al. 2017). Examples of faculty negentropic behavior may include "capitalistic" efforts such as creating new online programs, recruiting new students, developing industry partnerships, or pursuing grants, or they may include smaller innovative actions such as revamping teaching, redesigning workflows, or reconceptualizing roles. The key is negentropic faculty see their individual success as intricately tied to their institution's (Freeman et al., 2018).

Negentropy is a multi-faceted concept blending innovation, leadership, and organizational commitment as depicted in Figure 4.1. In this paper, a negentropic actor is defined as an organization-centered innovator. A negentropic actor has characteristics related to both innovative (Sidhu, Goubet, & Xia, 2016) and entrepreneurial mindsets (Davis et al., 2016) but differs in a few key ways.. For example, faculty member X may be innovative and committed to the organization but wait for instruction to innovate rather than lead out in change. Faculty member Y may be both innovative and initiate change, but their energy is pointed toward personal profit or gain rather than collective good. Faculty member Z is negentropic because they take initiative in innovating with the goal of helping to address a current challenge of the organization—thereby releasing new energy into the organizational

system. Negentropic individuals seek to innovate and lead change at their organizations rather than wait for exogenous circumstances to bring about this change (Hasanefendic et al., 2017).

Importantly, the work of negentropic faculty does not happen in a vacuum but is supported by effective academic leaders. Leaders not only encourage negentropic actions, they also "direct and focus these offerings… in ways that produce more integration and energy" (Carr-Chellman et al., 2019, p. 442). Recent work on negentropy has largely focused on the perspective of faculty members in adopting negentropic mindsets, such as through online learning (Carr-Chellman et al., 2019) and early-career socialization (Freeman et al., 2019). However, limited work has been done on the *administrative* side of negentropy, such as what leadership practices are most effective in directing and focus this energy of faculty. This is particularly true in understanding the leader's role in hiring and socializing faculty members.

Methods

This study used a pragmatic qualitative research design to understand best practices of an academic leader in hiring and socializing new faculty members as negentropic actors for their organization. Pragmatic research is distinguished from other categories of research in that it accepts a variety of practical methods to answer a research question rather than engaging in "methodological acrobatics" (Sandelowski, 2000, p. 334) to shoehorn research into one category or another when a good fit does not exist. This form of research is often aimed at finding actionable policy or practice recommendations, which may explain why its use is expanding across such fields as education, health, and business (Smith et al., 2011). However, pragmatic research does not obviate the need for rigor and soundness and still requires researchers follow a systematic approach in each step of the research process (Carter et al., 2014).

Data Collection

My specific method for carrying out this pragmatic study was qualitative semi-structured interviews with current or former academic leaders at four-year U.S. higher education institutions. Qualitative interviewing allows both the researcher and the participants to become co-creators of knowledge through structured dialogue in an interview format (Seidman, 2013). My target population was defined as mid- to senior-level leaders such as department chairs, deans, associate deans, or center directors with direct responsibility for the

hiring and supervision of faculty members. Interviews with these leaders were conducted via secure video or phone conferences over a span of three months with interview questions centering on faculty hiring, socialization, and best practices of leaders in promoting innovation and leadership early in faculty members' careers. Questions for the interview were developed through a review of the literature on faculty hiring and socialization and academic leadership. Given the semi-structured nature of the interviews, the original set of questions served as a guide but not a master of our conversations.

Participant Selection

Of particular interest to this study were those academic leaders who had encouraged their faculty to be involved in "negentropic" type behavior such as the development of new programs, creation of industry partnerships, outreach to new student populations, or other change initiatives that released new energy into the organization to help address an ongoing challenge. I deliberately sought participants with an orientation or capacity for innovative behaviors in their leadership style, as I believed their responses could "maximize the possibilities of obtaining data and leads for more data " (Glaser, 1978, p. 45). This purposive approach (Trochim & Donnelly, 2008) led me to contact two national leadership academies for higher education leaders that emphasize innovation in leadership. Utilizing their network of alumni, I interviewed several former academy participants who responded to a call for volunteers. From there, I used the "snowball" method (Savin-Baden & Major, 2013) to access additional participants through interviewee recommendations. Eleven participants took part in the study whose backgrounds are represented in Table 5.1. Prior to each interview, I researched the participant and their institutions to be familiar with any new programs or initiatives to discuss in the interview.

Data Analysis

Pragmatic studies often "mark the meeting point of description and interpretation" (Savin-Baden & Major, 2013, p. 172), and no single analytical or coding approach fits neatly. Rather, the researcher must carefully select an approach that matches the desired objectives of the study. In this case, I relied on a constant comparison approach (Glaser & Strauss, 1967) of data analysis that involved coding of the data using both *a priori* and emerging codes, continual comparison of the codes and passages to those found earlier in the text, examination of patterns between codes to render categories, or themes, and the repetition of the process

until saturation was reached. These codes and definitions are found in Table 5.2. The use of analytical memos, or researcher journal entries (Saldana, 2013), and qualitative coding software aided in connecting codes and passages to those found earlier in the text. The analysis emphasized thick and rich description of the participant responses (Trochim, 2006).

Limitations and Ensuring Trustworthiness of Results

Naturally, the results of this study are limited to academic leaders at four-year institutions where leaders and faculty members are organized by formal academic units such as departments, centers, or colleges. Further, generalizability is constrained by the small number of participants, although a sample of 11 participants is in line with minimum recommendations for qualitative studies (Creswell, 1998; StatsWork, 2019). Obtaining a more robust sample was difficult due to the "semi-elite" nature of participants, which limited access to participant pools (Mikecz, 2012). Nevertheless, the richness and depth of responses from these participants adds credibility and dependability to the findings (Trochim, 2006). Data in the interviews was triangulated through the collection of documentary data where available such as external websites detailing the specific programs and initiates at the institutions or information shared by participants following the interviews. Trustworthiness of responses was also strengthened through the member checking process via email following the interviews to verify areas of response and ask follow-up questions (Birt, Scott, & Cavers, 2016). All responses include pseudonyms of participants and any identifying information has been blinded.

Finally, given that purposive sampling and qualitative analysis relies heavily on the judgment and subjectivity of the researcher (Creswell, 1998; Trochim & Donnelly, 2008), I offer a word about my own positionality. I am a White, middle-class male pursuing a doctorate in higher education. I am also a former higher education administrator and leader of a small academic unit at an institution where I managed several faculty searches and supervised several early-career faculty members. I have also been a candidate in several faculty search processes in my field, but I have not experienced serving in an early-career faculty role. Thus, I acknowledge my perspectives are limited on the unique challenges early career faculty members face. Through seeking to learn the experiences of faculty both in personal interaction and through the extant literature, I hope to more accurately speak to these challenges.

Findings

Every academic leader in the study stated that faculty hiring and socialization were among their most important jobs. These findings largely center on the intentional actions that leaders felt was within their power to take to find and develop negentropic actors in the hiring and socialization processes. These strategies include four primary themes: (a) communicating a compelling vision, (b) creating systematic and holistic hiring structures, (c) building a smooth on-ramp for new faculty hires, and (d) providing meaningful early-career service and leadership opportunities.

Communicating a Compelling Vision for Hiring

Leaders expressed the need to send a clear and compelling message about the goals of the hiring process that begins with personally charging the search committee. Holly-Anne, a business dean, stated "The number one job we have is to hire well, so I always charge the search committee." Three common themes arose among leaders in the messages they gave to those conducting the hiring process.

Look for Future Not Just Present Challenges: First, leaders stressed that committees should look for individuals with the skillsets and dispositions to help their institutions meet coming challenges and changes in higher education. This vision is reflected in the types of questions Shane, a sociology department chair, asks his hiring teams to consider going into a search:

> Who are the people who will be willing to be contributors and to not just go through the motions on committees but to come out with ideas and help nurture ideas that will help make [our institution better]? ... Higher ed really faces in many ways a crossroads in the next ten years and we've got to figure out which way we're going to go. Actually, it's going to come sooner than that. Can they help us come out with innovative ideas to go after and identify future students? Can they provide the types of experiences undergraduate students want to have?

Shane's response includes a reminder of the rapid changes that institutions are experiencing and links these changes to attributes of innovation, leadership, and collective work needed in new faculty members. Many other participants mentioned similar skills and dispositions in candidates—mostly frequently citing the ability to collaborate and work collectively within an organization. These are consistent with "twenty-first century skills" of collaboration,

communication, and creativity named by policy-makers and higher education leaders (Wright & Miller, 2007). Holly-Anne continued, "It is setting that expectation in their minds that this is a real opportunity for us, so let's get somebody we're really excited about."

"OK to Fail." However, such a rousing pep talk may not be the only message needed from a leader. Paradoxically, these instructions to a hiring committee may need to be accompanied by another, more measured message—that failure *is* an option. Both Holly-Anne and Scarlet, a former biology department chair and current vice provost, separately spoke about the need for leaders to put themselves in the position of the hiring committee and understand their mindset going into a search. Committee members may be concerned about not succeeding in a high-visibility task or losing funding for a position if a search is delayed. Holly-Anne stated:

> I think it's really important to come from the top of the institution to say, "You have permission to fail a search. You have permission to look for the qualities that we are looking for." So, I probably have a pretty high first time fail rate on searches. … When a candidate applies there's always this false sense of, if we don't fill this position, we're going to lose it. And having been at this for a while, I recognize that I'm better off with no one than the wrong person. So, we'll wait.

Scarlet stated, "I just think the market is so saturated for pretty much any faculty position, you should be able to get the person you want." Yet, some urgency can be healthy, and the leader may also need to intervene when searches drag on too long. The key is to not allow scarcity of resources to make for a hasty or unwise decision.

"Mix It Up." A third element of the leader's communicated vision is not settling for the status quo but seeking a diversity of backgrounds, skills, and perspectives in candidates. Faculty diversity has been an emerging topic (Freeman et al. 2019) not only from racial and gender standpoints but also in terms of career backgrounds and educational experiences of candidates (DiRamio et al., 2009; Freeman & DiRamio, 2016). Six of the eleven participants emphasized the benefits of seeking diversity in the hiring process. Alana, a former graduate school dean and current provost, commented how she saw "mixing up" the sources of faculty recruitment and candidate pools as key to contributing to the innovation potential of her institution:

We've gone to great lengths to try and mix it up. … One of the things that's going to kill the academy for a lot of small schools is you've got so much in-bred thinking and lack of diversity. So, you have faculty in the departments who reinforce each other's ignorance in terms of what's happening and the way the academy is supposed to work. And boy that's a really hard thing to change. Unless you're bringing in an infusion of fresh and different ways of thinking from the outside and intentionally mixing it up.

In this same vein, several participants discussed candidate "fit," or alignment with mission, as a crucial element of hiring. Fit is simultaneously a positive attribute, as exemplified by Shane's observation: "It always comes down to fit. You've got to hire right. If you only look at the research record… you get high-quality people in terms of the research, but you may find someone who causes issues in the department." But it can be problematic if it means simply replicating oneself and not remaining open to different ways of doing things. Bobbi, an associate dean of education, Adele, an arts and sciences dean, Scarlet, and Katelyn, a former arts and sciences dean and current associate provost, all commented on the tendency to conflate candidate "fit" with sameness. Bobbi suggested one way to resolve this challenge is by having explicit conversations about what we mean by certain words:

I'm saying that sometimes when you think about fit you can get in a place where you are replicating what you have, and I just think we have to be really careful. I mean fit can be a code word for problematic ideas... So how do I bring a new people who will get us to be engaged and will care about the whole, etc.? They also might have different ways of doing things and different perspectives. I just think reminding ourselves about what do we mean when we mean 'good', and what do we mean when we mean 'colleague,' and keeping that in our minds is important.

Thus, in communicating a vision, a leader must manage the tension between reproducing what has worked well for the organization and remaining open to yet unknown opportunities that may work better.

Creating Systematic and Holistic Hiring Structures

A second fundamental role articulated by leaders was in creating systematic hiring structures for effective judgments to be made about difficult to measure concepts. Although senior leaders may not be intricately involved in carrying out the hiring processes, they lay the initial groundwork for a successful decision. One way that leaders influence hiring is through

creating structures that systematically emphasize the values sought in the hiring process, even if these values are inherently hard to measure.

Value of Systematic Structures. Leaders like Shane called evaluating for holistic candidate traits like teamwork, collegiality, or collective mindset to be "probably the toughest challenge in terms of hiring." Comparing one's intangible qualities to another's can be a fraught process leading to poor decisions. Hiring structures that are systematic and repeatable can help. Systematic structures include a clear job description, a screening matrix that builds from the description, and consistent assessment activities for evaluating each candidate. Vanessa, an education dean, brought such a framework with her to her current institution from a large public system and explained how it helps her school target individuals who are collectively minded and oriented to being part of a team:

> We had very systematic approaches to hiring, and so we had rubrics that were created for screening applicants and for interviewing the applicants. And on both of those we try to elicit information from the candidates that demonstrates how they are collegial, how they are interested in being a member of a team, how they are focused not just their own career interest but on the career and support of both students and their colleagues.

When evaluating for these candidate traits, nearly all participants felt that one single measure was ineffective, so leaders had to develop several proximate measures and "triangulate" the responses. For example, Table 5.3 lists a variety of approaches mentioned by participants to assess the collegiality question. Some of these approaches stand out for particular attention. Shane arranged for candidates to meet twice with graduate students, first in a more general setting to get candidates' ideas for graduate education and second in smaller groups to talk about students' research projects for potential interest matching. Vanessa stated, "Whenever we call references, we ask very purposefully this question—on a scale of 1 to 10 how do you rate this person on their ability to be a member of the team?" Others mentioned using unlisted references, personal networks of committee members, and seeking input of broader faculty members to strengthen the committee's view of candidate collegiality.

Hiring members must also be attuned to the unwritten messages candidates send about their behavior that comes through during interviews. Claudine, who is a theatre department

chair, has candidates provide a portfolio presentation, which is similar to a teaching or research presentation but has a greater emphasis on demonstrating how candidates have worked with members of a team on shared projects. She explained how this helps them predict a candidate's commitment to a team and organization in the future:

> We have them do a portfolio presentation, which is sort of like a research presentation which might happen in a humanities area. The portfolio presentation is showing us their artistic work. In how they talk about that work and how they answer questions about that work, we can often sort of tease out what they are like on an artistic team. … Frankly some things [come out] like when they talk about projects they've done before. When they speak about their previous artistic collaboration or teams in an overall positive way rather than speaking about them like "Wow this team was terrible, but somehow the work was okay," or "I don't even want to tell you what it's like to work with that director, but I still liked my work in it." When they talk badly about collaborators… it means they're waiting for it to be somebody else's fault that things are not smooth.

Space for informal time with candidates also helps yield this information, but it must be deliberately built into the structure of the interview process. This includes meals, side conversations, or interactions with diverse groups around campus that reveal important social and non-cognitive skills of candidates. Most often, leaders used several of these methods simultaneously and triangulated the data in decision making.

Assessing for Leadership and Innovation. Fortunately, methods for assessing for leadership and innovation in candidates are more straightforward, but the committee can still overlook these indicators unless they are deliberate about taking them into account. Adele and Katelyn both commented the best way to assess innovation was in evaluating creativity in teaching. Adele asks candidates for evidence of teaching excellence such as an innovative syllabi and student evaluations. Jennifer, an education school dean, advocated looking for leadership experience in a candidate's record as a signal of how they may lead and take initiative as a future faculty member:

> I think there's a couple things. I also think you can look at somebody's record. Have they gone to AERA and been a part of those smaller specialty groups? Have they shown leadership in schools? Have they been a union rep? And you can ask them

those questions. So there may be instances in their work history that shows that they

like leadership positions and they like working with people.

Some departments have more of a natural emphasis on leadership in their faculty job descriptions. For example, Stephen, a film chair, and Claudine, a theatre chair, both emphasized that leadership and innovation was core to departmental missions and thus easier to evaluate. Claudine stated, "It's not something that we have to remember to think about. It is foregrounded in the function of a unit like a theatre department in a way that is different probably even… than other departments." However, not all units will have this focus, thus committees may need to expressly emphasize these aspects in their hiring.

Leaders' Role in Decision-Making. Leaders largely saw their role in the hiring process as taking ownership of the final decision. For example, each dean saw their job as making the final hiring decision, although their insistence on making an independent decision sometimes bordered on untrusting of the work of junior staff. For example, Adele asks the committee to provide her both positive qualities and challenges they see in each candidate but not a ranking order. "Because I find that's a better place to start," she said. Several leaders had similar practices, which they saw as necessary for the flexibility to make a decision with the full picture of the organization in mind. They also wanted to ensure the ultimate hire would not know if they were a lower-ranked final choice if that indeed were the case.

Creating a Smooth On-Ramp for New Hires

The next element of a leader's role in building a negentropic faculty involves the transition between hiring and early-career socialization. During this phase, leaders play a critical role in setting realistic expectations and welcoming innovation early on with new or prospective faculty members.

Setting Realistic Expectations. Leaders felt it was their responsibility to give candidates and new hires a clear picture of what they would encounter in the organization. In some cases, this was a process starting *before* the hire was complete. Shane explained his purpose in meeting with candidates prior to hiring to get a head start on the socialization process and reinforce expectations around collegiality and service. He stated:

> In my unit, collegiality is a fourth pillar in the tenuring process. So we discuss with
> each candidate about that, and we explain to them what that really means—they're
> going to be a good colleague; they're going to be someone who participates in the

department, they're going to be someone who when called upon serves on committees or whether it be renegotiating their curriculum or graduate students for a Ph.D. program or hiring new faculty or reviewing tenure documents, whatever they are, our candidates know right up front their progress toward tenure will depend upon how well they meet those standards.

An important part of these conversations is for leaders to provide an accurate picture of the institution and its opportunities and challenges. This is similar to what HR professionals call a "realistic job preview" (Tucker, 2012). Holly-Anne felt that giving candidates an accurate glimpse into the organization was a critical part of information gathering for both parties. She explained:

Giving a really realistic preview, not selling the institution, I mean you can do it a little bit, but making sure that we tell people pretty much this is what the job is. And this is what we're looking for. And this is the kind of team that we are, and here's how we would be looking for people to interact and then ask questions to kind of get them to come back and respond so they get a sense of how it will be and how the person would fit… I'd rather have a candidate self-select out than to take the role.

Asking for Innovation. One benefit of realistic previews is the chance for leaders to shape the mindset of candidates toward innovation early in their career. Innovative ideas can be sought in the interview process, but this should be weighed carefully against the possibility of exploiting candidates for ideas without the guarantee of hire. If candidates come into the organization knowing the leader welcomes input, this can translate to participation in innovation earlier in a career. One example of this is how Stephen openly invites new hires to innovate from the start of their employment. This has resulted in his film department at a large university upgrading their technology processes with ideas from a smaller program elsewhere. He stated:

One of the things I've explicitly done with people we hired from the outside, and you have to have a thick skin about this, is to say when you see our processes, equipment check-out, or how we doing things in general, and you think the way we did it here was really good, tell me. I invite them to just innovate or help us innovate … In the case of that faculty member who's a film editor, he came from another [smaller] film program, and they had their flaws, but they also had some policies and processes that

really work in terms of the technology. So, he's been instrumental in helping us upgrade some of those processes. So, I think it's a balance of knowing what you do well but inviting other people to critique the process… without it being a punishable offense.

Stephen also emphasized that when other faculty members see leaders openly welcoming new ideas and innovation from newcomers, they will follow their lead and invite this innovation as colleagues.

Providing Meaningful Early-Career Support

Finally, how does a leader continue building a negentropic mindset once a new hire is firmly on board in the early career phase? It is in this early career phase that new pressures regarding tenure expectations and "fitting in" emerge that may damper innovation and leadership. Katelyn described the challenge for new faculty to shift from an individual to collective mindset:

One of the central paradoxes is the reward structure. Especially when you're a graduate student, it is all about the individual. Even a CV is a history of your life as an individual. So you apply for jobs as an individual, you're evaluated individually, and then you're asked as a faculty member to jump into this more collective effort. So to expect a 0-60 transition for a new faculty member would be quite fool-hardy.

Thus, rather than a flip of the switch, socialization is a sustained process with gradually increasing expectations and significant support. Leaders play a crucial role in carefully assigning mentors, making holistic evaluation standards, and aligning service and leadership opportunities with the needs of their new hires.

Selective Mentoring. Mentoring is a well-known practice, yet not all departmental mentoring approaches are created equal. Participants emphasized that how leaders design the mentoring process is critical for negentropic action early in a career. A variety of models were shared for carefully crafting the mentoring process. In Claudine's department, two mentors are assigned, one with an external focus on helping the new hire connect with industry and the field, and the second with an internal focus of helping to navigate the university and tenure processes. Shane pairs untenured faculty with tenured faculty each year to informally review their projects and provide resources on external funding and opportunities. Nearly all

participants said leaders should carefully select mentors based on potential benefits to the new hire. Stephen explained the care he takes in this process:

> It's really being selective about that mentor, that it's somebody whose experience is relevant to that faculty member's experience. If I hire a new lecturer and I give him a mentor who is a full professor and who's got a light teaching load because he's doing a lot of research, that person might be a great personal mentor, but he's probably not going to be a great professional mentor because their experiences are very different.

At the same time, it is important to connect new hires to those with access and influence in the organization. Leaders can make themselves available as mentors to incoming faculty members.

Holistic Evaluation Standards. The reality of hiring, particularly those from the outside, is that much remains unknown about the individuals. Adele shared some of these limitations and emphasized the need for early and regular checkpoints to evaluate the performance of the candidate, "Quite frankly sometimes that is something that you really can't figure out until you have them on the ground. That's why it's very important to have rigorous annual evaluations of probationary faculty in place." However, the high stakes nature of evaluation of probationary faculty members can either serve to promote or suppress negentropy. Thus, several leaders stressed the need to include holistic indicators in the evaluation standards that rewards faculty for local efforts in innovation, leadership, and service. For example, at both Scarlet and Adele's institutions, service and leadership were heavily weighted in the early-career evaluation framework. Scarlet's institution stressed leadership development at an early stage. She stated, "The culture of the institution I was in was to give potential leaders leadership experience as quickly as possible and then give them a lot of support and provide ways in the tenure process to account for that." Adele stated how her institution explicitly embeds leadership into faculty performance guidelines for service:

> We've developed guidelines for all three areas of evaluation: teaching excellence, professional development which is what we call research and creative activity, and service. For service, in order to get the top rating, the excellent rating, you need to be involved in a leadership activity, and that would be not only being involved in a university-wide committee or initiative but leading that initiative.

In other words, it was not possible in Adele's institution to get an excellent rating in service without having taken some form of a leadership role in service activities at the institution.

The institutional context of faculty must also be taken into consideration. Adele and Scarlet served at a teaching-focused master's institution while several other participants were at research universities. Shane and Katelyn, both at large research universities, cautioned that expectations of innovation and leadership in the early career for faculty at their institution must be weighed against the need to not overwhelm faculty and cause them to miss their research requirements for tenure. Nevertheless, even research institutions can find ways of encouraging negentropy by creatively counting leadership as service (Kezar et al., 2007). It is another area where the judgment of leaders is necessary to create an appropriate balance between "protecting" and developing faculty.

Looking for "Dovetails." Finding alignment between the goals of the institution, the energy and ideas of early-career faculty, and faculty's professional development needs is what one participant called the "sweet spot" of socialization. Claudine shared the example of a first-year faculty member who proposed a new student-led sustainability initiative for their theatre department. It was supported by her colleagues, and her chair—who also happened to be her mentor—ensured she had the professional space to take it on. But it was not just the idea itself that had merit, the initiative also dovetailed with the faculty member's research agenda and leadership development needs. Claudine explained:

> The reasons why I like the idea of her doing that and leading that is it cultivates her as a leader for the longevity of the department, but then also her own research agenda could be augmented. So that by doing this work she could then generate talks for professional conferences, leadership roles at professional conferences in this area, and papers and articles that could then build her expertise. And in my mind as the chair I'm thinking this could be a great way to carve an expertise and a specialty that will position her for leadership on the national level and for tenure. Plus, she wanted to do it… It was coming from the right place. And then it would benefit our students. So, it was just perfect… It dovetailed so nicely it felt really like the right thing to encourage. That was on my mind as her mentor.

This example illustrates the benefits that can transpire early in a career when innovation and leadership are nurtured by leaders, and when negentropic actors are brought into the organization with a mindset to create new energy even in the pre-tenure years.

Showcasing. Finally, one unexpectedly finding of this study was that high-performing leaders found ways for early-career faculty to be both seen and heard around the institution in their early-career years, contrary to the inclination pre-tenure faculty may have to not attract attention. Vanessa described going to lengths to design special workshops for new hires to share doctoral research applicable to specific departments around campus:

> If we feel their research will impact the Psychology Department then we will purposely set up a workshop or a session where we will invite the Psychology faculty over to listen to what this new faculty member has to share. So we try very, very hard to get them to feel empowered that we want to show them off, so to speak.

She also encouraged new hires to submit to annual university conference attended by colleagues at the end of their first year to help raise their profile around campus.

Scarlet was the beneficiary of this showcasing as a young faculty member. She was given significant leadership responsibility and eventually became the faculty senate chair as an untenured faculty member. She recalled how intentional visibility orchestrated by her leaders early in her tenure made a difference for her career trajectory. Speaking of her dean, she stated, "She also just made sure there was a platform for me with some frequency to get some visibility across the campus. … always asking, how can I set her up to introduce a speaker or do something—just trying to get [her] some visibility." Scarlet now follows a similar approach with her pre-tenured faculty.

Discussion

These findings reach the heart of one of the primary tensions in academia—that of individual versus collective responsibility within institutions and academic units. Wergin and Alexandre (2016) spoke of this tension in defining the academic culture today as one where "a belief that individual faculty are responsible only for displaying professional expertise… lead[s] to the conclusion that *integration is somebody else's job* [emphasis added]" (p. 233). Perhaps higher education uniquely struggles with this tension due to its current funding structures, the focus on institutional rankings or prestige, the tenure and promotion system, or other neoliberal forces at work in the system This challenge may also be more prominent

within higher education in the United States where a culture of individualism, personal expression, and selfie saturated social media permeate society (Samuel, 2018). Whatever the underpinnings, faculty can come to view their role as separate actors from their institutions rather than agents empowered to lead change and innovate on behalf of their institutions.

How then can academic leaders—many of whom are faculty members themselves—overcome these challenges and build an organization of actors who see their personal success as tied to the institution's success? Leaders can work to develop these skills and mindsets in their current faculty. But they can also use one of the most effective levers at the ready, the hiring and early-career socialization of new faculty, to build a negentropic faculty from the ground up. Getting the right individuals "on the bus" (Collins, 2001) in the first place is critical to building a negentropic culture of an organization. This was the thinking behind using negentropy as a guiding construct for identifying actors who will add rather than detract energy, who will integrate rather than separate within an organization, and who will take a broad view of their role in the organization, overcoming what Senge (1990) referred to as the "I am my position" syndrome.

This study reveals that many of the actions academic leaders take for finding and building negentropic actors can be counterintuitive. This includes slowing down to make the right hiring decision when pressures for speed exist, mixing up the candidate pool when numerous well-qualified candidates are already within it, measuring for hard-to-define qualities like collegiality and teamwork when accomplishments are spelled out in minute detail on a vita, and emphasizing innovative and flexible mindsets in the midst of hyper-specialization. Alana summed up simply her philosophy on this point: "Great Plains is really a fluid institution. I typically will not recommend to hire somebody if they are rigid in their approach or their way of thinking." In other words, some qualities cannot be mapped out in the regular metrics of academic productivity alone. To facilitate sound decisions in hiring and to buck the cultural trends, leaders must invest themselves in the hiring process from beginning to end.

Yet, building a faculty of negentropic actors does not stop with a signature on the contract. Bringing in new talent, especially from the outside, introduces new risks, and the norming forces of higher education's reward system are strong. The leader must shepherd the new hire through the early years by providing tailored mentor relationships, incorporating

negentropic criteria into the evaluation standards, looking for synergy of service and leadership opportunities, and showcasing early career faculty members in order to build their confidence and social capital. In addition, leaders openly welcome the innovation and input of new faculty rather than wait until they are more seasoned or become tenured. In this way, leaders set an example for the rest of the unit to follow and can shift the culture more toward a learning organization (Senge, 1990). Even the small and routine actions of a leader can signal their openness to this change (Tierney, 1997).

Engaging faculty in negentropic work earlier in their career is important at all institutions, but it must be considered in the context of an institution's mission and type. As the varied participant responses suggest, leaders are still responsible for new faculty succeeding and achieving tenure according to existing standards. Early-career faculty are still in a vulnerable position relative to their colleagues and leaders. Quite simply, as Katelyn suggested, "to expect a 0-60 transition for a new faculty member would be quite fool-hardy." Thus, negentropic work must be encouraged with appropriate support and trust from leadership. However, if appropriate support, standards of evaluation, mentorship are provided, both aims can be achieved.

<div align="center">**Implications for Policy and Practice**</div>

Several specific recommendations in both hiring and early-career socialization can be applied from this research to leaders seeking to build a faculty of negentropic actors.

Hiring Improvements

Recognizing that time is limited in the hiring process, leaders should evaluate their current hiring methods to maximize the information gathering on candidates' innovation, leadership, and organizational commitment. Table 5.3 shows a number of ways to approach more difficult questions such as measuring for teamwork, collegiality, and collective mindset. As in the Duke-Kenshan example, leaders should consider what other methods such as group interviews or simulations can be used to holistically evaluate candidates. The standard "job talk" or research presentation may well have its place, but what other demonstrations would speak more to understanding a candidate's collective approach to research, teaching, or service? The portfolio presentation is one option where candidates can speak to shared projects and work experiences in their background that demonstrate these skills.

Wergin and Alexandre (2016) provided several other ways to rethink hiring and create a culture of collective responsibility in the department or unit. For example, they approach hiring much more by well-rounded preparation of candidates than by disciplinary ties:

> Strange as it sounds, we have never approached hiring faculty by discipline. Every search has brought us seasoned expert faculty whose disciplinary training and research interests enrich and strengthen our interdisciplinary breath in the study of leadership and change, whether they come from management, education, psychology, political science, humanities, or so forth. They are hired to teach and facilitate learning within a curriculum designed by faculty as a whole. (p. 236)

Obviously, this approach would work better in fields more open to interdisciplinary perspectives like business, education, or the social sciences. But even more specialized fields can consider how to "mix it up" by welcoming candidates with a range of experience, such as those from industry careers or from educational backgrounds such as Minority-Serving Institutions (Gasman, 2016) or lower-tier schools (DiRamio et al., 2009). For such experience to be considered, hiring committees would need to reflect diverse backgrounds to the extent possible, and it is recommended that hiring committees be trained in how to identify and check internal biases.

Early Career Socialization Improvements

Leaders can also evaluate their current on-boarding and early-career socialization methods with an eye for recasting social and institutional norms of early-career faculty. New faculty need not be strung out to dry in high-profile service or leadership assignments, but they can still be provided meaningful responsibilities where innovation and leadership are not only welcome but expected. Faculty can be supported in these roles by carefully selected mentors, and success in these roles can be showcased. New faculty research presentations, early-career showcases, speaker introductions, invitations to serve on a committee aligned with a faculty member's research, and other intentional efforts can serve as important "early wins" in a faculty member's career that build confidence for later service and leadership to the institution. Overarching these activities, the use of holistic evaluation criteria that reward negentropic work such as innovation, service, and leadership to the institution ensures the work is not detracting from possibilities for tenure. Kezar and colleagues (2007) concluded the same in their study of faculty leaders:

One of the key strategies for assisting faculty in pursuing leadership opportunities is to find ways for leadership to count as institutional service. In the pre-tenure years, it would be extremely difficult to both exercise leadership for organizational change and meet service requirements by serving on assigned committees. In the course of our study, we repeatedly heard stories of department chairs or deans who found ways to count leadership toward tenure and promotion requirements… Creative solutions for fostering faculty leadership help the institution as well as the individual faculty member and address some of the challenges posed by the tenure system. (para. 9)

Finally, leaders can encourage collaborative and team-focused activities within their units and departments to promote a strong collective culture. Even in research institutions, activities like team-teaching, collective course design, and joint research opportunities can enrich the culture of a department and provide early-career faculty with valuable mentors and allies within the organization (Wergin & Alexandre, 2016). These efforts require work to reconfigure workloads but could have significant payoff for the collective culture of the department.

Future Research

This research has addressed only one or two specific segments of the faculty lifespan, namely hiring and early-career, or pre-tenure, service. Challenges for socialization and the development of negentropic mindsets exist at other segments, to be sure, and these would be fruitful areas of study. For example, doctoral programs and relationships between advisors and advisees are critical phases for socialization of future faculty. How can these be changed to shape the mindsets of new faculty in more collective and negentropic ways? Mid-career, newly tenured faculty, and late-career, senior faculty also have unique barriers to negentropic behavior worthy of more study. Within the areas of this study, more attention is needed on key aspects of the hiring and socialization process. For instance, the recruitment of candidates and the types of encouragement given to underrepresented candidate groups to apply has enormous implications for creating an innovative and diverse workforce (Gasman, 2016). Issues around the composition and training of the search committee are also highly important for finding more diverse candidates. Lastly, the preparation of academic leaders to succeed in all these roles is a subject that continues to gain limited attention in the literature. This is

especially true in preparing leaders to effectively manage the new, technology-enabled, outward-facing, and even entrepreneurial activities expected of today's faculty.

Conclusion

Hiring and socialization are recognized as among the most influential mechanisms in shaping an organization's culture (Hearn & McLendon, 2012). They are vital means for organizations to recapture energy and drive innovation from the bottom up. Freeman and colleagues (2017) stated, "Identifying negentropic professors and developing them over time in the service of increased innovation… is an essential element of real faculty-driven… growth" (para. 6). Leaders play a critical role in this process by consistently communicating a vision, providing systematic and holistic hiring structures, creating a smooth on-ramp for new hires, and shaping the early years of new faculty members' experiences at the organization. However, hiring and developing the negentropic behavior of early-career faculty without simultaneously nurturing a culture of collective responsibility can leave change efforts hollow. Leaders must also continue to create an environment where faculty innovation and leadership is supported.

Appendix: Tables

Table 5.1: Summary of Participant Demographic Info

Participant Pseudonym	Role Type(s)	Institution type*	Region	Active Status	Years in leadership (cumulative)	Gender	Race/ Ethnicity
Adele	Dean, Dept. Chair	Private Master's/L	South	Active	15	F	White
Alana	Provost, Dean	Private Master's/L	Northeast	Active	11	F	White
Bobbi	Associate Dean	Public RU/VH	Midwest	Active	13	F	White
Claudine	Dept. Chair	Private RU/HRA	South	Active	3	F	White
Holly-Anne	Dean	Private Master's/L	South	Active	5	F	White
Jennifer	Dean, Dept. Chair	Public RU/VH	Southwest	Retired	12	F	White
Katelyn	Associate Provost, Dean, Dept. Chair	Public RU/VH	Northeast	Active	8	F	White
Scarlet	Vice Provost, Dept. Chair	Public Bac/D	West	Active	8	F	White
Shane	Dept. Chair	Private RU/HRA	South	Active	5	M	White
Stephen	Dept. Chair	Private RU/HRA	South	Active	5	M	White
Vanessa	Dean	Private Master's/L	South	Active	12	F	White

*Carnegie Classification: RU/VH – Research University (very high research activity); RU/HRA – Research University (high research activity); Master's/L – Master's College and University (larger programs); Bac/D (Baccalaureate Colleges: Diverse Fields)

Table 5.2: Summary and Description of Codes

HIRING

Code	*a priori*	Emerging	Description
Interview process	x		Formal interview process led by faculty search committees, resulting in recommendation for hire
Interview questions	x		Specific questions by the faculty search committee to potential hires
Recruiting	x		Recruiting strategies and best practices
Matrixes and rubrics	x		Role of structured evaluations in the hiring process
Role of leader hiring	x		Domain of responsibility of leader in hiring process
Faculty diversity	x		Encompassing racial, ethic, intellectual, or other forms of diversity
Individual mindset	x		Outlook of faculty members emphasizing individual accomplishment, not team or group outcomes
Collective mindset	x		Outlook of faculty members emphasizing collective or group outcomes
Faculty "fit" and other intangibles		x	Hard to define areas of hiring process including alignment of candidate with institution and culture
Interpersonal skills		x	A candidate's socio-emotional skillset, communication abilities, and ability to collaborate with others
Bias or implicit bias		x	Possibility for decision-makers to make decisions based on assumptions or unspoken judgments
Job description		x	Published description of job duties

EARLY-CAREER SOCIALIZATION

Code	*a priori*	Emerging	Description
Onboarding	x		Formal process of orientation for new faculty to the institution
Mentors	x		Role of mentors for leaders in their role; or for new faculty members in their roles
Early career socialization	x		How a new employee is brought into the organization with goal of adapting to the culture and expectations of work
Early career restrictions	x		Policies or rules limiting participation of early career faculty in service or other restrictions
Early career review process	x		Formal evaluation process for early career faculty
Tenure & promotion	x		Impact of formal tenure and promotion guidelines or processes on leader's role
Faculty as negentropic actor	x		Ability of faculty members to be agents of change and see themselves as contributing energy to institutional challenges
Role of leader in socialization	x		How an academic leader supports, motivates, protects, or otherwise sets up early career faculty for success

Failing		x	How one approaches failing or not succeeding; the ability to 'fail forward'
Showcasing		x	Providing opportunities for early career faculty to be seen and connect with colleagues across university

CROSS CUTTING CODES

Examples of negentropy	x		Concrete example of new programs, ideas, or initiatives implemented by faculty as result of 'negentropic mindset'
Online education	x		Leaders' role in developing online education platform
Organizational culture	x		Culture of the department, college, or institution that sets expectations for behavior
Leader preparation	x		Formal or informal development for the leader to prepare for their leadership roles
Covid-19	x		Impacts of COVID-19 virus for higher education and its leaders
Doctoral programs	x		Program structure, content, and learning outcomes of doctoral programs
Student as negentropic actor	x		Ability of students to see themselves as agents of change for institution
Career preparation		x	Focus on preparing students for careers through the curriculum
Institution type		x	Category of institution and how this impacts innovation
Translation ability		x	Ability to translate research from specialist to non-specialist audiences and between academia and industry
Teaching		x	Core responsibility of faculty members to create curriculum, lead classroom discussion, and assess student work

Table 5.3: Hiring Methods to Assess Collegiality

Meetings with students. Candidates learn about student research portfolios and discuss areas of potential overlap. Students provide feedback to committee	**Teaching or research presentations.** Committee watches presentation to observe candidate's interpersonal skills
Reference checks. Committee looks for evidence of shared work experience, comments on teamwork, collegiality, or collaboration	**Portfolio presentations.** Candidate discusses previous work projects with emphasis on shared projects or role played on a team
Unlisted references. With permission, the committee contacts unlisted references such as former supervisors	**Unstructured time.** Time built into interview schedules for meals, side conversations, or transit time
Personal networks. Committee uses personal networks to contact shared contacts to learn about candidates. Particularly effective in smaller disciplines	**Faculty lunch groups.** Separate group of faculty from the committee socializes with candidate over lunch or other informal setting

Chapter 6: 'Knowledge-Rich, Relationship-Poor': Online Doctoral Education for Faculty Career Preparation (Manuscript 3)

Abstract

Online education options continue to grow in many fields and disciplines driven in part by convenience and at times by public health and safety concerns. How does online doctoral education affect the career readiness of students preparing to become faculty members? This autoethnographic study explores the intentional socialization and training of online doctoral students for a faculty career and the role of online education in acquiring skills required in future faculty workforce. It uses an emerging framework of negentropy from thermodynamics and a Communities of Practice framework to understand how energy loss occurs in online education and what deliberate actions can be undertaken to restore energy loss. A three-phase model of online doctoral preparation for a faculty career is proposed with implications for matching students and advisers, creating consistent forms of interaction, and designing intentional learning experiences to complement doctoral education.

Introduction

The focus of my time had changed from simply completing essential tasks to harnessing every spare hour to develop myself intentionally for the future. Few of these experiences appeared on my study plan or in the doctoral handbook. High grades or perfect marks were not my ultimate goals. I wanted to create value for my field and prepare myself in the process. I began to feel that every minute was precious because I had been armed with the tools to use it, and I understood the opportunity cost of not.

When I decided part-way through my doctoral program to prepare for a faculty career, it felt right for me. I had loved my studies and felt drawn to helping others succeed in theirs. This seemed to be a natural turn onto the well-trod path left by other doctoral students choosing to pursue a faculty career. Yet I soon realized that while choosing this path was simple, staying on and forging ahead on this path was a much more difficult task than it appeared from the outset. I was an online student, away from the physical environs of my campus and distant from the skill-building experiences, professional development, and tight-knit community that form the basis of one's preparation and identity as a faculty member.

While online education had removed so many barriers to learning for me and my family, it also seemed to make the distance between me and my final objective all the more visible.

My online doctoral journey began in fall of 2017. In the spring of 2020, near the end of my program, the COVID-19 pandemic hit. As I watched my on-campus peers around the country move suddenly away from campuses and scramble to continue their work from a distance, I began to see I was not as alone in this venture as I thought. I also started to hear a common theme in these students' responses, one I felt so acutely as an online student. One doctoral candidate summed it up as being "slapped in the face with the hard reality" that doctoral work requires a community that is quite difficult to recreate from home (Krieger, 2020). Some even speculated that, should the trend of online learning continue, graduate students may need to add an extra year or two to their studies to compensate for lost informal learning (Lederman, 2020, comments). In truth, the sudden switch to online learning has raised plenty of interesting questions about how students of all fields can be prepared for their careers while removed from campus. How does mentoring and socialization with faculty members occur? How do professional development and co-curricular activities take place? How do important networks with peers continue to form? These apply to all students but are perhaps especially relevant to doctoral students preparing for a faculty career.

This auto-ethnography explores my experiences over the last three years both before and during COVID-19 preparing for a faculty career as an online doctoral student. While many online doctoral programs have been created over the last two decades, most of these have been professional-oriented degrees for practitioners in the workforce and not oriented to students preparing to become full-time faculty members early in their career. When I selected my program, it was one of the few, if not the only, Ph.D. programs at a state university in my field with an option for full online delivery of a program for students interested in both faculty and practitioner careers. Now, three years later, it is likely many *more* students will be trained as full-time faculty members online, whether by choice or by necessity. What unique challenges do they face, and what creative forms of energy and community are required to meet these challenges? My experience may offer a unique perspective to these questions.

Research Questions

I approached this study by exploring three guiding ethnographic questions about my experience as an online doctoral student preparing for a faculty career:

- How do I perceive the strengths and weaknesses of my online approach to doctoral education as a future faculty member?

- How does socialization occur in an online doctoral program for future faculty members?

- What intentional preparation and socialization strategies can students and their advisers use to compensate for any perceived deficiencies of an online approach?

Background and Historical Context

Two general trends and one current event provide the backdrop for this discussion on online education. The first trend concerns recent changes in the model and delivery systems of doctoral education for one part of the doctoral student population. Until a few decades ago, most students in doctoral programs in the United States were future academics, educators, and researchers, generally young, White, male, and childless, and "singularly devoted" to their area of study (Offerman, 2011, p. 25). Now, at least half of all doctoral students are working professionals who study part-time due to work or other commitments and represent an increasingly broad demographic (Gardner, 2008). As rising numbers of practitioners have taken up doctoral work, traditional degree outcomes have come under criticism for being too narrow. Efforts to "modernize" the doctorate, such as an Erasmus-funded project in Europe (SuperProfDoc, n.d.) and the Carnegie Project on the Education Doctorate (CPED, 2014) in the United States have emphasized practice over research, knowledge transfer as well as knowledge creation, and alternative forms of assessment (Lee, 2018; Riviere, 2016). The delivery model of doctoral education has similarly come under criticism as being too rigid and overly reliant on faculty expertise (Wergin & Alexandre, 2016). Many new online, hybrid, and limited-residency options have opened for students, including options that deviate from traditional adviser-advisee relationships through a model of disaggregation and standardized curriculum.

While these innovations have significantly altered the study-lives of practitioner students, the doctoral model for early-career students preparing to be faculty members has largely remained the same. This model includes students residing at or near universities, taking part in teaching and research assistantships on campus to gain faculty skills (and pay the bills), and having near-daily contact with faculty, peers, and thought leaders in a rich academic community (Offerman, 2011). Data on education backgrounds of new full-time

faculty at four-year institutions is scarce, but evidence suggests most aspiring faculty members continue to be trained via traditional, residence-based programs. For example, a recent study suggested 70 % of new faculty of education at R1 schools come from top-ranked programs (Freeman & DiRamio, 2016), and these programs are more likely to follow traditional in-residence models (DiRamio et al., 2009). Additionally, the over-supply of doctoral candidates for teaching positions means many lower-ranked programs are populated with new faculty from top-ranked programs (Flaherty, 2018).

The second trend concerns the changing expectations of the faculty profession. Faculty life has changed dramatically in the last two decades due to intensifying pressures around research, publication, and resource generation (Wilson, 2010). There have been growing calls to broaden the skillset of incoming faculty to respond to twenty-first century needs in activities such as developing and teaching online programs, obtaining grant funding, developing industry partnerships, marketing and recruiting of students, and conducting community outreach on behalf of their institutions (Lawrence et al., 2012; Romano & Connell, 2015). Carr-Chellman (2014) stated "the new academic who can market and recruit for their program is likely to always have a job, as long as they're not tenure track, even if they do not do much in the traditional realm of university life" (para. 8). However, faculty's doctoral training has been slow to catch up with these aims, and the question of how to develop future faculty for their "new" set of duties has received little attention (Manzo & Mitchell, 2018). Given that most doctoral candidates aspiring for faculty positions will land at less prestigious institutions using a different model of education than their training institutions (Flaherty, 2018), the lack of experience in online instruction, virtual learning, partnership-building, and recruitment and marketing is a potential cause for concern.

Current events in COVID-19 may provide a tipping point in both these trends. Although online learning has been occurring for decades, the rapid shutdown of campuses and resulting massive unplanned experiment in online higher education has exposed more doctoral students to different model of interaction with their faculty and peers, and it has further accelerated the need for experience in online course-building, online teaching, and digital collaboration among faculty. Arguably, more digital transformation and online capacity-building has occurred through one season of virus "wildfire" than decades of controlled burning of online experimentation.

However, COVID-19 is also raising critical questions about the effectiveness of online learning, particularly for career fields like academia where informal learning and socialization are an important part of preparation (Lederman, 2020). Online doctoral programs have come under scrutiny before. While some scholars have found successful examples of e-learning experiences for doctoral students (see Herrington, Reeves, & Oliver, 2014), other scholars have lamented the lack of research skills training, learning communities, and on-campus mentoring opportunities in online or limited-residency environments (Kumar & Johnson, 2019). Rourke and Kanuka (2012) explored how socialization occurred in one online, limited-residency doctoral program and found that student-student interaction, scholarly encouragement, department collegiality, and support were highly rated, but student-faculty interaction and participation in scholarly activities were seriously lacking. They recommended online or limited-residency students be given more opportunities to participate in scholarly experiences such as writing grants, submitting conference papers, and authoring reports and called for methods to increase genuine student-faculty interaction.

The current crisis highlights how little is known about how to successfully translate a rich residence-based learning experience into a robust online program with the type and quality of socialization that are the hallmarks of research-based doctoral programs for aspiring faculty. Given these challenges, the question remains what concrete steps online students and faculty can take to bridge the skills and socialization gaps of prospective faculty members.

Theoretical Framework

I draw from two theoretical frameworks to understand my experience in online doctoral education. The first uses the concept of energy loss and gain from thermodynamics to explore how the online experience compares to traditional doctoral experiences. The second discusses my identity creation as a doctoral student and future faculty member through the Communities of Practice (CoP) perspective (Wenger, 1998). This braided approach allows me to discuss both the outward organizational elements of my doctoral program and the internal dimension of my growth and identity as a student and future faculty member.

One instructive way of looking at the challenges of online faculty preparation is through the principles of energy loss and gain in thermodynamics. Entropy is a concept closely tied to the second law of thermodynamics, which states that energy in a closed system disperses to equilibrium and becomes unusable if no other force is acting upon it. All living

systems experience entropy, which occurs when order breaks down and energy becomes dispersed, such as ice melting in water or air escaping from a tire. Because of entropy, energy can no longer be converted into mechanical work and is considered lost.

Not only do physical systems experience entropy, but organizational systems have entropic characteristics as well. Processes, rules, discipline, and general order in all organizations break down without constant tending, much like discipline in an elementary classroom falters without the effective control of a teacher. In online education, entropy is especially abundant. Online students experience rampant isolation (Kumar & Coe, 2017), numerous distractions (Lederman, 2019a), and difficulty networking and building social capital, particularly for low-income students (Fisher, 2020; Morton, 2016). Consequently, many online students struggle to reap the full benefits of a flexible online education due to inherent energy loss.

Fortunately, entropy has an antithesis process that injects energy into and rejuvenates a system. Negentropy is focused energy that counteracts the forces of entropy, or decay, within all living systems and organizations (Carr-Chellman et al., 2019). Figure 1.1 explains this process. It occurs when negentropic actors introduce energy back into the system to restore order and bring about integration (Heckman & Montera, 2009). Negentropy has been adapted as a theoretical construct to higher education institutions experiencing high rates of entropy in their current state due to difficulties in funding, enrollment, governance, and other factors (Carr-Chellman, et al., 2019; Freeman et al., 2018). University leaders have been encouraged to cultivate and support the work of negentropic actors such as individual faculty members whose new ideas, knowledge, and activities insert energy into the system to help address challenges at their institutions (Carr-Chellman et al., 2019).

Negentropy can be further applied to the deliberate energy online doctoral students and their faculty must deploy to combat entropic forces in online education. Take the relationship with an adviser as an example. An online student may develop a relationship with their adviser through a periodic advising session or annual review, but without the frequent contact and unplanned "collisions" (Waber et al., 2014), the relationship can stall and deteriorate over time through no fault of either party. Either the student or the faculty member must inject energy into the relationship through new forms of contact or shared experiences, or the relationship will succumb to entropy (Burt, 2000). The same occurs with the learning

experiences that doctoral students rely on to develop skills and expertise for the faculty workforce.

The second theoretical framing relates to how personal learning, growth, and identity take place in the doctoral socialization process. Wenger (1998) developed the Communities of Practice (CoP) framework to understand how learning occurs among individuals connected by a common passion or interest in a subject. CoP theory was first developed to better understand apprenticeship relationships but has since been applied by researchers and practitioners to a range of learning communities in business (Wenger & Snyder, 2000), healthcare (Andrew et al., 2008), and government (Snyder et al., 2004), among other contexts. This framework explains how knowledge is shared informally within a community or apprenticeship as the interaction between community members becomes a "living curriculum" (Wenger, 2011, p. 4). By engaging together, participants not only gain knowledge, but they also grow in their identity around a set of shared practices, stories, language, and lore. In other words, learning becomes a social phenomenon (Wenger, 1998).

Regarding online doctoral programs, CoP theory demonstrates that learning can occur outside "formal structures such as organizations, classrooms, or nations" (Wenger, 2011, p. 4) through meaningful and regular interactions of community members. In fact, CoPs are the ideal place for the implicit and informal elements of learning within a profession or organization to be conveyed between adviser to advisee, colleague to colleagues, or student to student. However, some type of structure must still exist to enable members to engage with and learn from each other (Wenger, 2011). Organizations can facilitate internal CoPs among members of the organization by seeding initial interactions and providing space, place, and ongoing resources. Organizations like schools can also look to connect students to external CoPs beyond their own learning organizations for additional learning benefit.

Both frameworks help me understand my experience as an online doctoral student. The framing of negentropy allows me to analyze where the sources of entropy and negentropy are occurring in my education and what organizational elements of my doctoral program help or hinder my preparation for a faculty career. CoP theory also helps frame how my growth and identity as a future faculty member is affected by the unique communities of practice I experienced as an online doctoral student. Together, my intent is to understand how online doctoral education can be improved for future students preparing for a faculty career.

Methods

My rationale for using autoethnography as a methodology is that some experiences are best understood from the inside-out. Providing my insider's "emic" (Morris et al., 1999) perspective as documented over multiple years adds depth and richness of understanding to the findings of a population not often observed or well-understood. Autoethnography has expanded rapidly in the last several decades as a means of sharing an inside view on larger social or cultural issues or shedding light on implicit skills and knowledge needed to navigate specific challenges (Hughes et al., 2012; Hughes & Pennington, 2017). It is a form of "critically reflexive self-storytelling" (Hughes & Pennington, 2017, p. xii). In my case, I tell a story of being empowered to take a non-traditional path through my doctoral education and how this path both helped and hindered my preparation for a faculty career. I also relate how this path has shaped identity as a future faculty member and my outlook on the role of faculty members who will be increasingly called upon to work with remote students.

Data Collection and Analysis

Ellis (2004) compared the process of autoethnographic research to going "into the woods without a compass" and recommended one should take time to "wander around a bit and [get] the lay of the land" (p. 120). Some have criticized autoethnography as being overly artful and not accountable to criteria applied to traditional ethnographies or research studies (Ellis et al., 2010). However, this form of research can be rigorous, analytic, credible, and in line with educational research standards, such as those of the American Education Research Association (AERA) and other organizations (Atkinson, 2006; Hughes et al., 2012). I followed a process advocated by Hughes and Pennington (2017) involving a review of the literature, development of self-questions, reflection and self-responses to these questions, comparisons of the responses with the literature, and creation of themes and findings.

My review of the literature led me to develop 10 questions about my own online doctoral experiences, found in Appendix C. Responses to these questions produced approximately 25 double-spaced pages of text that were refined through an iterative process through conversations with my family, close colleagues, and adviser until I felt they appropriately captured my lived experiences. I also drew from four years of personal documentary data such as journal entries, personal notes, and written assignments to add

depth to my findings (Duncan, 2004). I used textual analysis to analyze the personal autoethnographic responses and documentary data to develop eight themes for my findings.

Concerns for Quality and Trustworthiness

As both the researcher and subject for this study, I have an extra obligation to establish quality and trustworthiness in the research process. My primary commitment as an ethnographic researcher was to be accurate and true with my descriptions of my personal experiences (LeCompte & Goetz, 1982). This prompted me to triangulate my written responses with documentary data such as journal entries, personal notes, and previous written work to provide evidence for claims (Duncan, 2004). It also led me to discuss my findings with family, friends, and mentors close to me who were familiar with my experience as a doctoral student and provided feedback to me. "Rich" and "dense" descriptions of the data were used where possible to allow the reader to determine how credible and dependable the findings are (Trochim, 2006).

Limitations

Several limitations of this study exist. The written product reflects only my experiences and thus may not be generalizable to a larger doctoral student population. However, I wrote with the needs of this population in mind so my audience may recognize linkages to common issues or challenges. Second, memory is fallible, and certain events will be impossible to fully reconstruct to give full justice to the experience. Thus, I began with the assumption that our memories, just like the meaning we ascribe to objects or events, change over time but still hold significance in how we see the world. Finally, regarding the ethics of auto-ethnography, there is a need to be concerned about representing others in an auto-ethnography who cannot represent themselves (Wall, 2008). Thus, I have discussed these responses with those who can be reasonably identified from my story and provided an opportunity to contribute their feedback.

Positionality

Sharing my positionality also strengthens trustworthiness in qualitative research (Savin-Baden & Major, 2013). I am a White male from a middle-class socio-economic background currently pursuing a Doctor of Philosophy degree in Education with a research agenda focused on higher education organizations, innovation, and faculty and leadership development. Previously, I worked as a civilian academic administrator at a U.S. Government

university where I was involved in organizing both online and resident education. I began my doctoral program as a part-time online student and then transitioned out of full-time work to be a full-time online student. In making this transition, I was fortunate to have family support from both my immediate and extended family to make full-time study possible. I acknowledge these advantages are not held by all who pursue doctoral studies. My long-term goals include pursuing a tenure-track faculty role and serving in the field of organizational leadership, educational leadership, or higher education.

Findings

One's personal story and reflections are really inseparable in autoethnographic research, and that is no different in presenting my eight primary themes below. I share the first three as part of a chronological story of choosing a doctoral program, the doctoral experience, and my subsequent career transformation to illustrate many of the "entropic" challenges online students face. The remaining five themes are not chronological but span the length of my time as a full-time online student in order to highlight possible "negentropic" actions online students and their advisers can take and the types of communities of practice that can be formed to improve doctoral learning.

"Looking for a Unicorn"

When I decided to return to school for a doctorate, I wanted a more flexible and family-friendly alternative than my previous degree programs. In my master's program, I crossed a large East Coast city two nights a week after work to attend class, not making it home until ten o'clock at night. I was recently married, and my spouse struggled with the loneliness that often accompanies busy working life in a large city. The thought of repeating this process five years later now with three small children at home held little appeal. Thus, after deciding to return to school for a terminal degree, I recorded four criteria in my journal for a degree program:

> *July 2016: Criteria for further education – 1) PhD if possible, not EdD - more liberating than limiting. 2) Online or flexible delivery. 3) Research-based. 4) Focus on leadership and organizational studies.*

Despite wanting my program to be online, I also strongly desired a traditional doctoral experience grounded in research, with a conventional advisee-adviser relationship at an established research institution. As I began researching programs, I realized I was looking for

a unicorn. While there were many online doctoral programs, most led to an EdD degree for practitioners or were PhD programs offered by for-profit or online-only institutions. I could find only one PhD program in my field at an established public research institution with the option for complete online delivery of the curriculum. My wife and I considered this a major blessing because it also happened to be in the state where my wife was raised and where we had considered eventually raising our family. I applied and was accepted. Soon after, I recorded: "*I was able to find a program fitting my exact needs and online for that matter. It met all the criteria I was looking for. Could be a great fit for our family.*"

From Exhaustion to Exhilaration

When I began the doctoral journey, I intended to continue working full-time in this Eastern city while completing classes online. At first it seemed like the flexibility of online study would allow our routines to carry on as usual, but reality was a different matter. My approach to merging work and study quickly burned up our nights, weekends, and holidays and began straining our family. I should have felt fulfilled and accomplished by the end of the first year—I had completed four intensive classes along with a demanding work schedule, an hour of daily commuting, and three kids under five at home. Yet, I only felt exhaustion and a sense that something was missing in my experience as a doctoral student. I mentally plotted my future trajectory and saw that following this course would not provide the growth I envisioned at the beginning of my studies. Part-way through that spring semester, I wrote:

> *March 25, 2018: I've experienced a wake-up call of sorts this spring for school. I'm taking a six-credit part-time load and it has stretched me to the limit… I have never been in a position of being so far behind on school despite my best efforts to not procrastinate. I simply do not have the time in my schedule to do my best work in school. This has caused a serious evaluation of our future priorities for us.*

We knew a major change was needed, and my wife eventually suggested we quit work and try online school full-time for a while in a place that was more conducive for our family. I was initially hesitant, considering the career and financial implications of the choice. But the idea felt more and more inspired as a path forward for our family. Six weeks later, we had completed our move and were now living with family members on a small family farm in the Western U.S.—in the same state as my institution but still nearly a day's drive from campus.

The second year in the program was monumentally different than the first. With an infusion of time and freedom, I began savoring the reading, exploring my interests, and

picking up side research projects, none of which were possible during my first year. I felt the exhilaration of new writing ideas popping into my head and acceptance letters from journals. I saw that I enjoyed the work and had skills to contribute. Slowly, I began to view my doctoral work as less of a means to an end and more of the beginning of a new career path, a path that could lead through academia.

"Knowledge-Rich, Relationship-Poor"

While my new-found career vector was thrilling, I soon encountered a harsh reality of my prospects for success in that calling. I realized my preparation for a faculty position would be different in some critical ways from most other peers pursuing the professoriate. I would not have the opportunities that come on a campus with teaching or research assistantships, service learning, professional development workshops, and the building of social networks. I would miss the creative "collisions" (Waber et al., 2014) between faculty or peers that seed ideas for new projects or collaborations. And, I would miss the chance to observe the life of faculty members beyond an artificial peek once a week over Zoom. These concerns appeared to loom over me as I reflected on our family's transition one year later:

> *August 19, 2019: It has been almost exactly one year since we arrived. Looking back, I see the move has been good, even essential, in many ways… Continuing my schooling would have been extremely hard on our family. Coming around to my new goal of serving as a faculty member may never have happened. … Still, I am anxious about the future, about finding a good job that will be personally fulfilling, adequate for supporting a large family, and in a location conducive to the family life we desire. I am not going about the PhD the normal route.*

Thus, while online learning had so many benefits for me, I was also grappling with its downsides. I knew it put me outside the strike zone for essential experiences and networking that could aid my socialization and improve my prospects for employment. I could call myself a "Doctor" but have limited experience doing the work of faculty I hoped to do for the rest of my career. I could end the program with a degree in hand, but no social capital collected (Morton, 2016). I could be knowledge-rich but remain relationship-poor. I needed a plan of action.

Saying "Yes" and Asking for More: The Essential Role of Adviser

I knew the most natural place to begin was with my doctoral adviser. In doctoral education, the adviser-advisee relationship is the first and most enduring learning relationship and has been compared to an apprenticeship (Blessinger & Stockley, 2016). Going into my program, I underestimated the impact of an adviser, thinking I would easily develop a close working relationship with all faculty in my program. But I soon saw that online work prevented much organic association with any other faculty member, and I was almost entirely dependent on my adviser for support and advice. Fortunately, I had an adviser who was comfortable working with me from a distance and shared a philosophy that forming a relationship took deliberate work and energy. Our relationship started slowly because I was working full-time. At the start of the second semester I planned a visit to campus, and we met face-to-face for the first time, which helped personalize the relationship. But it was not until we began working together outside of class on a research project that the relationship started clicking. He invited me to work on my first research project with him and to help develop a grant proposal. I enjoyed the creative collaboration, and it made me realize there were many more of these opportunities available if I had time to dedicate to them. This became a key factor in our family's decision to do school full-time.

His advising philosophy was to hold both his residential and online students to the same high goals and push us to accept new opportunities. Saying 'yes' to these opportunities—and asking for them where they did not exist—proved essential for my growth. This was exemplified in an experience during my first year with a writing competition:

> At the end of our first year he sent a communication telling his advisees about several national writing competitions he wanted us to participate in either as reviewers or submitters. I thought these were far-fetched possibilities for me in my current state because I had no time to write or review, and I didn't think my work was of that quality yet. But, after taking the plunge to full-time online school, I decided my philosophy would be to always say 'yes' to opportunities he presented unless I had a compelling reason not to do the work. So, I inquired about being a reviewer for one competition, but my adviser encouraged me to instead submit a paper we had developed together. I submitted it, and to my surprise it won the competition. This led

to several other doors opening for writing opportunities and caused me to think more

seriously about pursuing a faculty career.

But, saying "yes" to opportunities to work together was not always easy or comfortable. Some of the opportunities my adviser opened to me led to topics that were not initially appealing but later became formative in my growth. Early in my second year, my adviser showed me a list of potential research topics and invited me to contribute to any of interest. I initially selected a few that were familiar, but then I revised my answers to include some that were more unfamiliar such as race and diversity issues in higher education. This led to working together on several research projects related to race, diversity, and higher education leadership, including interviewing Black provosts around the United States for a national research project. Shared experiences like these helped our relationship grow beyond typical faculty-student connections and opened other socio-cultural topics for discussion, such as the role of faith and family life as a scholar, subjects deeply important to me in considering a faculty career. My adviser relationship served as an ideal environment for the "tacit and dynamic" elements of learning to be explored (Wenger, 2011, p. 4). As we jointly explored these topics, my identity as a future faculty member grew, and I felt I was gaining knowledge that was otherwise inaccessible. These were the kind of "critical interactions" (Rourke & Kanuka, 2012) and growing experiences I hoped to have as a doctoral student.

Designing Intentional Learning Experiences

Given what I knew about the faculty path, I also understood there were other core faculty skills I needed to intentionally develop as an online student. Along with research, I needed more experience in grant-writing, publishing, online teaching, and various forms of faculty service around the university. With some creative thinking, my adviser created ways for me to be involved in each of these tasks from a distance. He brought me in early on outside research projects I could complete from home and matched me with colleagues who needed writing support. Though his class, he designed practice in writing book reviews, blog, reports, and press releases and encouraged me to send these out for publication. He also invited me to participate as a lead writer for a major grant application with another faculty member. Working from a distance, I collaborated on the grant submission from inception to submission, which exposed me to the tangible realities of grant-writing. About this experience I wrote:

I saw how the scope of a project transforms during multiple rounds of submission and how certain promising ideas at the beginning change due to the feasibility of a study. I saw the behind-the-scenes maneuvering needed to gain support from many corners of the university. And, I had the time-honored experience of staying up late the night before the grant deadline number-crunching in a shared spreadsheet and fixing errors in the application.

Teaching was another critical area where I wanted more development since I was not able to do a teaching assistantship on campus. I volunteered with my adviser to co-teach an online class I had taken the previous year. I found my experience as an online student helped in improving aspects of the class to better meet the needs of the students, and being an online instructor expanded my own network of peers to the other graduate students in the course. I also found a part-time teaching role at a school in my local area. With regard to service, my adviser passed along opportunities to join university committees, which I did virtually from my home, sometimes as the only remote participant in the room.

"All Possible Means": Networking as an Online Student

I knew networking with peers and other faculty would also be vital for my experience, not to mention landing a job, but it was extremely challenging to do as an online student. At the time there were few mechanisms in my program to create a peer network outside of class. I began deliberately reaching out to classmates offline, finding those with similar research interests, offering to provide feedback on their papers, and arranging to meet a few in person when they were in my area. I found that most other online students wanted these communities as well but did not have time to devote to reaching out and making initial connections. From this outreach several friends emerged in various parts of the country who were also completing their degrees online, and this has led to multiple writing and publishing opportunities together.

I also wanted to build relationships with other faculty members where possible. When I planned a visit campus early in the program, I lined up meetings with each faculty member in the program and later set up online meetings with faculty outside of class to learn more about their research. While some connections never clicked, I felt I had established a good working relationship with most. This intentional network-building helped when it came time to build my doctoral committee. Without intending to do so, I had already established a

relationship with each of my committee members, which made the formation of my committee quick and simple.

Lastly, despite these internal ties, I felt my exposure to my external field and colleagues still sorely lagged as an online student. I was no more geographically removed from these networks than students on campus, but the distance felt greater to me due to limited access to information, networks, and funding opportunities. During one of our goal setting sessions, I voiced some of these concerns to my adviser. He invited me to co-write two conference proposals with him for the national conference in our field and asked me to serve with his journal that met annually at this conference. We attended the conference and presented together. This first academic conference had an outsized impact on my socialization as an online student. I recounted,

> *Participating in this conference was like two years of professional development packed into four days. I filled my schedule with early career seminars, research workshops, and other sessions, and my adviser also guided me to networking opportunities, including journal board meetings and appointments with publishers. But it was the space between sessions to talk and connect with my adviser and others than proved to be most valuable.*

These conferences became an important part of learning the "unspoken" areas of faculty work, such as pitching a book project to a publisher, networking with the industry professionals in attendance, and volunteering for external service work. Many new opportunities opened to me as a result such as writing for an online higher education publication and joining external committees in my field. Moreover, being affiliated with external organizations and meeting peers with similar interests gave rise to new informal communities and lessened the feeling of isolation of my studies, even if my path was somewhat different.

"Kitchen Counter Test" and Other Benefits of Online Education

While I have mostly discussed the hindrances of online education, some key benefits also emerged over time. First, studying online gave me time back to deliberately invest into my areas of greatest need and growth. Because I did not have a contractual teaching or research commitment on campus, I had time to dedicate to special projects such as grant proposals, journal editing, and outside teaching and writing in targeted areas of interest.

Second, I was able to focus on developing skills becoming more in-demand in the professoriate, including online teaching, digital communication, and virtual collaboration (Carr-Chellman, 2017). During the COVID-19 shutdown, I used these skills to create a training website for helping other teachers to migrate their classrooms to the virtual space.

Another benefit of online study was less direct but had noticeable impact on my studies. The hyper-specialization of academic work means students can easily lose touch with how their works translates to non-specialists. Studying from home and being ensconced in a family, neighborhood, and city where virtually no one else is working in my field, I had to seriously evaluate how my academic work was perceived as relevant to those around me. One simple but critical example is the language I used in my research. Studying from home changed how I approached using academic language. I described:

After working on my computer for long stretches, I would often come out to interact with my family who asked what I was working on. Words like "faculty commitment," "critical theory," or "negentropy" seemed to get stuck in my mouth while coming out and then land with a thud on the countertop. I knew I was speaking a language my family didn't understand. Not because they weren't bright, but because I hadn't put in the work to simplify to the point where they cared. I saw my ability to explain my research in everyday terms was a measure of how impactful those studies would be outside academic circles. This became my "kitchen counter test."

The quest to simplify and clarify language became a program-long effort. Participating in the Three-Minute Thesis (3MT) competition from a distance was especially helpful in this regard. It forced me to explain to a non-specialist audience the main points of my research. Without the experience of studying at home and online, I may have been less committed to this approach.

In a sense, studying online and from home reaffirmed what matters most in my education. Wenger (2011) explained how education is meant to build on what is happening in life, not the other way around: "The class is not the primary learning event. It is life itself that is the main learning event" (p. 5). Learning while in the home reinforced that all learning is rooted primarily in what occurs in everyday life.

Identity as Online Doctoral Student

Lastly, my experience as an online doctoral student has reshaped the identity I hope to have in achieving my goals to be a faculty member. For a long time, I hedged about being an "online student" because of its negative connotation with a rigorous and quality education (see for example, Mandelbaum, 2014). In a way, this mindset became a self-fulfilling prophecy. My first year as an online student was not highly impactful academically because my schooling always received the last of my time, energy, and priority. After taking a leap of faith to full-time online school, however, my perspective changed. Online became a rich, rewarding, flexible, and efficient way to learn. My studies no longer got the leftovers of my time and attention.

Over the last half year, my identity has shifted toward fully embracing my status as an online student, both in appreciating its benefits and acknowledging its drawbacks. COVID-19 has accelerated this shift, to be sure, now that studying online [at the time of this writing] has become the new normal. But this transition started well before the pandemic when I had opportunities to research and write about online learning for various online outlets and talk with many people considering a similar path themselves. I now view myself as more than a doctoral student who happened to go to an online-based program. I am also an experienced online student and educator who understands the unique affordances of virtual learning and what is required for students to achieve their occupational goals. I am hopeful that leaning into this identity will aid me as a future faculty member in designing more impactful online learning experiences for the students I will teach and advise.

Discussion

Given these experiences, how might both the concepts of negentropy and communities of practice help us better understand what challenges online doctoral students face in preparing for a faculty career and how their preparation can be improved?

Entropy and Negentropy in Online Education

First, the narrative reveals clues about where entropy is occurring in online education and what "negentropic" actions can be taken by a student, adviser, or other actors to reverse the course of entropy and, in some cases, transform the education into a more positive and empowering experience. Table 6.1 summarizes these possible sources of entropy and negentropy in each area of online doctoral education. We need not look far to see how my

experience confirmed many of these sources of entropy. Like other online students, I struggled with energy loss in feeling isolated from peers and faculty and removed from developmental experiences offered on campus. Entropy also appeared in the distraction and disorder I experienced while doing academic work in a household—first as a part-time student with both family and work commitments, and later with "just" family commitments. Many online students like me experience a wake-up call about their ability to balance their responsibilities and have a meaningful learning experience (Krieger, 2020). Finally, entropy can be seen in the lack of external ties, networks, and relationship opportunities as an online student. I learned early on that new networks or opportunities would not generally come find me; I had to seek them out.

However, there is ample room for negentropic action in online education. Perhaps more than in-residence students, online students can become their own negentropic actor. They must clear space in their lives into which they can release this energy, even if it requires tough decisions on work, hobbies, or other activities to forego. They must also minimize energy loss through avoiding discouragement, maintaining personal health, and seeking the support of close family and friends. At the same time, they need negentropic actors from within the organization working on their behalf, most especially engaged faculty advisers. Selecting the right faculty member is paramount because other sustained strong relationships with faculty members are unlikely to form. Advisers help online students craft intentional learning experiences within their circumstances to develop specific career skills such as teaching, research, grant-writing, publishing, and service. They also create opportunities for "critical interactions" (Rourke & Kanuka, 2012) that engender learning and enable holistic growth in students. Because it can be difficult for many online students to develop a level of familiarity with their adviser at a distance, constant communication is critical, along with prioritizing participation in in-person meetups at conferences or campus visits where possible.

These findings are largely consistent with what we know about energy release and learning within organizations, namely that more energy is released through more interactions. In a study of workplace productivity, Pentland (2012) used movement trackers to identify how employees spend their time and their interactions around the office. Pentland found "the best predictors of productivity were a team's energy and engagement outside formal meetings. Together those two factors explained one-third of the variations in dollar productivity among

groups" (para. 6). Other social scientists have found that "face-to-face interactions are by far the most important activity in an office" (Waber et al., 2014, para. 5). Simple as it seems, releasing energy often means increasing the amount and intensity of interactions in an organization. In my situation, these increased interactions between me and my adviser, me and other students, or me and outside faculty or mentors released more energy into my personal "system."

But releasing energy is not enough; energy must also be *focused* on specific actions. For me, this included targeting the various specific research, teaching, grant-writing, conference, service, and networking opportunities I needed from a distance. Some experiences were proposed by my adviser, and others were requested by me. In either case they were undergirded by focused goal-setting conversations and accountability in an adviser-advisee relationship marked by "mutual respect and collaborative learning" (Blessinger & Stockley, 2016, p. 11). Focused energy is powerful, but it requires consistent work to keep from dispersing. Figure 6.1 represents a possible model of how the online doctoral student can harness the online experience to prepare to become a faculty member. The essential building blocks include (a) a solid adviser match, (b) regular interaction, both formal and informal, and (c) intentional learning experiences targeted at areas of growth. Energy is released through a strong adviser match and consistent interactions; then energy is focused though goal setting and targeted developmental experiences.

Role of Communities of Practice (CoPs) in Identity Formation

Beyond energy release, this study also explored my growth and identity formation as an online student preparing for a faculty career. It documented a shift in my own thinking about the value of online education and my identity as an online-trained faculty member. Much of this formation came as a result of the CoPs I associated with as an online student and the invaluable informal learning and socialization I received. These communities proved vital for accessing the knowledge I needed, perhaps especially because I was an online student. They included first my apprenticeship relationship with my advisor, my virtual communities with peers, and various outside communities with external contacts through conferences, associations, and external service. Wenger (2011) explained that a CoP perspective "allows us to see past more obvious formal structures such as organizations, classrooms, or nations, and

perceive the structures defined by engagement in practice and the informal learning that comes with it" (p. 3).

But Wenger's point about the importance of informal learning may also be misunderstood. I needed these CoPs, but I also needed a school organization to facilitate their formation and effectiveness. It can be easy to confuse the fact that learning can now occur from anywhere with the need for a school organization at all to enable learning. Schools seed community by gathering people with shared interests and passions together in one place. They provide the structure that channels energy and learning. And they grant a legitimacy to the search for knowledge that allows for certain norms and standards of excellence to be followed. Thus, my focus on online learning is not a push to deemphasize formal school education. Instead it is a chance to better integrate what happens at school with what happens in our everyday contexts. Wenger (1998) further asked, "What if we adopted a different perspective, one that placed learning in the context of our lived experience of participation in the world?" The widespread shift to online learning means greater thought is needed around how to facilitate CoPs for online learners. New types of communities based on the shared experiences of online students are needed to provide the peer support and socialization for students, especially those considering a faculty path.

Online Versus Traditional Doctoral Education

Finally, this analysis begs an inevitable question. Does online education provide an equally or more effective way to prepare for a faculty career? Said another way, can negentropic actions fully balance out or outgain the entropic losses in online education? And do the virtual communities of practice in online education measure up to those received in person? After all, nearly every action in Table 6.1 other than conference and campus visits can be completed off-campus while preserving the flexibility of online learning. While it may be tempting to answer this question outright, it depends largely on one's personal needs, values at the time of studying, and future goals. I had certain priorities for my schooling based on my family needs and preferences as a student. I also hope to include online learning in my future research agenda and identity as a scholar and to possibly teach online in my career. Thus, for me it was the "better" option, and I believe there was a net gain from having experienced it over the traditional model. However, many others will not feel the same given their set of circumstances.

Implications for Policy and Practice

I conclude with some recommendations for policy and practice relevant to an audience of doctoral students and faculty members. It is unlikely that most aspiring faculty members will voluntarily choose online education. But, as online learning continues to spread, and world events like COVID-19 cause remote learning and work to be more necessary, there could be increased numbers of students needing an alternative path for their education. Whether or not online doctoral programs will become more mainstream in the future, they can be improved in several ways now.

First, based on their circumstances, students should be encouraged to consider more options than simply going full-time on campus or part-time remotely for their studies. If online students can afford to live on less for a season, they may benefit from focusing full-time on their studies, even if it is remote. Programs can offer previous students as ambassadors to speak to all different arrangements. The earlier a student makes this course correction, the better the outcomes. Early checkpoints between advisers and students to assess progress can facilitate these decisions just as some academic departments conduct first, second, and third-year reviews for pre-tenured faculty. Not only are course and research progress worth measuring, but so too is the "joy meter" of students' satisfaction with their overall experience. A lack of joy may indicate a need to rebalance time and priorities.

Second, I recommend programs encourage online students to visit campus early in their programs and not only during the dissertation phase. These personal touchpoints are crucial in personalizing the relationship with advisers and establishing a level of familiarity with faculty. These visits need not be formal residency sessions but individual visits tailored to the schedule and interests of the students. Similarly, conferences are essential to the overall development of faculty-oriented PhD students—perhaps especially so for online students. Making travel funding available to online and part-time students, while also encouraging them to get support from their employers, is one way to encourage this. Inviting students to then present on their experience to other PhD students will close the learning loop and motivate others who follow.

Third, increasing the experiential learning opportunities of online students is critical (Thacker, 2020). Online students may not see the value of co-curricular experiences like outside research projects, teaching opportunities, conference preparation, and service and

leadership. Enabling, even requiring, these experiences aligned with individual goals will crystallize the learning of doctoral students as no other learning method can. This may require some "collaboration, creativity, and institutional flexibility" on the part of the institution (Ford et al., 2016, p. 111). For instance, Ford and colleagues (2016) described a Doctoral Teaching Fellows program in which Ph.D. students teach up to two online classes under the tutelage of a faculty member, and the university's Distance Education office provides funding in exchange for more of the department's classes going online. Online students are well-positioned to teach online classes at their institutions or participate in research assistantships in fields not requiring on-campus lab work. Intentionally including courses in grant-writing, teaching, and the college professoriate in the curriculum will help online students have more of these experiences. Program faculty should consider what other experiential learning can be designed to help students begin making contributions to their institutions and fields.

Fourth, care should be taken to facilitate vibrant learning communities among students, faculty, and external colleagues that can accelerate the socialization and identity-forming process of online doctoral students. Among the first studied uses for CoPs were to help improve learning among remote education administrators isolated from peers and networks (Wenger, 2011). Similarly, CoPs can be employed to bolster the informal learning of online students. One example is a research apprenticeship course begun at my current institution for cohorts enrolling after my second year. Doctoral students, most of whom are remote, collaborate with multiple faculty and peers in a semester-long research community in which they conduct joint research projects and regularly share knowledge on research and faculty life. By participating in the community, students begin to adopt the shared norms and identity of the faculty leading the group while learning important skills.

Lastly, it is important to understand more clearly the mindset of online students in taking advantage of opportunities like joining communities, attending conferences, participating in competitions, and serving in their field. For many online students, it is not enough to be *made aware* of opportunities, like through a newsletter or bulletin. Information must be coupled with an invitation, a word of encouragement, or a nudge from a trusted source, like an adviser, to register. Because of their separation from campus, the outlook of an online student is to often assume a program or opportunity does not apply to them. They also have fewer chances to vet these opportunities informally with peers and faculty. It is

especially important for online students to establish some "early wins" in their program to build confidence and gain momentum. For example, perhaps an online conference could be hosted by the institution for first-year students where students can present their ongoing research projects to each other.

Future Research

Online education continues to be a rich and timely area of study. Building off this study, additional research could explore the challenges of socializing students via online technology to enter other career tracks within academia such as practitioners and administrators, along with numerous fields outside it. The relationship between students and faculty and students and students also merits more research, especially regarding making space for relationship-building, collaboration, informal communication, and the development of "soft skills" in online education. It would be intriguing to understand how studying and teaching online makes aspiring faculty members more or less likely to support institutional movements toward online education in the future and how this affects their identities as scholars.
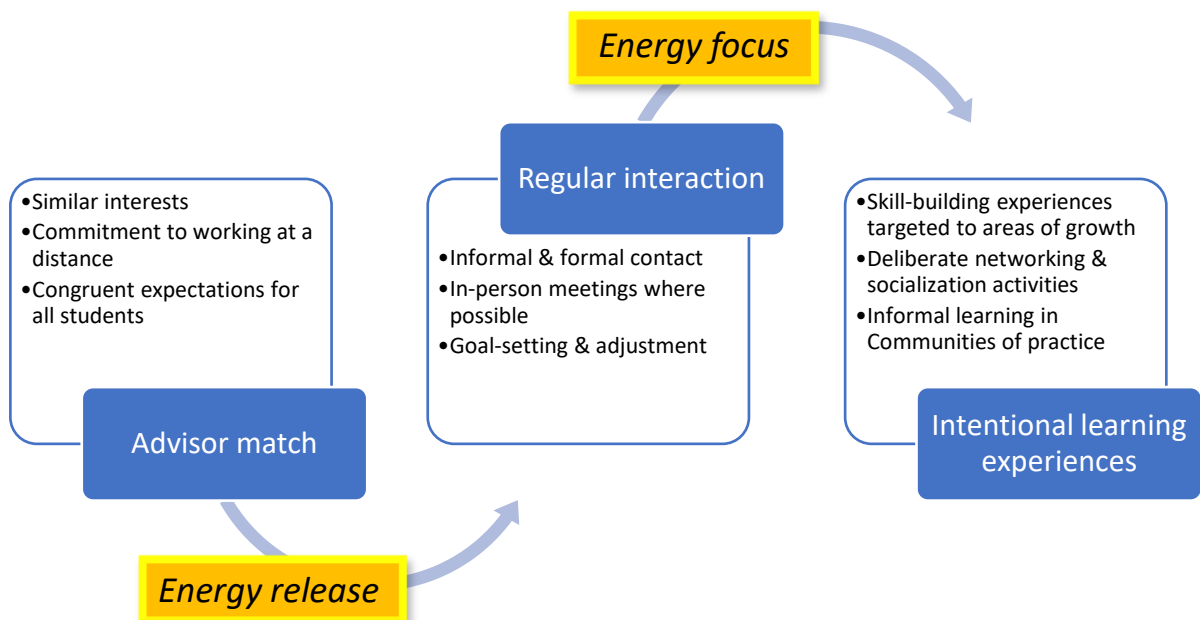
Conclusion

Whether by choice or necessity, doctoral students preparing for a faculty career will be trained online at a higher rate than before. They are preparing to join a faculty where expectations for familiarity in teaching online and working remotely have never been greater. These changes present unique challenges—but also new opportunities—for individual students with faculty aspirations to stay connected to their organizations, faculty members, and peers and gain the most from their education. These strategies can help students and faculty advisers take concrete steps to counteract the energy loss occurring in online education and create a more transformative and empowering experience.

Appendix: Tables & Figures

Table 6.1: Sources of Entropy and Negentropy in Online Education

Area	Source of Entropy	Source of Negentropy
Adviser relationship	Formal nature of interactions Lack of in-person connections to develop familiarity Perception of differing treatment among online and resident students	Regular informal interactions Shared work experiences On-campus or conference meetups where possible Congruent goals for online and in-residence students
Teaching experience	No teaching assistantships Limited access to teacher development, feedback, and assessment	Online teaching opportunities Local teaching opportunities Remote feedback and assessment Use of online expertise to train of other educators
Research experience	No research assistantships Limited access to on-campus research programs or funding	Targeted research opportunities with professor and remote colleagues (i.e. not limited to campus research programs) Remote participation in grant-writing activities
Service opportunities	Limited access to on-campus committees, organizations, or leadership opportunities	Virtual participation on committees and organizations Journal editing roles Opportunities for local impact
Peer and faculty networking	Removed from on-campus networks.	Intentional outreach efforts Offers to help review peer papers Virtual meetups before/after class On-campus or conference meetups
External networking	Limited access to networks, information, and travel funds	Shared research projects Maximizing conference opportunities Volunteering for national associations
Home-life	Distraction and disorder from multiple work and/or family commitments	Modifications to schedule to create space for schooling Goal setting and accountability loops with adviser Reliance on close ones for support and feedback on work

Figure 6.1: Online Education for Faculty Career Preparation

- Similar interests
- Commitment to working at a distance
- Congruent expectations for all students

Advisor match

Energy release

Regular interaction

Energy focus

- Informal & formal contact
- In-person meetings where possible
- Goal-setting & adjustment

- Skill-building experiences targeted to areas of growth
- Deliberate networking & socialization activities
- Informal learning in Communities of practice

Intentional learning experiences

Chapter 7: Conclusion

My approach to this study was somewhat unconventional for a doctoral dissertation. First, I used a conceptual framework from another discipline that is still emerging and relatively untested for research purposes. Second, rather than creating one body of work, I created three different articles to explore separate branches of my main research topic. This meant the resulting papers were connected in some respects, but they also took their own shape and identity in many ways. My aim in this final chapter is to summarize, integrate, and elevate the work of the previous chapters by reviewing how I arrived at my study, discussing the most salient findings of each article, identifying some of the overall contributions, and restating some recommendations and areas of future research.

Background on Study

Arriving at this research study took significant work. Having served as an academic administrator, I had an interest in the challenges of higher education institutions in responding to major changes in the business model of higher education. However, the more I considered where innovation at institutions comes from, the more central the role of faculty became in my thinking. I knew that faculty are the "backbone" of higher education institutions (Freeman et al., 2017), the most permanent personnel in academic organizations, whose ideas, energy, and buy-in are critical for any meaningful reform to take place. Yet, as I studied faculty leadership and innovation, it also became clear that the support of academic leaders is among the key determinants of their success (Kezar & Lester, 2011). Thus, I could not speak about innovation without talking about the role of faculty, and I could not discuss faculty without addressing the role of their leaders in creating the supportive environment needed for faculty members to thrive.

But this is where things got a bit complicated. It was as though to solve this question, I had to invite all these challenges into the same research "house" to sort out their issues together. Through the front door came all the well-publicized challenges that today's institutions are facing such as declining state funding, projected enrollment declines, increased competition from alternative providers, predictions of college closures and mergers, and the general need for more change and innovative thinking. Through one side door walked in the various challenges of faculty members, including their early-career training and

socialization, motivational structures, and their ongoing need to skill up in new areas as higher education changes around them. Through the other side door came the several challenges of academic leaders—their lack of training, limited resources, and unique role in creating organizational culture among a unit of peers. In this house all these challenges met, mingled, exchanged views, and occasionally argued about who needed the most attention. Meanwhile, through the back door snuck in a host of unwelcome guests, named power, privilege, academic capitalism, the rise of contingent faculty, and neoliberalism who began raising critical questions of the other guests. It was a challenge to maintain order in this house!

Then I was introduced to the concept of negentropy. Though it was still relatively undefined, negentropy had the potential to combine innovation, leadership, and a sense of collective responsibility or institutional investment in new and powerful ways. Negentropy had been used successfully in framing faculty roles in online learning (Carr-Chellman et al., 2019) organizational development (Carr-Chellman et al., 2019) and professional development (Freeman et al., 2017), among other subjects. But I knew additional work was needed around understanding the leadership side of negentropic behavior and the role of an academic leader in fostering 'negentropic actors' at each phase of a faculty career.

Thus, I arrived at my research question to explore the role of academic leaders—department chairs, deans, directors, and other senior leaders—in hiring, socializing, and empowering faculty as 'negentropic actors' to contribute solutions to their institutions' challenges. In addition, I recognized an opportunity to explore my own development as a 'negentropic actor' through my formative experience as an online doctoral student. Each of these three topics occupied a different phase of negentropic development in a faculty member's "lifecycle": the socialization of doctoral students, the hiring and early-career socialization of new faculty, and the ongoing training and motivation of existing faculty. This is depicted in Figure 1.2.

I opted to approach these questions in the context of a Manuscript Dissertation (MDIS), an alternative format that replaces a single body of findings with multiple peer-reviewed articles. I did this partly to explore different aspects of my main research question and partly as a "negentropic" act to deliberately prepare myself for a faculty career by gaining experience in different research methodologies and having opportunities for publication

(Freeman, 2018). The three phases of the faculty lifecycle became the focus of my research questions, albeit in reverse order. I first studied how high-performing academic leaders support the negentropic behavior of current faculty members, then how these leaders identify and hire potential negentropic actors. Then I planned to explore the role of socialization in the preparation of doctoral students to become negentropic faculty members.

However, it should be noted that some change occurred along the way in how I decided to approach this last question. As I began writing about my experiences as a doctoral student, I realized my position was somewhat unique. I was going about a traditional research-based doctoral program in a very non-traditional manner by studying online away from my campus community while preparing for a faculty career. While many doctoral students are purely online, few online students are participating in a traditional research-based program with the intent to be a faculty member. This became more relevant as COVID-19 hit and introduced many more doctoral students to online doctoral education. My focus then shifted to understanding how online doctoral education affects the career preparation of future faculty members like myself. I also explored how this form of education affected my identity as a 'negentropic actor' in a future faculty role.

Summary of Findings

Before discussing the contributions of the project, I aim to provide a brief "executive summary" of the findings from each chapter by discussing the underlying problem, research question, method, findings, and main recommendations. Given that each chapter or manuscript is a part of a greater whole, this is followed by a discussion on the integrated findings from the studies.

Chapter 4 (Manuscript 1): Fostering Faculty Negentropy as An Academic Leader

This chapter addressed the underlying challenge of fostering a culture of negentropic action when faculty's training, early-career socialization, and ongoing reward systems are so often not aligned with this aim. It also stemmed from the recognition that to successfully innovate and lead, faculty need the solid backing of a "supportive department chair, administrator" or other senior leader (Kezar et al., 2007, para. 7) who can change working conditions on their behalf to enable this work. I designed a pragmatic study and conducted qualitative interviews with 11 mid- to senior-level leaders at four-year institutions who were identified as high-performing deans, department chairs, or other leaders and asked for their

practices in supporting faculty innovation and change efforts. A variety of findings were shared for ways leaders can build structures to unlock faculty energy such as listening sessions, interdisciplinary working groups, proposal submission process, fellowship programs, and faculty-led meetings. This led to a three-part leadership model of supporting faculty negentropic behavior, namely to "contain" faculty energy loss through constructive listening, involvement, and decision-making; "train" faculty energy on defined problems and opportunities at the institution as well as provide training; and "sustain" this energy over time through a culture of trust.

Chapter 5 (Manuscript 2): Hiring and Socializing "Negentropic Actors"

Chapter 5 built on the research question of the first manuscript with the recognition that getting the right individuals "on the bus" (Collins, 2001) in the first place is critical to building a negentropic culture of an organization. It addressed the challenge of hiring and socializing negentropic actors who are capable of collective action, leadership, and innovation when early-career training for faculty members often is individually focused and de-emphasizes service, risk-taking, and teamwork. Using the same participants as in chapter 4, I asked high-performing leaders how they assess candidates' willingness to work for collective success, innovate, and lead and then how this emphasis translates into their early-career socialization of faculty. Findings suggest that leaders see their role in communicating a compelling vision for hiring, creating structure for candidates to be holistically and equitably assessed, taking responsibility for final decisions, and building a smooth on-ramp through selective mentoring and meaningful service opportunities. Recommendations include using multiple alternative methods of assessment for candidates, mixing up candidate pools, rethinking how mentors are assigned, designing socialization experiences that provide "early wins" in leadership, service, and innovation, and integrating service within new hires' teaching and research.

Chapter 6 (Manuscript 3): Online Doctoral Education for Faculty Career Preparation

Chapter 6 diverged from the previous two by using autoethnography as a research methodology to explore the first phase of faculty socialization. This study stemmed from my somewhat unusual position as an online doctoral in a research-based PhD program with the goal to serve as a faculty member. Given the timing of the COVID-19 virus and subsequent shutdown of many college campuses, the topic became relevant to many more doctoral

students. I explored the problem online doctoral students have of being removed from skill-building experiences, professional development, and the peer community of a traditional doctoral program—essentially becoming "knowledge-rich and relationship-poor." I asked what the strengths and weaknesses of online education were, how socialization had occurred for me, and what intentional strategies my advisor and me had to take to overcome the "entropy" associated with online studies. I found that entropy is rampant in online education through the isolation of online students, their separation from professional development opportunities, and the distraction many experience in their home environments. However, a number negentropic actions can be taken by students and advisers to combat this entropy and minimize energy loss. Recommendations included the need for online doctoral students and their advisors to inject energy into their studies by designing intentional learning experiences, using online networking tools, leveraging campus visits and conferences, and having "critical interactions" together. This led me to develop a three-phase model for online doctoral education that involves (a) a solid adviser match, (b) regular interaction, both formal and informal, and (c) intentional learning experiences targeted at areas of growth. I concluded by discussing how being an online doctoral student in my circumstances has reshaped the identity and better prepared me to be a negentropic faculty member.

Integrated Findings

How do these findings connect and what can be learned collectively about academic leadership, faculty preparation, and negentropy from these three studies? Despite their different focuses and methodologies, the findings connect in three primary ways. First, as mentioned, each touches a phase of the faculty development lifecycle that begins in doctoral programs and extends through the end of a career. Common themes across this lifecycle include the need for deliberate developmental experiences for faculty that are facilitated by an academic leader or adviser (in the case of doctoral education) and include activities such as mentoring, training in new skills areas, and socialization. This picture of an organization that pushes faculty members to continue to develop and grow no matter their career stage aligns with what some scholars have called the "deliberately developmental organization," or DDO (Fleming, 2016). In a DDO individual employees are transparent about their weaknesses and work collaboratively to develop each other, but this model of an organization requires a high degree of trust and understanding.

Second, the findings speak to the leader's role in creating *structure* for energy to be released and channeled within an organization. Academic leaders can create structure through efforts like listening sessions, faculty "think tanks," interdisciplinary working groups, faculty development programs, early-career programs, showcasing opportunities, and mentoring relationships, among others. Doctoral advisers create structure through tailored learning experiences, goals, assignments, and consistent forms of interaction that provide structure to an otherwise low-structure model of online doctoral education. Importantly, leaders create structure but are not required to generate energy themselves. This is perhaps different than how the role of leaders is viewed in other settings where a leader is expected to "bring the energy" or be the source of energy in all settings. The first law of thermodynamics states that energy cannot be created or destroyed. Instead, energy must be released, guided, channeled, or harnessed, among other actions. When leaders view their role as accessing energy already existing within their people, their perspective changes.

Third, each of the three chapters concern the changing expectations of faculty life and what can be done to facilitate these new roles and skills. This includes specific skill areas like online teaching and course building, marketing and recruiting, and grant-writing (Romano & Connell, 2015). It also applies more broadly to a mindset shift from focusing only on one's area of professional expertise to taking a more active role in collective problem-solving. Alexandre and Wergin (2016) described how an individual culture is strongly engrained in faculty life and the challenge of expanding this view:

> Faculty expertise is highly optimized, faculty's academic knowledge and professional autonomy remains sacrosanct. Of course, we see this as positive. Yet, the outright rejection of managerial hierarchy in the traditional academic culture has had its own unfortunate side effect, namely the expectation that faculty are responsible only for displaying specialized professional expertise, making more difficult a focus on collective responsibility, unit accountability, or shared governance in the truest sense of the word. (p. 232)

Each chapter provided different insights of developing faculty to meet this more expansive definition of faculty work. Chapter 4 demonstrated how faculty can be asked to team up with colleagues in designing new initiatives or be placed in offices around campus to provide scholarly insight to challenges of the local campus. Chapter 5 gave ideas on assessing for

collaborative abilities and innovation in the hiring process, asking for innovation in the early career, and organizing team-teaching and research opportunities. In Chapter 6, we see how online education, despite its drawbacks, can provide opportunities to learn skills in areas like online teaching and can force students to be more intentional in developing networks and collaborating with other peers and faculty. Yet we also see how online education still has significant room to grow in developing meaningful social and collaborative learning opportunities for students.

Contributions

The findings of the papers make contributions across several areas. I will discuss what these findings can mean for academic leadership, for online education, and finally, for negentropy as a useful framework of understanding. I will also share several pertinent recommendations from the research.

Academic Leaders and Faculty

Chapters 4 and 5 explored how faculty's involvement in leadership and change activities can be fostered in the hiring, early-career and career-long phases. Promoting the commitment (Carver et al., 2011; Lawrence et al., 2012), engagement (Morris, 2008), leadership (Kezar & Lester, 2011) service (Holland, 2019; Neumann & Terotsky, 2007) and citizenship (Lawrence et al., 2012) of faculty has long been an interest area of scholars and practitioners and a goal of academic leaders. But the question of how to support the work of faculty in their new scope of duties has received less attention. Leaders may be intimidated by the expectation that they have to manage both faculty's regular work of teaching and research and also be expected to direct their work in these other areas. They may see some negentropic activity happening in their schools and not know how to "direct and focus" it (Carr-Chellman et al., 2019, p. 442), or they may wish it were happening more abundantly and want to know how to spark it through the hiring and socialization process.

There is also a lack of good practices for training academic leaders in their everyday work. Some helpful resources are on the market (see for example, Bolman & Gallos, 2011; Gmelch & Buller, 2015) along with very useful guidebooks for training and development exercises (see for example, Green & Leonard, 2018). But leaders may be looking for more practical implementations of ideas to help unleash faculty ideas and creative energy. These results can be converted into various formats, starting with a research article and then reports,

blog posts, training materials, podcasts, or other formats that are more accessible to general practitioner audiences. For example, the results on hiring can be translated into a "guide for negentropic hiring" and other resources for leaders.

The following are some specific recommendations that flow from this research for academic leaders and faculty members. First, regarding how leaders can support the negentropic behavior of existing faculty members:

- Create both formal and informal structures such as listening sessions, think tanks, working groups, for faculty input to be collected and seriously considered.
- Help faculty members "get to yes" in their proposals through involving a team of faculty, encouraging evidence-based research for ideas, providing examples of successful proposals, and educating on political processes.
- Rather than wait for right timing for faculty ideas and initiatives, test concepts through pilot programs or by creating smaller-scale certificate programs.
- Focus faculty energy on defined problems and opportunities for the organization through faculty think tanks or working groups, especially in the ideation phase.
- Tap latent energy of senior faculty for projects such as mentoring and university initiatives that respond to deeply-held desires to give back.
- Create opportunities outside one's department or college for meaningful cross-disciplinary and campus interaction. Consider a "faculty fellows" type program that places faculty into administrative roles around campus on part-time basis.
- Consider removing unnecessary layers of review on new ideas and innovation coming up from faculty to prevent unnecessary negative attention from attaching to ideas.
- Promote an environment of trust and transparency both between administration and faculty and between colleagues. One-on-one relationships, regular informal interactions and shared experiences facilitate this trust.

Next, regarding the hiring of new faculty members, these recommendations can help academic leaders hire negentropic actors and providing early-career negentropic socialization:

- Communicate clear vision to hiring committee about goals of hiring process, including that failing a search is an acceptable option and diverse experiences and backgrounds are welcome and desired.

- Check bias in hiring process through training and explicit conversations around what is meant by "fit" and other potentially problematic terms.

- Ensure emphasis on collective mindset, innovation, and leadership is clear and consistent across position description, candidate screening matrixes, interview questions and assessment activities.

- Use multiple assessments for measuring traits like collegiality or collective mindset and triangulate results. Suggested approaches include meeting with students, portfolio presentations with emphasis on collective work, and space for informal interaction.

- Consider group interview processes and exercises as well as individual.

- Establish expectations of organizational culture with potential hire *before* interview process concludes.

- Provide realistic job preview so candidate is aware of challenges and approaches job with problem-solving mindset.

- Invite new hires to import best practices from previous institutions by explicitly welcoming input and feedback.

- Provide selective mentoring based on interests and consider multiple mentors to speak to both internal and external elements of position.

- Embed standards innovation, leadership, and collective service into early-career review frameworks while ensuring faculty have path for success

- Seek "early wins" for early career faculty members by low-stakes involvement in campus leadership and service opportunities.

- Seek opportunities to showcase new hires' skills and background to campus community to raise profile and seed future service and leadership opportunities.

- Look for alignment in new faculty's teaching, research, and service work when recommending service or leadership work.

- Encourage activities like team-teaching, collective course design, and joint research opportunities across the faculty lifespan.

Online Doctoral Education

Chapter 6 fills a gap in the literature on online education and has potential applications for students, advisers, and program designers. While there is decent amount of literature on

the online doctoral student experience covering aspects of socialization (Rourke & Kanuka, 2012), mentoring and student support (Kumar & Coe, 2017), and perceptions of quality (Ghezzi, 2007), these pieces do not specifically address training and socialization for students pursuing a faculty career, nor do they discuss research-based online doctoral programs with a traditional adviser-advisee relationship model. The University of Idaho's online program is unique in the sense that it provides the option for a fully online research-based PhD program for those interested both in practitioner and faculty careers.

For students considering a similar path in their doctoral education or who find themselves in such a program but are struggling to stay motivated, these findings may help give confidence to try new approaches to their education. For example, the full-time resident student versus part-time online student choice is a false dichotomy that ignores other potential options for students such as full-time online student or part-time online student, part-time worker. The earlier an online student makes changes to their learning situation to free up time for study, the better the outcomes. This also applies to PhD students in more traditional programs who are affected by COVID-19 right now. Colleges are offering much more flexibility to students for continuing their studies from home due to the virus, and students may find that remote study is more conducive to their needs for a season. Some specific recommendations for online students or prospective students interesting in pursuing a faculty career include:

- Assess goals and personal "joy level" of online study to understand if lifestyle changes are needed to facilitate improved experience.
- Consider all range of work-study options available to students (e.g. full-time online, part-time online, full-time on campus) to understand what is best for your situation.
- Set goals on par with residential students for research, publication, and conference attendance and discuss with adviser how to facilitate these.
- Ask for new opportunities that may not yet exist for online students.
- Be intentional about networking with peers, faculty, and external colleagues by asking for help, offering help, and arranging meetings where possible.
- Prioritize a campus visit near the beginning of a doctoral program and take advantage of conference attendance to build relationships with program faculty.

For faculty advisers, these findings provide a valuable model of a 'negentropic actor' in online doctoral advising. Many faculty are engaging more seriously in online advising due to COVID-19 and more likely will be in the future. While planning a truly online program requires significant upfront investment and energy and looks different than the emergency measures now in place, residential programs can still improve the experience offered to online students. Some of these experiences include offering remote teaching assistantships, engaging students in grant-writing, emphasizing regular checkpoints between advisers and students, and establishing online spaces to build community. A research apprenticeship course such as offered at my current institution offers a useful model of engaging remote students in a collaborative research community with faculty and peers. Here are a few specific recommendations related to program advisers and designers:

- Make program ambassadors available to prospective students based on desired type of work-study experience (e.g. full-time online, part-time online, full-time on campus).

- Create early checkpoints between advisers and students to assess progress and joy to facilitate any needed lifestyle changes.

- Encourage online students to visit campus early in their programs and not only during the dissertation phase.

- Emphasize conference submission and attendance for online students and make graduate travel funding available to online and part-time students where possible

- Prioritize co-curricular activities like outside research projects, teaching opportunities, conference preparation, and service and leadership to build skills and network. For example, online students can serve in teaching assistantships for online courses.

- Provide opportunities for "early wins" in doctoral experience through hosting internal first-year conference or similar experiences.

- Engage remote students in a collaborative research community with faculty and peers such as a research apprenticeship course.

Contributions to Negentropy

Lastly, a secondary contribution of this study was to explore negentropy as a research framework. Academic research has been criticized for being overly complicated and out of touch with the layperson. This criticism could easily be leveled at the use of negentropy as well. It is not a term used in everyday language or conversation. In fact, for every 59 Google

searches with the word "entropy," "negentropy" is only searched one time (*Google Trends*, 2020). But it is also a simple concept with such broad application that children and adults can likewise grasp it. Like many academic topics, the overriding challenge with negentropy remains the need to keep it simple and straightforward (KISS). As I have used negentropy in each of these studies, several potential contributions to negentropy as a research framework come to mind.

Definition of Negentropy. First, regarding the definition of negentropy, I was not able to find a congruent definition of the concept going into my studies. When analyzing responses of my participants, I observed three elements of negentropy emerging as depicted in Figure 4.1. I saw that negentropic individuals tended to (a) conceive new ways of doing things, (b) initiate action rather than wait to be instructed, and (c) act primarily for the interest of the organization rather than personal gain. Thus, I identified the primary elements of negentropic action as innovation, leadership, and organizational commitment. I also defined negentropy simply as "organization-centered innovation." This was necessary because some will question how negentropy or negentropic mindsets differ from more popular terms like "innovative mindset" (Sidhu, Goubet, & Xia, 2016) and "entrepreneurial mindset" (Davis et al., 2016). However, I stress that these definitions of negentropy have not been validated, and further conceptual work is required to bear out negentropy as a construct, including the development of a validated instrument.

Secondly, the chapters presented several potential ways to apply negentropy to research problems. In Chapter 6, entropy and negentropy were used as a frame to understand energy loss and gain within an organization along with the Communities of Practice (CoP) paradigm. I identified sources of entropy in online education, such as isolation, distraction, and lack of developmental opportunities. Then I analyzed my experiences to see what I or my adviser had done to "release energy" to counteract the entropy in this area—for example, by holding virtual meetups with classmates after class, setting goals with my adviser, and taking on outside research opportunities. This is perhaps the most simple and straightforward application of negentropy. In Chapter 4, I used negentropy more as a metaphor about energy, with the focus being how faculty can "harness," "direct," "focus," or even "store" faculty energy through the tools available to them, much like someone would do with an electrical system or circuit board. This led to a model of the negentropic leader who can "contain, train,

and sustain" faculty energy. Finally, in Chapter 5, I used negentropy to define a negentropic actor and discussed how leaders can hire through looking for the qualities of innovation, leadership, and collective responsibility.

It should be noted that this work differs in at least one key way from existing conceptions of negentropy. Carr-Chellman and colleagues (2019) advised organizations to achieve balance with the number of negentropic actors on staff. Having too many, they stated, "could produce instability amounting to a lack of focus and chasing too many bifurcation points" (p. 4). However, the implicit conclusion of my studies suggests negentropy is a desirable characteristic for all employees, not just a select few. Negentropic actions can be big or small, such as a faculty member introducing a new teaching method into the organization or even reconceptualizing how their office file system is organized for greater effectiveness. While employees can differ in their level of negentropy, I contend negentropic action is possible and even expected for all individuals in an organization. This reaffirms the importance of the leader because rather than viewing some organization members as being negentropic and some not, the leader has responsibility for fostering a work environment that unlocks the negentropic behavior of all team members. In other words, leadership matters because negentropy can be fostered, enabled, or to some extent developed in everyone.

Applying Negentropy to Organizations. As Carr-Chellman and colleagues (2019) have described there are several practical ways negentropy can be applied to organizational settings, whether in or out of higher education. Here I propose a few additional ways an academic leader could use negentropy in a training exercise, leadership development workshop, or listening session with faculty and staff. In keeping with the KISS principle, these exercises are deliberately brief and simple.

The first is a simple charting exercise similar to what I did in Chapter 6 on online education. After explaining the definitions of entropy and negentropy as counteracting forces, a facilitator could lead the group in going through different areas of the organization (e.g. retention, advising, recruiting, outreach) asking what areas are "losing energy" or show entropy in the organization. These can be processes, behaviors, or requirements that can be changed in the organization, not more static elements like the mission that cannot easily be changed. After sources of entropy are discussed, the facilitator leads the group in listing potential actions that can "add energy" back to the organization in those areas, not just to

restore what was lost but to bring the effectiveness of the organization to a higher level. One benefit of this concept is that entropy is a process that *naturally* occurs, thus discussing it does not need to be threatening. A facilitator should explain that individual staff members do not need to feel targeted if their areas are under examination for energy loss.

A second exercise could involve a facilitator using simple object lessons to demonstrate how entropy naturally occurs 1) in a physical system, such as ice melting in water or cream diffusing in a hot drink, 2) in an personal organizational system, such as papers scattered out of their place on a desk, and then how it occurs 3) in a relational system, like one's relationship with an acquaintance over time without any real contact or follow-up. Then a discussion could ensure on how their organization also experiences entropy in key areas of work and what can be done to restore energy to those systems. A facilitator with more knowledge about electrical grids, circuits, or energy systems like hydro-electric plants could deepen the exercise by applying concepts of energy transfer, conversion, loss, and gain in these systems to show how innovative energy flows within an organization.

Future Research

As discussed in each of the papers, there is ample room for additional research on all of these subjects. Regarding the role of academic leaders in supporting negentropic behavior, more work is needed on understanding motivation and incentive systems. The debate over the role of motivation is captured the contrasting quotes from Shane and Holly-Anne in Chapter 6 regarding what motivates senior faculty. Shane was adamant that only money or time off could motivate faculty, while Holly-Anne seemed convinced she got better effort out of faculty by appealing to their intrinsic sources of motivation. Most participants seemed to agree with Holly-Anne's approach; however, faculty motivation needs to be further explored. Specifically, the role of non-financial incentives like research, teaching, and administrative support bear additional study in fostering negentropic behavior. Further, if intrinsic rewards are highly prized by faculty, how can leaders understand what internal rewards motivate which faculty members?

How leaders respond to failure when negentropic work is tried but fails also merits more study. Allowing faculty members to "fail forward" was identified by Carr-Chellman and colleagues (2019) as a key piece of negentropic leadership behavior; however, little is known about response to failure in practice. For example, a failed 2018 faculty-led initiative at the

University of Texas to deliver online learning via synchronous means resulted in tens of millions of dollars of losses (Lederman, 2018). How this failed initiative will affect future negentropic work of faculty members and what can be learned from it and other failures s an open question.

Regarding the hiring and socialization of negentropic faculty, more work is needed at the very beginning of the spectrum to understand how doctoral programs can be changed to shape the mindsets of new faculty in more collective and negentropic ways. How can doctoral programs incorporate more training of "new" faculty skills such as online program building, marketing and recruitment, partnership-building, and community outreach? And as the faculty job market continues to be oversaturated, how will higher-tier schools adapt their faculty preparation programs to meet the needs of lower-tier schools who carry out education in increasingly divergent ways than the training institution? Additional study is also needed on the recruitment of candidates for faculty positions and how institutions can open the aperture of candidates to those with a range of backgrounds and experience as a means of increasing innovation among the faculty (Gasman, 2016).

Finally, the preparation of academic leaders is a subject that continues to get short shrift in the literature. This is especially true in knowing how to prepare leaders to manage the new, technology-enabled, outward-facing, and even entrepreneurial activities expected of today's faculty. Future research can consider effective forms of preparation for leaders to learn and manage these activities and frameworks for understanding the ethical dilemmas that may arise in dealing with faculty negentropic behavior.

Conclusion

To return to the analogy at the beginning of the chapter, sorting out all the interactions occurring in my research "house" was complicated and at times messy. But I believe some important connections were made that can further our understanding of effective academic leadership, faculty development as innovators and change-makers for their institutions, and online doctoral education. Negentropy served as the "roof" of this house and the overarching concept that enables faculty to provide solutions to the challenges of their institutions and leaders to offer meaningful support to their faculty members. My hope is this new knowledge will enhance our understanding of how to improve the vital relationship between leaders and faculty members and bring insight from the theoretical to the practical on how leaders can

hire, socialize, and support faculty to retake their place as the true leaders of their institutions. Further, I hope this research will help empower those preparing for a faculty career via online means to take concrete steps to create a more transformative experience in their own preparation as a future negentropic faculty member.

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Appendix A: Institutional Review Board (IRB) Approval

Outcome Letter from University of Idaho IRB

University of Idaho
Office of Research Assurances

Institutional Review Board
875 Perimeter Drive, MS 3010
Moscow, ID 83844-3010
Phone: 208-885-6162
Fax: 208-885-6014
Email: irb@uidaho.edu

To: Sydney Freeman Jr.

Cc: Thacker, Russell S

From: University of Idaho Institutional Review Board

Approval Date: December 02, 2019

Title: Developing Negentropic Mindset for Higher Education

Project: 19-235
Certified: Certified as exempt under category 2 at 45 CFR 46.104(d)(2).

On behalf of the Institutional Review Board at the University of Idaho, I am pleased to inform you that the protocol for this research project has been certified as exempt under the category listed above.

This certification is valid only for the study protocol as it was submitted. Studies certified as Exempt are not subject to continuing review and this certification does not expire. However, if changes are made to the study protocol, you must submit the changes through VERAS for review before implementing the changes. Amendments may include but are not limited to, changes in study population, study personnel, study instruments, consent documents, recruitment materials, sites of research, etc.

As Principal Investigator, you are responsible for ensuring compliance with all applicable FERPA regulations, University of Idaho policies, state and federal regulations. Every effort should be made to ensure that the project is conducted in a manner consistent with the three fundamental principles identified in the Belmont Report: respect for persons; beneficence; and justice. The Principal Investigator is responsible for ensuring that all study personnel have completed the online human subjects training requirement. Please complete the *Study Status Check and Closure Form* in VERAS when the project is completed.

You are required to timely notify the IRB if any unanticipated or adverse events occur during the study, if you experience and increased risk to the participants, or if you have participants withdraw or register complaints about the study.

Appendix B: Recruitment Script

Example Recruitment Script Using "Snowball" Interview Method

Invitation - study on academic leaders

Thacker, Russell (thac2014@vandals.uidaho.edu) <thac2014@vandals.uidaho.edu>
Fri 4/17/2020 11:30 AM

To: ███████████████████
███████████████████

Greetings. Your colleague ███████████████ recommended I reach out to you as a potential participant in a research study I am conducting on academic leaders who have been successful in encouraging their faculty members to develop new ideas, initiatives, and programs and show leadership at their institutions in times of challenge.

Participating would involve an approximately 30-minute video or phone interview. I know right now is a demanding time for higher ed leaders. I will be conducting this study over the next two months and am very flexible on the timing of when we could connect.

More information on the study is found below, and I would be happy to answer any questions. I wish you the best in navigating the current challenges.

Kind regards,
Russell

Call for participants: Research study on the practices of high-performing academic leaders in supporting faculty innovation and leadership.

Have you served as an academic leader (e.g. dean, department chair, center director, or other senior leader) and found ways to support the innovation and leadership of your faculty on campus? I welcome the opportunity to speak with you. Colleges are experiencing a number of enrollment, financial, or other challenges requiring the energy and leadership of faculty members at a time when many forces are pulling the attention of faculty members away from their institutions. This study explores the role of academic leaders in hiring, socializing, and supporting faculty members to be effective change agents within their institutions.

Participating in this study involves an approximately 30-minute video or phone interview. If you would like to volunteer to participate, or if you have a peer or colleague who fits this description, please contact Russell Thacker, PhD candidate, at thac2014@vandals.uidaho.edu. Questions regarding this study may also be directed to Dr. Sydney Freeman, Jr. at sfreemanjr@uidaho.edu.

Russell S. Thacker
Adult, Organizational Learning & Leadership
College of Education, Health, & Human Services
University of Idaho - Boise, ID

Appendix C: Interview Guide and Self-Questionnaire

Interview Guide for Academic Leader Interviews

[INTRODUCTORY SCRIPT]

Thank you for agreeing to be interviewed today. I am conducting a study regarding the practices of academic leaders in supporting, motivating, and hiring faculty at four-year institutions of higher education. Research findings may be used in the publication of a book, scholarly journal articles, and presented at national conferences. I am going to ask you questions about your experience prior to and during your service as an academic leader.

The information you share with us today is completely confidential. You will be assigned a pseudonym and your responses will not have any identifying information. Your responses will only be visible to me and will be combined with responses from other participants. The information I gather here will inform the work of preparing academic leaders to support the new duties of faculty members. To ensure that I capture accurate and complete responses, I would like to record this interview. As I mentioned, the recording will be transcribed and all names and places will be removed to protect your identity. Recordings will be destroyed after transcription.

Do I have permission to tape record?

Personal background

- What motivated you to become an academic leader?
- How would you define success in your role as an academic leader?

Role of leaders in supporting the new duties of faculty

Financial and enrollment challenges at many institutions are causing leaders to look to faculty to contribute innovative solutions beyond their traditional scope of duties. This includes tasks that faculty may not have been trained for, like recruiting students, obtaining grants, developing industry partnerships, and developing new online programs.

- Is this true in your experience, and if so, how have you seen this occur?
- What are the key skills and competencies necessary for faculty to carry out these new responsibilities?
- What role does an academic leader play in supporting and motivating faculty in these areas?
    - How do you develop a collective mindset over individual success among faculty?
    - What professional development activities do you promote for faculty to develop in these areas?
    - How do you structure your financial or other incentives to motivate faculty?

- o What tools or resources do you wish you could employ, such as from the private sector, but are not able to use?
- How do you encourage these types of activities without exploiting faculty? On the other hand, how do your guard against potentially unethical situations for faculty, such as in developing negative partnerships with businesses?

Role of leaders in hiring new faculty members

- When hiring new faculty members, what are the key skills and competencies you seek?
- During the hiring process, how do you evaluate the mindset of potential faculty members to work for collective as well as individual success?
- What is your approach to socializing new faculty members to develop a mindset of both collective and individual success?
- What skills or behaviors do you wish doctoral programs did better at in preparing new faculty?

****

Extra questions

- Can you give an example of specific ideas, programs, or initiatives started by faculty members outside of their traditional roles of teaching and research that has advanced your institution?
- How prepared do you feel as a leader for managing faculty in these new roles? What training or development would be most beneficial for you?
- When giving faculty the freedom to create, invent, and lead outside their normal scope of duties, how do you build their trust that leadership is supporting them?
- What tools have you found to be most effective for motivating faculty to innovate, create, new programs, and reach new markets?
- How would you describe a faculty member who is invested in both collective and individual success?

Self-Questionnaire for Autoethnography

1. *Why did I pursue an online PhD?*

2. *What were my desired outcomes for my program?*

3. *How did the online doctoral program affect my desire to be a faculty member?*

4. *What are the gaps I perceive I'm missing in the online experience compared to in-residence students pursuing a full-time faculty position?*

5. *What are the intentional strategies I have had to use to compensate for perceived gaps in my online education?*

6. *What is the role of intentionality? Why is it important for someone to be intentional about their training to become a faculty member?*

7. *Why is my experience in being socialized unique to other online doctoral students? Why was I able to do this while others in the same or similar programs were not?*

8. *What were some of the advantages that online learning offered me?*

9. *How has my experience as an online student affected my vision for a future career as a faculty member, and how does being an online student shape my scholarly identities?*

10. *How can online doctoral programs be improved to help prepare students for faculty careers?*

Appendix D: Member Checking

Example of Member Checking Process

Academic leader study - checking quotes

Thacker, Russell (thac2014@vandals.uidaho.edu) <thac2014@vandals.uidaho.edu>
Fri 6/12/2020 5:32 PM

To: ████████████████
████████████████

I hope all is well. Thanks so much for participating in my interview on academic leaders back in May. As a follow-up to our conversation, I want to share back with you some quotes that I transcribed from our interview. I found these quotes particularly compelling and plan to use them in this stage of my research along with other ideas and examples from the interview (not attributed to names of course). Please feel free to make any changes or clarifications in the quotes by letting me know. Secondly, if you have any additional thoughts you've had since the interview, please share!

•••

"We've gone to great lengths to try and mix it up. … One of the things that's going to kill the academy for a lot of small schools is you've got so much in-bred thinking and lack of diversity. So, you have faculty in the departments who reinforce each other's' ignorance in terms of what's happening and the way the academy is supposed to work. And boy that's a really hard thing to change. Unless you're bringing in an infusion of fresh and different ways of thinking from the outside and intentionally mixing it up." (I use this in the context of creating diverse recruitment and hiring pools as a way of increasing the innovation potential of the institution)

"[Our college] is really a fluid institution. I typically will not recommend to hire somebody if they are rigid in their approach or their way of thinking." (I use this to reinforce the value of assessing a candidate's mentality and fit for the institutional culture)

"But this chair was very persistent, and she brought the idea to me and her dean. And we thought that it really had merit, so we supported her. And it turned into a bit of a political… some of the faculty in her department actually ganged up against her. They just did not think it was a legitimate offering. And when we looked at the research she had pulled together, it was really good, and it was clear that she was right. So we wound up having to separate the undergrad from the grad because they would not play nice in the sandbox with her… This new graduate program now seven years in has generated over four million in net revenue, 160 students, and it's a great success story." (I use this story about the clinical program to discuss potential for resistance to innovation and how leaders evaluate the proposals of faculty members for merit)

" I think that's also why it works to have decision-making dispersed across the schools for the curriculum because you have multiple things coming at the same time often, and people don't quite know where to attach if they're going to be resistant to something. Whereas if you've got one big thing it's like "oh all right, we're going to get our energies around resisting this." (this is a continuation of the above story that I use to talk about diffusing resistance by removing layers of decision-making and keeping a free flow of ideas throughout the institution)

"One of the disadvantages of having a Provost who is so entrepreneurial that there is no idea I don't like. I could sit around and come up with new ideas until the day is long…

Now I'm stepping out of the role, and I'm not sure if that's a healthy culture, because you really want to develop that culture for the long term across the board. And I think we have become a little too reliant on the administration coming up with new program ideas." (I use this quote to discuss the need to develop innovation and leadership capacity faculty on ongoing basis)

"I try to get up close and personal with faculty because I have found especially at a smaller campus that if people know you, they are more likely to give you the benefit of the doubt. So you know, going to the dining hall, which is hard to do right now, but eating and sitting down at the table with faculty members and just getting to know them. I send notes, a lot of personal notes to faculty. When I hear about something that somebody has done that I think is terrific I'll send them a personal note. There are a lot of things I tried to do to demonstrate affirmation. … So you just can't substitute all those little acts of letting people know that you know them and you recognize their value. You build up a lot of social capital by doing that that you can then draw from." (I use this to talk about trust-building as ongoing activity that must accompany environment of innovation and risk-taking)

***

Once I complete the final write-ups, I will make any finished products available if you wish to see them. Again, I very much appreciate your assistance on this study, and I wish you a great ███████████████████

Kind regards
Russell

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