From the Editor's Desk

I am humbled by the opportunity to work with the classic grounded theory community and to follow in the footsteps of the previous two editors, Judith Holton and Astrid Gynnild. I am excited to work closely with Barney Glaser, the editorial board, and peer reviewers. One of the most exciting aspects of the Review is the engagement of a global community of classic grounded theorists. Internationally diverse researchers from many disciplines collectively engage in this important research method. As editor, I pledge to continue international multi-disciplinary collaboration and promote the conduct and dissemination of classic grounded theories.

Glaser and Strauss developed the classic grounded theory over 50 years ago. Barney Glaser has continued to teach the classic method through writing more than 29 books and dozens of papers, leading seminars in the U.S. and Europe, and mentoring PhD students. Conducting a classic grounded theory study requires adherence to the essence, procedures, and language of the method as described by Glaser. Getting the basics right is key to developing a grounded theory. This issue includes a reprint of a chapter from Glaser's 1992 book, *Basics of Grounded Theory Analysis*. In this chapter Glaser discusses how to get started, how to avoid preconception, and how to think about the grounded theory research question.

Grounded theory reverberates with diverse people because, when executed well, grounded theories illustrate human truths that are recognized beyond geographic or disciplinary boundaries. That is why a physician or sociologist can read a theory discovered by a mathematician, nurse, or dietician and acknowledge the truth embedded in the theory. This issue of the Review includes contributions from authors from Australia, Ireland, Sweden, and the U.S. with fields of study as diverse as nursing, engineering, education, psychology, and dietetics.

Susan Bush Welch delivers a powerful theory exploring how parents experience the expected death of an infant from a life-limiting congenital anomaly. The grounded theory *Navigating Infant Death from Life-Limiting Congenital Anomaly* includes three stages and two cutting points. The first stage is living in innocence which ends with the first cutting point of getting the bad news. The second stage is parenting in the new reality which ends with the second cutting point, death of the baby. The final stage of the theory is going on. This powerful new theory has practice implications for nurses, physicians, and other health care professionals.

In the paper *Negotiating Emotional Order*, Jennifer A. Klimek Yingling captures the processes that occur when women have completed initial treatment for breast cancer. The theory consists of five stages of negotiating emotional order emerge. This study will help healthcare providers who care for breast cancer survivors understand the depth of perpetual emotional impact that breast cancer survivors endure.

Siri Khalsa-Zemel and Kara Vander Linden explore hunger in the paper, *Developing Mind Body Hunger Mastery*. The theory touches on overweight and obesity, mind body

medicine, and personal development. The substantive theory depicts two types of hunger, physical hunger and abstract hunger, each requiring separate nourishment processes. The authors conclude that it may be possible to escape confusion and hunger suffering through self-awareness and development of mind body hunger mastery.

Bonnie Johnson, Karen Holdness, Wayne Porter, and Alejandro Hernandez's paper details the classic grounded theory approach to develop a conceptual theory for an engineering solution to address highly complex problems. The project resulted in the emergence of a theory for a new class of engineered *Complex Adaptive Systems of Systems* solutions.

In *A Grounded Theory on Obtaining Congruence in Decision Making,* Michal T. Lysek explains how people who receive contradictory information decide which option to select. The process of obtaining congruence in decision making consists of four stages: struggling, congruencing, deciding, and justifying. The process shows how people resolve cognitive struggles related to contradictive issues. By better understanding decision-making process, Lysek posits that leaders can better learn how to influence people's decisions.

Debbie Garratt contributed an essay exploring the journey of undertaking a Grounded Theory research project in an area about which little was known. Garrett explains that through the grounded theory process, she became an expert. She describes how this shift from "little known" to "expert area" occurred and discusses the challenges of overcoming anxiety associated with the shift. Garrett concluded that expert knowledge enables nuances to be seen that may otherwise be missed, but that having expert knowledge necessitated greater attention to ensuring sensitization, not preconception.

Ann O'Conner, Barry Carpenter, and Barry Coghlan explore the debate surrounding classic grounded theory versus the constructivist version. The paper evaluates the various claims in a critical manner by revisiting the original discourse outlining these approaches. The importance of maintaining a reflective, neutral stance while examining the arguments and evidence for the claims on both sides of this debate is emphasized. The rationale for choosing a classic grounded theory is outlined and suggestions are offered to novice researchers as they choose the most appropriate approach.

I hope you enjoy reading the theories and essays in this issue of the Grounded Theory Review. As we move forward, we will continue to honor Dr. Glaser's work by supporting and disseminating classic grounded theories. We will restrict publication to those papers that adhere to the classic grounded theory method. We enthusiastically welcome papers from all disciplines and all areas of our global community.

Alvita Nathaniel, PhD
Editor

Editor's Note: *In my career as an educator, I found that PhD students stumbled on the most basic questions about how to get started with a grounded theory study, what to study, and how to craft the research question. Students find it most difficult to be open to emergence—to trust that the core category will emerge if study participants are allowed to divulge their main concern as they perceive it. The following is advice from Barney Glaser on how to overcome these fears. Excerpted from chapter 4 of Basics of Grounded Theory Analysis (1992), and edited for clarity, Barney Glaser's advice on these issues is timeless.*

Getting Started

Barney G. Glaser, PhD, Hon PhD, USA

It may sometimes be said that one of the most difficult parts of doing research is to get started. The making of choices and commitments to a research problem seem less secured and structured when doing descriptive research in quantitative or qualitative research. This occurs because the research problem is chosen beforehand and therefore forces the data, thus the yield may be small or nothing since the problem in fact may not be relevant. A "thought up" problem may sound juicy, but the preconception leads nowhere.

The underlying principle in grounded theory which leads to a researchable problem with high yield and relevance is that the research problem and its delimitation are discovered or emerge as the open coding begins on the first interviews and observations. They soon become quite clear and structured as coding, collection, and analyzing begin, a core variable emerges, and saturation starts to occur. In short, getting started in grounded theory research and analysis is as much a part of the methodological process as are the ensuing phases of the research.

The researcher should not worry. The problem will emerge as well as the manner by which the subjects involved continually process it. As a matter of fact, it emerges too fast most of the time and the researcher must restrain herself until sure if it is core and will account for most of the variation of action in the substantive area under study. As categories emerge in open coding, they all sound like juicy problems to research, but all are not core relevant. Only one or at most two. Remember and trust that the research problem is as much discovered as the process that continues to resolve it, and indeed the resolving process usually indicates the problem. They are integrated.

Area vs Problem

There is a significant need to clarify the distinction between being interested in an area compared to a problem. A researcher can have a sociological interest which yields a research problem and then look for a substantive area or population with which to study it. But, this is not grounded theory. It is a preconceived, forcing of the data. It is okay and

can produce good sociological description, but it usually misses what subjects in the substantive area under study consider, in their perspective, the true problems they face. This kind of forcing with the support of advisor and colleagues can often derail the researcher forever from being sensitive to the grounded problems of the area and their resolutions. A missed problem is a problem whether or not the researcher discovers and attends to it. It does not go away. We find, as grounded theorists, so often in preconceived research that the main problem stares us in the face as the researcher just attends elsewhere and misses it completely, in an effort to describe what is going on. Squelching it from focus does not remove its relevance.

In vital contrast, the grounded theory researcher, whether in qualitative or quantitative data, moves into an area of interest with no problem. He moves in with the abstract wonderment of what is going on that is an issue and how it is handled. Or, what is the core process that continually resolves the main concern of the subjects. He discovers that truth is stranger than fiction. If he moves into an area with an interest in studying people in pain, he will discover what problem pain produces and how it is resolved or processed. The social structure of each substantive area can make this resolution quite different. The grounded theorist keeps his mind open to the true problems in the area. A forcing researcher may study risk taking in steeplejack work; a grounded theorist will probably discover that the main problem is negotiating the day's voyeurism, with the risks involved as a minor consideration.

As mentioned in *Theoretical Sensitivity*, it is most advisable to the grounded theorist, when at all possible, to choose an area with a life cycle interest to gain enough motivation to get her through the research to the end product. But even when a researcher has to study an area of lesser interest, it is likely that the conceptualization of it will still be of interest as a general sociological concern and process. Thus, if one has money to study meat packing, he may be able to study on an abstract level the style of eating patterns in diverse social classes.

Areas of interest are not hard to come by. They abound, and with grounded theory, the research problem emerges easily; whereas, a preconceived problem is hard to come by with the surety it will both yield findings that will be supported by enough data. When a research problem is elusive or hard to come by, a lot of people tend to give advice. However, the grounded theorist should be wary, since his approach to the research problem is both grounded and easier. The researcher's search for the preconceived problem is subject to the whims and wisdoms of advisors with much experience and of colleagues. He should be careful as he may just end up studying his advisor's pet problem with no yield for him and data for the advisor. And he will likely miss the relevance in the data.

Preconception using the technical literature can have a level of groundedness in it, especially at the end of a piece where the author "appeals to future research." This is, of course, a good lead and the grounded theorist should consider these issues but be careful that they are born out in his own emergence of problems in the area, as later date conditions may have changed relevancies. Personal experience and or professional experience associated with it can produce strong, life cycle, substantive areas of interest.

But, the grounded theorist must be careful not to force data with his or her own problem and keep an open mind to the emergence of the subjects' problem. The researcher's personal problem may be idiosyncratic, but once the general concern emerges, it is almost sure to integrate as a varying property of it. The life cycle interest will be taken care of and be enhanced with understanding coming from the emerging theory.

The Research Question

The need to preconceive is strong when there is no trust in discovery of a problem. The researcher should fight this and learn not to know, when telling himself or others what he is studying. Do not say anything until the core problem has emerged and proves to be a stable focus of the research.

In comparison to preconceived description, there is no dilemma when choosing the grounded theory methodology, as to when the problem may become known, whether with quantitative or qualitative data. There is no need to waste time on the debate as to whether or not the research question should dictate the method or the method the research question. The researcher need not be concerned whether or not the data should be collected quantitatively or qualitatively or in what combination, as required when studying the preconceived problem.

Once choosing the grounded theory methodology, this debate is moot. The methodology processes out the emergent problem and all data of whatever type is grist for the mill of constant comparison to develop categories and their properties. The emergent research problem will core out and be delimited by diverse conditions such as the researcher's training, the locale of subjects, funding, etc. Boundaries to the problem will emerge and the one criteria of grounded theory, modifiability, says that a good grounded theory should be readily modifiable to new conditions, new subjects, and perspectives on the same problem, provided that the same problem is relative to the new area.

Remember that grounded theory research is the study of abstract problems and their processes, not units. Unit analysis is for description. Thus, studying women managing pregnancy is not to focus on women, but to discover their emergent problems and their resolutions for managing the pregnancies. These problems will likely vary considerably with studies in different areas.

The Specific Research Question

To repeat, the research question in a grounded theory study is not a statement that identifies the phenomenon to be studied. The problem emerges and questions regarding the problem emerge by which to guide theoretical sampling. Out of open coding, collection by theoretical sampling, and analyzing by constant comparison emerge a focus for the research.

Even then, when specific questions can be asked without forcing the data or its collection, the researcher never, never asks the question directly in the interviews as this

would preconceive the emergence of data. Interview questions have to relate directly to what the interview is about empirically, so the researcher maximizes the acquisition of non-forced data. The specific questions are in the thoughts and the analysis of the researcher, to be reviewed later. Think theory, talk everyday common-sense English. And this method of qualitative analysis is the same for qualitative as for quantitative collection of data. In grounded theory, there is no preconception of being too broad or global or narrow at whatever stage; the grounded theory process steers the path to bounded focus. And with grounded theory there is also no preconceived relevance as to whether questions to subjects are interactional, organizational, biographical, psychological, or whatever. The emerging questions simply tap the variables that work whatever the field. Obviously, a researcher is trained in the sophisticated use of one or the other variable and will be more theoretically sensitive in his own area. If a major variable occurs in an area outside his training, he may have to call in a consultant. At minimum, he will have to report this grounded fact in his theory, not ignore it as having no relevance. Thus, a sociologist may have to consult with an economist or psychologist or political scientist at times to better understand processes in their fields.

In sum, when a researcher flounders in getting started on a research project, it is quite often the result of forcing on the data a preconceived problem that ought to take the data apart and give yield but does not, because of lack of relevancy. The researcher is lost and sees the data as recalcitrant. The grounded theory researcher bypasses this problem in getting started by simply studying what is to be studied with no preconception of what should be in advance of its emergence. He has the patience and security and trust to wait for its emergence. Also, he trusts himself not to know in advance and forces himself not to pontificate that he knows better than the subjects involved what is most relevant to them.

Glaser, B. (1992). Basics of grounded theory analysis. Mill Valley, CA: Sociology Press.

Navigating Infant Death from Life-Limiting Congenital Anomaly: A Classic Grounded Theory Study

Susan Bush Welch, PhD, RN

Abstract

The purpose of this classic grounded theory study was to explore how parents experience the expected death of an infant from a life-limiting congenital anomaly. These anomalies are the leading cause of death of infants in the United States. Death typically occurs in intensive care units with limited access to adequate palliative/end-of-life care. An extensive knowledge gap about the experience of these parents exists. The grounded theory *Navigating Infant Death from Life-Limiting Congenital Anomaly* contains three stages and two cutting points. The first stage is *living in innocence* which ends with the first cutting point of *getting the bad news.* The second stage is *parenting in the new reality* which ends with the second cutting point, *death of the baby*. The final stage of the theory is *going on.* This new theory has implications for nursing/health care professionals in practice and research. This study was conducted as the dissertation while the author was a student in the doctoral program at West Virginia University.

Keywords: classic grounded theory, infant death, congenital, parenting, anomaly

Introduction

Birth and death are two end-points on the continuum of life. For some infants, the space separating birth and death is very close with death occurring just minutes after birth. Many of these children are infants born with life-limiting congenital anomalies. In 2016, 23,000 infants died in the United States with congenital anomalies the leading cause of death (20%, n=4816) (Xu, Murphy, Kochanek, Batian & Arias, 2018). Worldwide the percentage of deaths from congenital anomalies is 11.3% for neonates, and 6.5% for 1-59 month old infants/children (World Health Organization [WHO], 2018).

There is much literature about the impact of infant loss on parents. However most of it focuses on death through sudden and unexpected mean such as Sudden Infant Death syndrome (SIDS), stillbirth, extreme prematurity, or miscarriage. The experience of parents whose infant has a life-limiting congenital anomaly is different. These parents know their baby will die. Scant research exists in which authors explored the experience of parents who had an infant die from life-limiting congenital anomalies.

Recent authors have focused on adequate palliative and end-of-life care for infants with life-limiting congenital anomalies and the families (American Academy of Pediatrics, 2013; Dahlen, 2013; National Association of Neonatal Nurses, 2015). Unfortunately, little

empirical evidence defines and describes adequate palliative and end-of-life care. Of special note is the scarcity of evidence describing parents' experiences. Classic grounded theory was used to explore the process parents experienced during the birth, life, and death of an infant with a life-limiting congenital anomaly. The development of a substantive theory using classic grounded theory methodology will assist health care professionals to understand and address parental needs through this process.

Method, Data Collection and Analysis

The dearth of literature specific to this population supported the use of qualitative methods. Health care professionals cannot develop appropriate interventions when so little is known about the experience of these parents. Classic grounded theory was chosen because it is a powerful method to understand unfolding processes. The parents' experience from birth to death was an unfolding process.

The study was approved by the Institutional Review Board to ensure the protection of participants. Data collection, sampling and data analysis/interpretation occurred iteratively. Almost all sampling was purposive. To qualify for the study, each participant was (a) the biological mother or father of an infant who died of a life-limiting congenital anomaly within the first 15 months of life, (b) over 18, and (c) understood/spoke English. The baby had to meet the following criteria: (a) lived at least 48 hours and no more than 15 months, (b) had a prenatal or post-delivery diagnosis of a life-limiting congenital anomaly, and (c) died within the last 10 years. A healthy pregnant woman was interviewed for theoretical sampling to illuminate the experience of hope and expectation of pregnancy that was no longer real to the other participants. Sampling took place until saturation occurred. There were a total of 12 participants, eleven females and one male. All but one participant lived in West Virginia. The babies suffered from a variety of congenital anomalies. Diagnosis of the anomaly occurred prenatally (n= 4), at delivery (n=4), in the first day or two of life (n=1) and after 30 days (n=2). The life span of the deceased babies ranged from three days to nine months of age. Six of the babies died within the first two weeks of life, the rest between three months to nine months of age.

The participants were first contacted by a third party about willingness to participate in the study. The participant chose where, when, and how the non-structured interview happened. Interviews were not recorded, as suggested by Glaser (1998). The writing of field notes on a password-protected computer occurred within minutes of completion of the interviews. Data analysis started after the first interview. Constant comparison was used throughout the process to code and classify data. Memos were generated and sorted. The outcome of the study was the grounded theory *navigating infant death from life-limiting congenital anomaly (navigating infant death).*

Navigating Infant Death from Life-Limiting Congenital Anomaly

The theory of *navigating infant death* has three stages with two cutting points. In the first stage, the parent-to-be/parent is *living in innocence*. *Living in innocence* abruptly ends with the cutting point of *getting the bad news*. *Getting the bad news* occurs when the parent learns that there is a major health issue with the fetus/baby. This cutting point may happen

prenatally or after birth. The second stage *of parenting in the new reality* starts after *getting the bad news*. During the stage of *parenting in the new reality*, the following processes occur: *seeking answers, squeezing a lifetime into a moment, and letting go*. A second cutting point occurs at the *death of the baby*. The third stage that follows the death of the baby is *going on*. *Going on* includes four processes: s*aying goodbye, seeking meaning in the baby's life, keeping his/her memory alive, and living life*.

Stage 1: Living in Innocence

Living in innocence is the first stage of the theory. During this stage, the expecting parent awaits the birth of a healthy baby or the new parent enjoys a seemingly healthy baby. The physical discomfort related to pregnancy or childbirth are minimized or tolerated because the outcome, a healthy baby, is worth it. The parent feels optimistic and plans for a future that includes the new baby. This time is full of hopes and dreams. However, this stage ends abruptly with the diagnosis of a life-limiting congenital anomaly or *getting the bad news*. The participants talked briefly about this time, but focused instead on the rest of the story.

Cutting Point #1: Getting the Bad News

The stage of *living in innocence* ends abruptly with *getting the bad news*. *Getting the bad news* is a significant event and occurs when the parent learns that there is a major health issue. This cutting point may happen during pregnancy or after the birth of the baby. At this moment, the ideal of the perfect baby leaves and forces a new reality on the parent. Anticipation becomes anxiety, fear, guilt, and dread. Joy is replaced by sadness and grief. Dreams and plans are forever altered. All participants talked about *getting the bad news*.

Stage 2: Parenting in the New Reality

The stage of *parenting in the new reality* starts after *getting the bad news*. Living in innocence is forever gone. The parent is now left with the new and awful reality that the baby will die. The parent-to-be/new parent must deal with the unique challenges that follow the diagnosis of a life-limiting congenital anomaly in the fetus/baby. The stage may last for minutes, hours, days, or months but always ends with the second cutting point: *the death of the baby*. Three major processes occur within the stage of *parenting in the new reality*: s*eeking answers*, *squeezing a lifetime into a moment*, and *letting go*.

Seeking answers. The parent starts the process of *seeking answers* to address the issues raised by the bad news*.* Therefore*, seeking answers* is typically the first process that occurs in the second stage. This process is iterative and happens as long as the baby lives. *Seeking answers* has three properties: *maintaining hope*, *being separated from the baby*, and *making decisions*.

Seeking answers may mean trying to find out what is wrong and to save the baby. Transfer and admission to specialized units is another means of *seeking answers*. How to explain the situation to the siblings of the baby and help those children cope is another aspect of this process.

Referral to a high-risk perinatal or neonatal/pediatric specialist is an element of *seeking answers*. These specialists may be local or in locations far from home. The parent goes to the specialist seeking answers about what is wrong with the pregnancy and/or baby. Hope exists that the specialist can make everything all right. All participants received or sought referral to high-risk perinatal or neonatal/pediatric specialists.

Another means of *seeking answers* is transfer and admission to specialized units, high risk antepartum for the still pregnant woman, and neonatal/pediatric intensive care units (NICU/PICU) for the baby. The parent or baby may spend a great deal of time in these units which also may be far from home. Some babies spend the majority or all of their brief life in the NICU. All of the babies, except one, spent a portion of their brief lives in an intensive care unit.

The parent may have concerns about the siblings of the baby. *Seeking answers* may include questions on how and what to tell the baby's sibling(s) about the infant's condition. There may concerns about the logistics of who will take care of the siblings if the parent has to go far away for care. The parent may need assistance in trying to prepare the siblings for the baby's death. Many of the participants had other living children and wrestled with these issues.

A final means of *seeking answers* is finding how to best care for a dying baby. This type of *seeking answers* occurs once the fetus/baby has a diagnosis of a life-limiting anomaly and the parent experiences *letting go*. Options for end-of-life care for the baby may include staying in the NICU/PICU, in-patient or home hospice care, or on the regular mother-baby unit. Many of the participants received hospice care.

Maintaining hope is a property within *seeking answers*. The parent hopes that somehow that something can be done and that the baby will live. Some parents never gave up hoping for a miracle despite a grim prognosis. Others claim to know that the baby will not come home.

Being separated from the baby occurs after admission to a specialized unit and is a consequence of seeking answers. Distances, NICU unit policies, severity of the baby's illness, and/or health complications of the mother are sources of the separation. The separation is a source of stress. Participants talked about seeing the baby only briefly right after birth because the baby was quickly taken to the NICU for care.

Making decisions is the result of the knowledge gained from *seeking answers.* Parents must make many decisions over the course of the pregnancy and/or baby's short life. Some of these decisions are literally life and death ones. Decisions about elective termination or resuscitation efforts at delivery may be made during the pregnancy. Once the baby is born, decisions may include feeding the baby, withdrawal of curative care for comfort care, and staying in the hospital versus taking the baby home to die. One participant upon getting the diagnosis said "I told them to take her off the vent, bathe her, and bring her to me."

Squeezing a Lifetime into a Moment. *Squeezing a lifetime into a moment* is a vital process that occurs during the second stage. During this process, the parent literally

tries to squeeze a lifetime of being with the baby into whatever brief time the baby is alive. No matter the length of this period, there is never enough time. *Squeezing a lifetime into a moment* has three properties: k*eeping* vigil, *creating memories*, and *seeking normalcy*. These properties do not occur in any particular order and often occur simultaneously.

Keeping vigil is a hyper-vigilant state of being with the baby. The parent rarely, if ever, allows the baby out of sight and includes closely watching the baby breathe or holding the baby all the time. This differs from what an anxious new mom of a healthy baby exhibits. The anxious mom is still *living in innocence* and assumes there will be a lifetime with the baby. Whereas the parent in the process of *squeezing a lifetime into a moment* knows there is a future without the baby. The parent *keeping vigil* watches for any sign that there is improvement or worsening of the baby's condition. Reinforcement of *maintaining hope* occurs if the baby demonstrates any improvement or remains stable. Conversely, as the parent sees the baby's condition worsening, the process of *letting go* begins. Any changes seen during *keeping vigil* may require the parent to revisit *making decisions*. All participants talked about *keeping vigil*. Some participants talked about sitting at the baby's bedside in the NICU/PICU for hours, only leaving to get some sleep.

Creating memories is another property in *squeezing a lifetime into a moment*. Since the parent has an unknown and limited time with the baby, there is an urgent need for *creating memories* that will last a lifetime. Once the baby is gone, the parent will only have the memories. The parent who is *creating memories* does so by spending time with the baby. The baby's siblings, grandparents, other extended family and friends may also spend time with the baby. During this time, the parent may hold, dress, feed, and/or provide other types of care for the baby. Others may hold the baby, but not too long as the parent wants all the time possible with the baby. The creation of mementos is also a means of *creating memories.* Taking pictures, making a casting of the baby's hands or feet or putting hand or footprints on a card or other items are types of mementos. Items used or worn by the baby may also become mementos later. C*reating memories* was done by all participants. All participants showed the author at least one memento of the baby.

Seeking normalcy is the third property within *squeezing a lifetime into a moment.* As with the other two processes, this may occur anytime in the process of *squeezing a lifetime into a moment*. *Seeking normalcy* is the attempt by the parent to find or create a sense of order in an out-of-control situation. During s*eeking normalcy* the parent will look for familial physical traits and/or may overlook obvious outward signs of the baby's problems. S*eeking normalcy* may include creating an environment that is more home-like than the highly technical intensive care unit. The parent wants the time spent with the baby to be of good quality. To have this quality time, the parent may demand alone time with the baby in the unit. It is a challenge, even a contradiction of terms, for the parent to experience being alone with the baby in the NICU as there are always all types of health care personnel around. The structure of some units may preclude privacy. Many participants talked about being alone with the baby as cherished time, especially those in the hospital NICUs. Taking the baby home to die is another option for seeking normalcy. At home, the parent does not have to share the baby with the nursing and medical staff. Some participants brought the baby home to die. None of the participants who brought the baby home to die voiced regret over the decision.

Letting Go. *Letting go* may occur prenatally with the decision to forgo the initiation of resuscitation measures at birth or after birth with the withdrawal of heroic measures and the initiation of palliative or hospice care. The parent understands that it is futile to initiate or continue heroic medical intervention to save the baby's life. Instead of cure, the focus of care becomes the prevention or ease of suffering. Quality of life becomes primary**.**

Letting go may not occur just once. Rather, the parent may vacillate between *maintaining hope* and *letting go.* This vacillation may occur if the baby experiences a good hour, day, or week. The parent who vacillates looks for any little sign that the doctors are wrong. The less symptomatic and longer the baby lives, the more likely that this vacillation will occur.

During the process of *letting go* the parent is also *seeking answers* and *making decisions*. The parent seeks answers and makes decisions about how and where to best provide care for the baby who is actively dying or will soon die. Additionally, the process of *squeezing a lifetime into a moment* takes on a sense of urgency as the parent realizes that time left with the baby is very short.

Cutting Point Two: The Death of the Baby

The death of the baby is the second cutting point. The baby takes a final breath, a heart stops beating and death occurs. The stage of *parenting in the new reality* ends. Death is, at times, a paradoxical moment. The parent wants the baby to stay alive but also wants the suffering to stop. So, when death occurs, the parent experiences feelings of grief and sadness. However, the parent may also feel relief that the baby's suffering is over. All participants, except one couple, discussed being with the baby at the moment of death.

Stage 3: The Stage of Going On

The stage of *going on* begins with the death of the baby. *Going on* does not mean getting over the loss of the baby. Rather, *going on* involves doing what needs to be done to live life. The parent goes back to work, a marriage, and being a parent if applicable. However, life is forever changed.

The stage of *going on* has four processes. *Saying goodbye* is the first process that happens in the stage of *going on* and continues throughout the stage. The other three processes, s*eeking meaning in the baby's life, keeping mementos,* and *living life* occur iteratively after *saying goodbye*.

Saying goodbye. Parents react to the death of the baby and feel the loss. During this time the parents prepare for a physical separation from the baby. A first separation occurs when the baby goes to the morgue or to the funeral home. Leaving the hospital without the baby is a difficult experience for the parent. Participants whose baby died in the hospital talked about how hard it was to leave the hospital with empty arms. For those parents who cared for the dying baby at home, it was hard to surrender the baby to another such as the person from the funeral home. One participant stated, "I felt jealous, they were going to get to be the last people to hold her."

The burial or cremation of the baby's body is a final physical separation from the parent. The parent will not ever be able to hold the baby again. The funeral/memorial service is part of the final physical separation. This service may provide the parent with validation that the baby's life had meaning. The participants appreciated the presence at the service of family, friends, and the health care professionals who cared for the parent and/or baby. This presence seemed to validate that the baby was valued even though here for a short time.

Saying goodbye is a very sensory experience. The parent holds and touches the baby prior to the separations. Some participants dressed the baby in every outfit prior to that first separation. Others bathed, took pictures, and held the baby. One participant shared sniffing the baby from head to toe after death in order to remember the baby's smell.

Saying goodbye is a paradox. The parent goes through the motions of *saying goodbye*; however, the deceased baby never totally leaves. The baby lives forever in the parent's memories and heart. Additionally, parents hang on to and/or display items related to the baby such as pictures, blankets, and plaster footprints. These physical reminders are very present even if the baby is not.

Seeking meaning in the baby's life. During *seeking meaning in the baby's life,* the parent tries to make sense of the loss. The baby was here for a reason. The parents talk about the baby impacting others and making a difference in the world, even if here for a short while. Therefore, the baby's life had a purpose. This effort seems rooted in some faith in the order of the universe. Something good has to come out of something so awful. Properties of seeking meaning in the baby's life are *helping others* and *telling their story*.

Helping others is an element of *seeking meaning in the baby's life.* Through *helping others*, the parent ensures that the baby's life was not meaningless. This helping takes many forms. The parent may volunteer to serve as a personal contact should another person in the area deliver a baby either with the same condition or another one that is life-limiting. Making monetary contributions to hospitals, hospices, or to foundations specific to the disorder that took the baby's life is another means of *helping others*. Participants find found that *helping others* helps them to heal.

Keeping the baby's memory alive. *Keeping the baby's memory* alive is done by *telling their story* and *keeping mementos*. These two properties make the baby's life real. Remembering the baby is painful and joyful. Parents smiled and cried while telling their stories and sharing mementos. It was as if the parents were afraid that the baby will be forgotten and that all the pain was for nothing.

Telling their story occurs because the parent wants to share the story of their baby. The baby's life is validated if someone knows the baby's story. *Telling their story* brings pain and joy to the parent. Parents seem willing to experience the pain because the alternative is to forget, which is not possible. In telling the story the parent may resort to presenting elements of their experience in very clinical terms or reciting the facts. This method of sharing seems to protect the parent from painful feelings. Parents want to tell their story. However, factors exist that make sharing a challenging proposition. The death of a baby is,

at best, an uncomfortable subject. Well-meaning family and friends fear that talking about the baby will upset the bereaved parent. Family and friends listen to the story about the baby, but only for so long. The bereaved parent gets the message that others do not want to hear about the baby and feel silenced. Many participants discussed feeling silenced when wanting to talk about their dead baby. One participant who stated "I just love talking about N." also said "No one else wants to hear me talk about her anymore."

The other way to *keep the baby's memory alive* is through *keeping mementos*. The mementos took many forms with pictures of the deceased baby the most common keepsake. The parent may display the photo of the deceased baby in the family home. Family photos shot during *creating memories* may be part of a scrapbook. The scrapbook may also contain hand/foot prints of the baby or a lock of the baby's hair. Other mementos include clothing worn by the baby, blankets, a casting of the baby's hands and feet, hand crafted items made by family and friends, and even medical equipment such as the baby's blood pressure cuff. These mementos symbolize the reality of the baby's existence. *Keeping mementos,* like *saying goodbye,* is a sensory experience. If the parent touches, sees, or smells something that belonged to the baby, the baby existed. Those same mementos also reinforce the fact that the baby cannot use the items because he/she is no longer here. So, mementos are comforting and painful. All participants had something that belonged to the baby. Most participants proudly displayed pictures of the deceased baby along with pictures of the living children on the wall of their homes. A couple of participants reported opening a plastic bag which contained clothing worn by the deceased baby in order to smell the baby.

Living life. The death of a baby does not mean that life stops. Life will never be the same, but the parent must go on *living life*. Children, marriages, relationships, and other elements of life require the attention of the bereaved parent.

The bereaved parent may not want to get out of bed after the death of the baby. Feelings of sadness, guilt, and grief sap the energy of the parent. But the surviving children have needs that must be met. These needs are a powerful force that impels the bereaved parent to get out of bed each day. Several participants described not wanting to get out of bed after the baby died but said the needs of the living children were the impetus to do so.

The baby's illness and subsequent death is a significant stressor which impacts the parents' relationships. However, few of the participants talked about the relationship with the husband or significant other. One participant talked about the anger her husband felt and reminded him of the need to lean on each other. Most of the participants were still in the marriage into which the deceased baby was born.

The other relationships in the parent's life are impacted by the baby's life and death. Family and friends immediately gather to provide help and support to the parent undergoing the birth, brief life, and death of the baby. However, that help and support may have a time limit. New relationships also develop during this time especially if the parent becomes involved with other parents on the private sharing area of websites specific to the baby's condition.

Going back to work may also help the parent get out of bed in the morning. Work may serve to divert attention to something other than the loss. Some participants who worked professionally with children were able to continue their occupation while others had to change.

Part of living life is the decision to have another baby and may be a major risk for these parents. Even a miniscule likelihood of recurrence of the life-limiting anomaly is too much of a risk for some parents. Pregnancy is no longer assumed to result in the birth of a healthy baby. *Living in innocence* is forever lost for these parents. Having another baby for these parents is not replacing the deceased baby. Rather the new baby is a validation that life is good. Participants fell on both sides of this decision. One participant stated "J. brought laughter back into our home."

The death of a baby is a major negative life event. So, it is not surprising that a parent may require professional help to deal with the loss. Concerns about surviving children may also impel the parent to seek the input of a professional. Many participants discussed seeking such care.

Discussion

The new theory, *navigating infant death*, describes the experience of parents whose baby died of a life-limiting congenital anomaly. The theory emerged from the participants' stories. The theory contains three stages with process and properties and two cutting points.

Navigating denotes that the parent is finding a way through the challenging journey of expecting/delivering, caring for and grieving for a baby who died of a life-limiting congenital anomaly. This journey has no roadmap since many of these anomalies are relatively rare and infant death has become the exception rather than the rule in the United States. Navigating this journey never ends. Grief may wane but never goes away.

Limitations

The participants were a homogenous group. There were only 12 participants. However, saturation occurred by the sixth interview. All participants were female, except for one male. Only one participant did not live in same state. Therefore, it is important to research if the grounded theory reflects the experience of fathers of babies with life-limiting congenital anomalies and of parents who live in other locales.

The participants were volunteers willing to talk about their painful experience. The theory may just reflect the experience of parents willing to talk about their experience and not those who still cannot talk about their loss. It is unclear how to include those unwilling or unable to share, but that input could potentially modify the theory.

Many of the participants utilized some form of hospice care (n=7). This statistic is not consistent with the literature in which authors suggested that anywhere from 9-20% of dying infants receive adequate end-of-life care (Feudtner et al, 2002; Friebert & Huff, 2009; Leuthner, Boldt, & Kirby 2004; NHPCO, 2001; Widger,Seow, Rapoport, Chalifoux &

Tanuseputro, 2017; Zwerdling et al, 2000). In this study, more than half of the babies had hospice care. This high percentage reflects the author's participant recruiting source rather than a genuine increase in access to palliative and end-of-life care for babies. Therefore, it would be important in another study to recruit participants whose babies died without hospice care.

This study only included participants whose babies lived 48 hours to 15 months of age. Many of these babies only live a few hours after birth. Thus, it would be important to explore the experience of parents whose babies lived less than 48 hours to see if that experienced mirrored those who babies lived longer.

Comparison to Existing Literature

Research

Brosig, Pierucci, Kupst and Leuthner (2007) examined the parents' experience of the death of an infant with a life-threatening condition of the perinatal period or congenital anomalies. In the semi-structured interviews, bereaved parents identified coping strategies that included seeking support from family and/or a bereavement support groups, focusing on the surviving children, memorializing the dead infant in some manner, turning to God, and giving back. These strategies are similar to the processes and properties in the stage of *going on*.

"Having expectations, continuity of, memory making, having a network of support and altruism" (Tan, Docherty, Barfield & Brandon, 2012, p. 582) were the categories in a content analysis of interviews with bereaved parents of infants who died of complex life-threatening conditions. Memory making and altruism are similar to *creating memories* and *seeking meaning in the baby's life*. Themes within having expectation find congruence in *making decisions*.

Lathrop and VandeVusse (2011) interviewed bereaved mothers who had continued a pregnancy after diagnosis of a lethal fetal anomaly. Themes arose after narrative analysis of the interviews. Continuity, the first theme, refers to the feelings and thoughts still present despite the passage of time such feeling of love and connection for the baby, the pain of loss, and a sense of the baby's ongoing presence in their lives (Lathrop & VandeVusse, 2011). This theme is congruent with many of the processes in *going on*. Another theme, transient phases, characterized transient periods of time when certain feelings or events were predominant, such as at time of diagnosis and the baby's death (Lathrop & VandeVusse, 2011). This theme correlated with the two cutting points.

Theories

Negotiating infant death will briefly be compared to theories from death and dying, grief and bereavement, and parenting. "Awareness of Dying" (Glaser & Strauss, 1965) has limited applicability to this new theory. Open awareness is congruent during and between the two cutting points. The practice of family-centered care where the family is the patient, not just the infant, makes open awareness applicable.

In "Time for Dying," Glaser and Strauss (1968) described perceived trajectories of dying with two properties: time and shape. The new theory is relevant to "Time for Dying" in many ways. The dying trajectories of neonates/infants with life-limiting congenital anomalies vary, so time is critical during *squeezing a lifetime into a moment*. Shape is also a critical element. A rapid decline severely decreases the time in parenting in the new reality; a more insidious course allows for more time. Death expectations exemplify the characteristics of many congenital anomalies that are incompatible with life and have a certain death at a known time. The death expectation impacts on all aspects of *parenting in the new reality*.

The theory of grieving by Parkes (1998) consists of four phases: numbness, pining, disorganization and despair, and reorganization. Parkes (1998) suggested that grieving included the conflicting urges to look back and look forward during the last two phases of grieving. This idea correlates with *saying goodbye/keeping the baby's memory alive* and *living life* in the stage of *going on.* Some aspects of Parkes' reorganization phase bear resemblance to the process of *living life.* The iterative nature of the phases of Parkes theory of grieving is similar to the iterative nature for the processes within the stage of *going on.*

According to Worden (2002), the bereaved have four tasks to complete in a sequential manner. The tasks are (a) accept the reality of the loss, (b) work through and experience the pain of grief, (c) adjust to an environment without the deceased person, and (d) withdraw emotionally from or relocate the deceased and move on. All the tasks are consistent with processes that occur in the stage of *going on*. However, the sequential nature of the tasks differs from the iterative nature of the processes in *going on*.

The constructivist grounded theory of safeguarding precarious survival, parenting children who have life-threatening heart disease, has limited congruence. There are some processes in *navigating infant death* that are similar to strategies discussed by Rempel and Harrison (2007) but other are not. These researchers talked to couples whose baby was still alive, so it is not surprising that the theory has limited applicability.

Implications

Practice

Negotiating infant death has relevance for nurses and other health care professionals in many sites of practice, with NICU and PICU being the most obvious choices. The theory could be utilized as a conceptual framework for practice in the primary or acute care setting when caring for the pregnant patient carrying a fetus with a life-limiting congenital anomaly or a baby diagnosed with a life-limiting congenital anomaly. Since most infants still die in the NICU, most of the discussion focuses on the implications for practice in the NICU. However, many of the principles guiding care for the dying infant in those units can be extrapolated for use in the other settings in which these infants die.

The theory of *negotiating infant death* provides evidence for many of the interventions suggested in the papers, position statements, and protocols about palliative/end-of-life care for an infant. According to Kendall and Guo (2008), most bereavement care that occurs in NICU's has been an "intuitive response to a perceived

need" (p. 131). This author would argue that this statement is true for many of the palliative/end-of-life protocols/documents.

These protocols address issues under the general categories of communication, environment, parental activities, bereavement, withdrawal of life support, pain and symptom control, and prolonged dying process (Carter & Bhatia, 2001; Catlin & Carter, 2002; De Lisle-Porter & Podruchny, 2009; Gale & Brooks, 2006; NANN, 2015). The first four aspects primarily pertain to the parents and find support in this new theory. Honest and sensitive communication with the parents is vital throughout all the stages and cutting points. Most of the protocols addressed the need for creation of an optimal environment for the infant's death. Environment does not just refer to location of care but also the creation of a milieu which meets the parents' needs. The importance of parental activities is supported as parents *create memories* while the baby is alive and *keep the baby's memory alive* after the baby's death. Bereavement care should start *at getting the bad news* and continue on throughout the rest of the stages.

Research

There is a great need for more research related to infants with life-limiting congenital anomalies and their families as evidenced by the dearth of published research. Some suggestions for additional research were already discussed in the limitations. There is some published research in which the authors focused on the bereavement process that occurs after the cutting point of the *death of the baby* in the stage of *going on*. However, as discussed earlier, much of that research lumps all types of perinatal loss together. More research is needed about what helps a parent of baby with a life-limiting congenital anomaly with *going on* after the expected death of a baby.

Researchers need to explore what is happening between the cutting points of *getting the bad news* and *the death of the baby*. More information is needed about the support and care needed by parents from the first breaking point of *getting the bad news* through the stage of *parenting in the new reality*. A great knowledge gap exists between these two periods of time. Research about the process of *seeking answers* could explore models of care that meet the parent's needs and prevent separation. Decision making in ventilator withdrawal in infants has been researched in which infants with life-limiting conditions as well as those born prematurely were discussed. Other aspects of *making decisions* such as those made prenatally about resuscitation or post-delivery about staying in the hospital versus taking the baby home to die are important areas to explore. Related to making decisions would be research on how to support the parent in *letting go*. Perinatal hospice as a model of care from *getting the bad news* through *going on* also needs researched.

Conclusion

Negotiating infant death from congenital anomaly is a new grounded theory that illuminates the experience of parents whose baby died of a life-limiting congenital anomaly. These parents' voices have been missing in the literature on infant loss. Thus, this theory fills a gap in knowledge. The theory provides a conceptual framework to support some interventions already done such as the creation of mementos. However, there is much to

do to ensure that babies dying from life-limiting congenital anomalies have optimal palliative/end-of-life care. It is this author's hope that *negotiating infant death from life-limiting congenital anomaly* will serve as a starting place.

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Negotiating Emotional Order: A Grounded Theory of Breast Cancer Survivors

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Abstract

In this article, classic grounded theory captures the processes of 12 women who had completed initial treatment for breast cancer. The qualitative data analysis reveals the basic social process of negotiating emotional order that describe how breast cancer survivors perceive their illness and decide to take action. From the data, five stages of the process of negotiating emotional order emerge: 1) Losing Life Order, 2) Assisted Life Order, 3) Transforming 4) Accepting, and 5) Creating Emotional Order. This study may help healthcare providers who care for breast cancer survivors understand the depth of perpetual emotional impact that breast cancer survivors endure. This study will potentially serve as a path for future research and aid in the understanding of the psychological impact that breast cancer has upon survivors.

Keywords: breast cancer, survivor, chemotherapy, emotional order

What Sparked This Research

I cared for a patient who I had gotten to know as her child often visited the emergency department due to hemophilia. She was a pleasure to work with, strong, level headed, and upbeat. On this particular day she was the patient. Her complaint was simple: a cough and she clearly wasn't herself emotionally. I was surprised to discover, when I took her past medical history, that she was a breast cancer survivor. After I discussed her chest x-ray results I sensed she was still upset and filled with uncertainty. Then the lightbulb went on. I asked her directly if she was concerned if the cancer was recurring. She said yes and her tears flowed. I do believe if I had not dug a little deeper into her emotional state she would have left the emergency department with much of the same emotional duress that she initially had. This interaction sparked my research as it was clear that breast cancer survivors endure a process after treatment ends. For these survivors the treatment is over but the emotional aspect of breast cancer is not. It also became evident to me that health care providers need to know more about this process on order to be able to treat patients holistically.

Negotiating Emotional Order: A Grounded Theory of Breast Cancer Survivors

Breast cancer is the most prevalent cancer found in women worldwide (American Cancer Society [ACS], 2016; Ferlay et al., 2104). In the United States, it is estimated that 3.5 million women have been diagnosed with breast cancer; 245,000 will be newly

diagnosed; and, approximately 40,000 women will succumb to breast cancer annually (ACS, 2016; Breastcancer.org, 2016). Early detection and improved treatment is credited to the rising population of women who are breast cancer survivors (Howlader et al., 2015; McCloskey, Lee, & Steinburg, 2011). Concerns about the psychosocial ramifications of chronic illness have a long history. The Institute of Medicine (2009), American Cancer Society (2015), and the American Society of Clinical Oncology (2015) resonate concern about psychosocial hindrances regarding cancer patients, citing them as a critical area needing improvement within the nation's health care system.

The literature suggests breast cancer survivors endure psychological stressors after the completion of treatment including the following: loneliness (Marroquin, Czamanski-Cohen, Weihs, & Stanton, 2016; Rosedale, 2009), anxiety and depression (Walker, Szanton, & Wenzel, 2015), uncertainty (Dawson, Madsen, & Dains, 2016; Mishel et al., 2005), and fear of recurrence (McGinty, Small, Laronga, & Jacobsen, 2016). The phenomenon of breast cancer survivorship has been identified with qualitative methods, yet is lacking explanatory theory (Allen, Savadatti & Levy, 2009; Pelusi, 1997). Qualitative analysis uses inductive rather than deductive investigation of a clinical phenomenon for capturing themes and patterns within subjective perceptions to generate an interpretive account to inform clinical understanding. Inductive methods are used by the researchers to discover and generate theory (Artinian, Giske, & Cone, 2009; Glaser, 2008). Therefore, grounded theory was chosen to study the process of survivorship in women who have completed treatment for breast cancer.

Method

A Glaserian grounded theory design was chosen to explore the process of transition survivorship in women who have completed treatment for breast cancer. Grounded theory allows the researcher to explore a phenomenon and build theory from concepts going through processes and transitions (Glaser & Strauss, 1967; Glaser, 2008). The ACS defines *cancer survivor* as "anyone with a history of cancer, from the time of diagnosis through the remainder of their life" (ACS, 2016, p. 3). This definition was used for inclusion criteria for this project. Prior to commencement of the research, approval from the university's institutional review board was secured. A purposive sample was sought and participants were self-identified breast cancer survivors in a suburban community in Northeast United States. A presentation was made at a local breast cancer survivorship group. Flyers were posted in community centers, libraries, and public places including areas that reach numerous individuals. Based on these recruitment efforts, 12 women were interviewed during a four-month period.

Data Collection

All participants received written and verbal information about the study and gave informed consent. Data were collected by completing the following: a demographic data form, approximately one-hour individual in-depth interviews, observational notes, and field

notes. All of the data was handled in a confidential manner. Each interview session lasted approximately one hour in length. Broad open-ended questions were used to stimulate discussion of thoughts and feelings about extended survivorship. Focused questions and prompts were used to elicit more specific information from participants about their actions to attain and maintain psychosocial health after the completion of breast cancer treatment. The focus questions also elicited information about processes used to modify and maneuver through adversities after completion of treatment. Each participant was asked to describe situations when she knew something had changed in her health and psychosocial status after the completion of treatment for breast cancer. Participants were asked to answer the questions until they felt they had no information to add to the topic.

Data Analysis

Data analysis took a Glaserian approach in which data collection, analysis, and memoing were ongoing and concurrent throughout the research. Each interview was digitally taped and transcribed. Atlas ti software was used as a depository to code, store, and memo during analysis. Data was coded line by line to fracture the data into nouns formed from a verb or gerund. The interviews were re-coded on three different occasions. After the initial interview was coded, the second interview was coded in a similar fashion and the data were examined for common constructs that were clustered. Subsequent interviews were open-coded and compared with ideas and relationships described in the researcher's memos. As the categories unfolded, some categories were re-coded or combined with other categories. At the conclusion of the last interview, all codes were sorted to certify fit. Once a core variable or category was identified, coding became selective. The researcher continued the interviews and coding until saturation of the core variable was achieved. On saturation, theoretical coding was used to intersect categories within the data. Exploration of the literature for substantive codes that were significant was conducted each day. Extensive memo taking was used via manual notes and also as freehand drawn visuals created by the researcher to capture the researcher's mind set.

Trustworthiness

For the purpose of this paper, a conglomerate of trustworthiness criteria grounded from the recommendations of Glaser (1978, 1998, 2001) was employed. The researcher who conducted this study had scant exposure to extended breast cancer survivors in her personal and professional realm. Techniques to establish credibility included prolonged engagement and peer debriefing. Theoretical sampling and constant comparison took place when data, analytic categories, interpretations, and conclusions were discussed and tested with study participants throughout the interview process. Prolonged engagement developed rapport and participant trust. To address transferability, the following groups of data was included in an audit trail: 1) raw data, 2) data reduction and analysis notes, data reconstruction and synthesis products, 3) process notes, 4) materials related to intentions and dispositions, and 5) preliminary development information. The researcher kept a reflexive journal to record methodological decisions and the rationale for the decisions, the planning and management of the study, and reflection upon the researcher's own principles, feelings, and interests. Lastly, external audits were conducted by several researchers not involved with the research process on several occasions.

The Theory of Negotiating Emotional Order

The main concern of the women is the struggle for emotional order. The meaning inherent in the basic social process of Negotiating Emotional Order is that women who have been diagnosed with breast cancer strive for emotional order by negotiating control of the negative feeling of threats to their mortality and to live their daily lives. The process described in the theory of Negotiating Emotional Order changes as the situation of the breast cancer survivors' changes. As time passes, the women move from discovering an abnormality to a time after treatment ends. This process is dynamic and perpetual in nature because the threat of cancer recurrence remains until the end of the breast cancer survivor's life. For some women, negotiating emotional order is achieved even when the cancer recurs or metastasizes.

The participants' actions and decisions illuminate the perpetual struggle to negotiate emotional order. For some, order is compartmentalizing negative thoughts and emotions that they could not control. For others, they accept the fact that they cannot control cancer but project order onto other aspects of their lives. The struggle for emotional order is present from the time the survivor found the abnormality into long-term survivorship and at times is cyclic. Five stages of the process of negotiating emotional order emerges from the data: 1) Losing Life Order, 2) Assisted Life Order, 3) Transforming, 4) Accepting, and 5) Creating Emotional Order.

Losing Life Order

During this time period, the realization of the threat of breast cancer disrupts emotional order with intense fear and uncertainty of the future. The breast cancer survivor often makes decisions and acts on her instincts to placate the immediacy that she feels prior to starting treatment, often seeks information from the Internet, popular literature, media and from others who have experienced breast cancer. Unfortunately, their need for immediacy is often not met by the health care community, so they take matters into their own hands and act.

Many of the participants voice that this time period is difficult, as they have multifaceted family roles as wives, mothers, and children of parents of their own causing additional emotional turmoil. The participants continue or attemp to continue with their family roles by working, caring for children, and maintaining their households. The breast cancer survivors voice that they don't have time to let cancer get in the way emotionally as they are too busy with family and work responsibilities. The participants speak of emotional duress when they see their families react to their illness and chose to protect their families by concealing their emotions. One participant talked about why she concealed her emotions: "The emotional impact it had on my family was horrible . . . I felt like I had to be strong for them . . . I would not show any emotions about being sick."

Losing order encompasses two properties of disorder: losing emotional order and losing physical order. Upon discovering an abnormality, and then confirming breast cancer, the breast cancer survivors report loss of control of their bodies, which causes emotional

duress. This stage marked the survivors' first sense that cancer cannot be controlled. Loss of emotional order is represented by feelings of sadness, anger, immediacy, loneliness, fear, and uncertainty. This stage is hallmarked by emotional chaos and decision making. Approaches the women use in this stage are: taking matters into own hands and concealing to maintain family order.

Assisted Life Order

Surprisingly, although treatment is a physically draining endeavor, the breast cancer survivors voice that it is a time of respite when they focus on physical well-being rather than the emotional disruption that is occurring. During this phase, the women are often consumed with treatments of surgery, chemotherapy, and/ or radiation. The participants state they feel proactive and protected while under the frequent care of health care providers. This participant's narrative exemplifies the feeling of being assisted emotionally and physically by health care providers: "While you're getting chemotherapy, you think you're doing something to kill off any additional cancer that the surgery didn't get. You have certain protection."

The breast cancer survivors verbalize feeling lonely, despite having much social and family support, and purposely seek out other women who endured breast cancer for emotional support. Breast cancer survivors seek emotional support from formal and informal support persons. The participants also discuss a phenomenon where other breast cancer survivors would approach them after hearing about their diagnosis and come to their assistance to provide support. The importance of this camaraderie is evident in this narrative: "I didn't know people that have been through this…people came out of the woodwork. People that I had known that I didn't know that had cancer who shared their stories with me." Some of the breast cancer survivors express the need to have a connection with someone who has experienced breast cancer. Some women seek formal support groups for this need and continue to use them after treatment is completed.

The second stage of negotiating emotional order is assisted life order that occurs when the breast cancer survivor enters treatment and focuses all of her energy into physical well-being. At the same time, survivors entrust their life order into the hands of health care providers and rely on social support to carry them through the time that they are in treatment. During this time, the breast cancer survivor keeps physically and emotionally occupied with the routine of appointments and treatment. During this time, the women feel treatment is a sanctuary and they express that during this time they feel lonely in their current experience. During the second period, they engage with others with formal training or personal experience with breast cancer to establish emotional order.

Transforming

At this stage of the process, the breast cancer survivors report a cutting point or a crossroads and make a change in thought process. They are autonomously responsible for their physical and emotional well-being. This autonomy is a sharp contrast to their behavior while in treatment, where they live day to day and do not think about the future. Once treatments end, survivors must take the wheel and navigate into their life and the future. It does appear that this cutting point is an emotionally charged timeframe: the temporary

sanctuary of treatment ends and many survivors feel the need to take subjective responsibility of their emotional order. The survivors speak about the need to reach inward to claim emotional order to live their lives beyond breast cancer.

During this stage, the threat changes from the fear of the diagnosis of cancer to the fear of cancer. The fear of cancer can be recurrence of breast cancer, occurrence of a new cancer, and/or cancer metastasis. The process of beginning to move on from the emotional effects of the diagnosis of breast cancer begins shortly after the end of treatment. Fear is initially intense then becomes manageable over time for many. Several women note the recurrent fear abates somewhat after the first year and even more after five years. The fear of recurrence also can return many years after the completion of treatment. This dread is especially true if the breast cancer survivor discovers new symptoms or abnormalities that lead her to believe the cancer has returned. Often waiting for the results of diagnostics causes extreme anxiety and fear of recurrence.

The interviewed participants ranged from three months to twenty-four years post treatment. Despite the variation of time since the ending of treatment, all of the participants discussed levels of fear of recurrence. Often, the fear of recurrence affects their daily lives initially until they set cancer apart from living their present life. Several of the participants state it is not so much an inherent process rather an active decision to take control of their feelings of fear and move onward. In this stage, the turning point is the active decision to leave breast cancer in the past and focus on the present and future. Another participant, who is thirteen years post treatment, discussed this decision: "I told myself, I have to make a move here. You can curl up in a ball and die or I can move on. I started moving on."

When the breast cancer survivors leave treatment, they are at a crossroad in which feelings of loss and confusion are produced. After adjuvant treatment ends, the breast cancer survivors must remap their lives and begin to strive for a new normalcy in their lives. The threat at this stage changes from the diagnosis of cancer and is replaced with the fear of recurrence. The breast cancer survivors often revisit their own mortality during this time and these feelings can cause loss of emotional order. During this time the breast cancer survivor transforms, remapping their life course and also moving on from fear.

Accepting

Uncertainty of the future also causes emotional distress for breast cancer survivors. The reality that none can control their own mortality or cancer, is an aspect of the emotional trajectory that the breast cancer survivors struggle with initially. Once breast cancer survivors make this realization, they can then subjectively gain order of their emotions. This action is autonomous as no one else but the breast cancer survivor can complete this task. One participant spoke about this decision: "There are things that I can change and there are things that I am powerless over. It's distinguishing and I do have control over what I'm thinking."

Although the breast cancer survivor attempts to control her emotions, she often will come to the realization that she can keep her emotions in order rather than control them so that she can move on in her life and get serenity with the past diagnosis of breast cancer. Several of the participants state the turning point occurs when they realize they cannot

control cancer or their feelings, and thus accept order versus control. As the threat of recurrence is no longer an issue, they accept their mortality and are living in the present day. A participant reflection on this concept: "We'll all go some day. It's just my time might come sooner than expected. A part of life."

Feelings of emotional loss of control can be triggered by reminders after treatment ends. Reminders include physical reminders, body image reminders, diagnostics, and society cancer awareness. Although gaining realization of their own mortality, living with reminders forces the breast cancer survivors to cope on a daily basis with the fear of recurrence as they are reminded by physical and cognitive aftermath of breast cancer. Additionally, diagnostics and health care visits can elicit feelings of fear. Breast cancer survivors also voice that breast cancer or cancer awareness activities in the community and media also trigger feelings of fear. The impact of reminders is showcased by one participant's remarks: "I worry about it all the time. Every ache and pain I have. When my bones hurt I wonder if it is bone cancer. Every time I have to have a mammogram, I pray it's not there."

Creating Emotional Order

Inherently, human beings have emotions. One of these emotions is fear in response to a threat. As the threat of cancer recurrence has a perpetual quality in women who have been diagnosed with breast cancer, the emotional aspect of cancer recurrence is long-standing. Since she cannot fully control her emotions, the breast cancer survivor will compartmentalize negative feelings of uncertainty and fear to achieve emotional order. To protect themselves emotionally, several of the participants speak about triaging these emotions to the back of their heads and putting these feelings away. One participant illustrates this behavior: "It's probably because I pushed it to the back of my head because I don't want to deal with those emotions."

Once the breast cancer survivor accepts the fact that there are aspects of her life she can control and there are aspects over which she has no power, she will begin to create emotional order. Having control over actions and or parts of her life allows the breast cancer survivor to have emotional order. During times of emotional distress, they also increase their attempts to distract themselves from their emotions. This increase in activity temporarily increase with times of stress. Often, after the breast cancer survivor feels well, she redefines the actions in which she participates. Survivors express themselves by participating in activities that they enjoy or want to experience but did not have the courage to do so prior to diagnosis. Breast cancer survivors also talk about controlling their family roles and home environment. The breast cancer survivor might demonstrate control by creating a household routine or enumerating familial activities. Distracting self with other aspects of life also is a way that breast cancer survivors create emotional order. By immersing themselves back into their daily routines of work, marital, household, and family roles, survivors limit the amount of time they have available to think about the fear of recurrence, which is similar to using activity to occupy time during the assisted life order stage.

Social comparison through self-evaluations is another way that these participants achieve emotional order. Breast cancer survivors use social comparison as a method to create emotional order by viewing their experience as better than others who experienced poor outcomes. As a defense mechanism, if the breast cancer survivor views her experience as positive then she reaffirms she is a survivor. Social comparison is evident almost unanimously in the data. Participants speak often of reflecting on the experience they endured and feel lucky. While exploring this code the researcher asked the participants what they meant by luck or being lucky. Consistently the participants talk about luck as comparing outcomes as better or worse. For example, when asked what she meant by having better luck, a participant replied: "Well I was thinking someone maybe had the same surgery as me, did better than me." Here is an example of a breast cancer survivor socially comparing her experience as worse than another person's experience.

In addition to evaluating the actual treatment outcomes and evaluating the way that they physically dealt with treatment, the breast cancer survivors also evaluate the entire experience of breast cancer by reflection. The ability to reflect onto the past experience to find benefits and assign positive outcomes related to the cancer allow the survivor to make sense of the experience and create emotional order. In many ways, the survivors feel everything that they endured was worth what they became. Many reflect back and feel they gained knowledge of self-meaning knowing their bodies and emotions and realized they have abilities to endure adversity that they did not know before the experience of breast cancer. The breast cancer survivors reflect back in awe of the emotional stamina that they had during adversity and were proud of their accomplishments. One participant states: "It is amazing. Yeah if someone had told me I could write a book, become a massage therapist and learn the body the way I have. I would have said no way."

"I feel like I know these people. You have been through what they have been through." This participant's narrative sums up the transparent common bond the participants feel with other cancer survivors. To create emotional order, the breast cancer survivors help others as a way to help themselves emotionally. Planned helpfulness allows the breast cancer survivor to create emotional order by gaining satisfaction through assisting others. Often breast cancer survivors employ ambiguousness until they are ready to disclose their survivorship status. This opacity allows them to experience empowerment and also allows them life choices–a common theme throughout the interviews. Breast cancer survivors plan and decide how they would help others; many are grateful for the acquaintance disclosure and guidance they receive early in their disease trajectory and want to pay forward some type of comfort to others who are enduring cancer.

Once survivors accept the fact that they cannot control their mortality and cancer, the breast cancer survivor creates social order to protect herself emotionally. Breast cancer survivors are acutely aware that their actions do not guarantee that cancer will not return, but in this stage they want to maintain a status of being physically and emotionally healthy. One participant communicates: "What work do I need to do. I am a survivor and want to be a survivor for a long time." Although reminders often trigger fear, the survivors often use methods to create emotional order, to find balance and not allow feelings of fear to overcome them. Breast cancer survivors protect themselves by controlling their actions,

compartmentalizing negative feelings, using social comparison and/or engaging in planned helpfulness.

Creating Emotional Order allows breast cancer survivors to transcend the fear of recurrence by controlling their actions, compartmentalizing negative feelings, and using social comparison and planned helpfulness. Although they cannot control their emotions or control cancer, they can control the way they react to emotions and take control of their life actions. Many of the participants shelve their negative emotions in order not to let the psychological aspect of breast cancer interfere in their daily lives. The participants show evidence that the survivors can regress between stages of this theory, but after their initial passage through the stages progress forward quickly and resiliently.

Limitations

There are several limitations in this research. First, the researcher attempted to recruit a variety of participants from diverse social and demographic backgrounds through flyers posted in public places. Despite this attempt to obtain a diverse population, all the participants are White and hold high school education or equivalency and most of the sample had three or more years of college education. Most of the participants are married or partnered. Economic and insurance status information is not included in the demographic data. Expanding the demographic sample might have allowed modifiability of the theory to explore additional relationships between these variables and the process of survivorship.

Finally, grounded theory analyses are population specific. This research represents the primary step in theory development. The aim of grounded theory construction is to hone and develop a theory in the attempt to produce formal theory. Testing the applicability of this theory may be appropriate in other populations who face severe illnesses, for example individuals as they face the aging process, individuals who are facing a terminal illness, veterans returning from war diagnosed with post-traumatic stress disorder, men facing prostate cancer, and/or women facing infertility.

Discussion

The aim of this study is to contribute to the knowledge of breast cancer survivorship. This research contributes to the literature as a lack of holistic research exists on the process of extended survivorship that involve the fragments of the process of survivorship. Breast cancer is a significant and prominent healthcare challenge for many women in the United States. Negotiating emotional order is identified as the core category allowing women to survive emotionally after completing treatment for breast cancer. Five stages were identified including the following: Losing Life Order, Assisted Life Order, Transforming, Accepting, and Creating Emotional Order. The grounded theory of negotiating order integrates and highlights the importance of recognizing emotional health in breast cancer survivors.

This research challenges a staple in cancer survivorship literature that is reported by Mullan (1985) in several ways. First, in the current study, breast cancer survivors described

the process of survivorship beginning before diagnosis with the discovery of an abnormality. This variation in the genesis of process of survivorship is different from Mullan's (1985) model in which the process of survivorship is said to begin with diagnosis. Second, a new stage that represented transitional survivorship or Stage III: Transforming is described in the current study as the period immediately following the completion of treatment. Third, Mullan (1985) described extended survivorship as ending once the survivor enters remission. Although most breast cancer survivors interviewed for this study entered remission, several experienced recurrences or metastatic breast cancer so Mullan's model excluded the process that these individuals endured.

Lastly, in this study extended survivorship appeared to be a continuous state rather than a conduit to permanent survivorship as Mullan (1985) described in his model. Mullan (1985) stated permanent cancer survivorship begins once the person is considered cancer free and can successfully return to their normal physical and emotional abilities prior to the cancer diagnosis. The survivors in this study describe extended survivorship to have a perpetual nature rather than being permanently cured physically or emotionally. They also challenge the fact they would return to "normal." One of the participants states, "It was a rough road. Trying to figure out who I was, where I belong. Because they say your life goes back to normal, there is no normalcy. I don't feel I am normal today." This idea is significant as many breast cancer survivors may feel the need to feel "normal" due to the extensive publication of Mullan's (1985) model. The use of Mullan's (1985) model by many credible cancer authorities may prove to be confusing and frustrating to breast cancer survivors who lack the feeling of normalcy after treatment is completed and into extended survivorship.

The theory of Negotiating Emotional Order supports several existing theories that describe how individuals handle severe illnesses beyond cancer. This work complements several authors who described survivorship beyond the biomedical model that psychosocial and environmental factors influence (Collins, 1995; Festinger, 1954; Folkman & Greer, 2000; Taylor, 1983; Walker, Jackson, & Littlejohn, 2004).

The construct of control can be found in the literature in multiple patient populations including breast cancer (Warren, 2010), cardiac disease (Svansdotti et al., 2012), patients with obsessive compulsive disorder (Kang, Namkoong, Yoo, Jhung, & Kim, 2012), diabetes (Hughes, Berg, & Wiebe, 2012), and sexual assault (Frazier, Morlensen, & Steward, 2005). In this study, loss of emotional control is important, as it serves as a catalyst shaping the decisions and actions of the participants. Additionally, controlling actions were used later by the participants as a means to cope, thus creating emotional order. This theme is analogous with Folkman's (1984) description of control as dynamic coping mechanism with shifting appraisal as result of a stressful encounter or environment.

Benefit finding and planned helpfulness that are reported are consistent with Taylor's (1983) proposed theory of cognitive adaptation in response to threatening events as both are displays of a search for meaning in the experience and attempts of mastery to restore self-esteem. It may also be noted that Taylor (1983) linked an individual's sense of control to positive cognitive adaptation. Lastly, social comparison is evident in this group. This observation echoes Festinger's (1954) work hypothesizing that social comparison is done to

promote self-normalcy. Social comparison in this population is a mechanism to negotiate emotional order by improving the survivors' positive perception of their situation and is consistent with the work Collins (1995) reported.

Implications for Practice

This research affords a glimpse into the experience of survivorship from the perspective of women who have completed treatment for breast cancer and how they survived emotionally from the detection of an abnormality into extended survivorship. This work aids in the development of a broad understanding of the processes that individuals endure when faced with a serious health status alteration. This information might aid health care providers to understand the immediacy that breast cancer survivors experience during the disease trajectory and the concept that the fear of recurrence can last perpetually and be an issue that is important to survivors until the end of their lives.

A lesson that can be taken away from this work is that women are continuously attempting to create emotional order and this clearly indicates they need support to continue well after treatment ends. In terms of theory, the identification of the process used by breast cancer survivors to negotiate emotional order may be helpful for health care providers who care for, educate, and design nursing interventions for this population. This study of survivorship after breast cancer establishes the beginning process of generating a formal grounded theory on survivorship that could, through further theoretical sampling, be extended beyond this patient population. Building on existing theory, this qualitative data analysis may help explain the mechanisms used by populations who have experienced a life-threatening illness personally or while supporting a loved one.

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The author declares no potential conflicts of interest with respect to the research, authorship and/or publication of this article.

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Developing Mind Body Hunger Mastery

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Abstract

This quest to explore hunger using classic grounded theory was sparked within a dietitian who was hungry for a deeper understanding of her patients. The high rates of overweight and obesity in the United States are alarming and the mind body link with hunger is a rich area for study. The grand tour question for this classic grounded theory study was "can you tell me about your experience with hunger?" The resulting theory touches on some of the fastest growing fields of study in the United States: overweight and obesity, mind body medicine, and personal development. The substantive theory of developing mind body hunger mastery depicts two types of hunger, physical hunger and abstract hunger, each requiring separate nourishment processes. Nourishment can be interrupted at the physical and the abstract levels, leading to hunger confusion and hunger suffering. It may be possible to escape this maze through self-awareness and development of mind body hunger mastery.

Keywords: Mind, Body, Overweight, Obesity, Personal development, nourishment, hunger suffering

Introduction

Eating for pleasure (hedonic eating) is shown to be associated with overeating and loss of control over eating (Stroebe, Papeis, & Aarts, 2008; Witt & Lowe, 2014), which is influenced by emotional eating (Heatherton & Baumeister, 1991; Hernandez-Hons & Woolley, 2012). Emotional eating is strongly correlated with psychological distress, such as depression, anxiety, anger, and loneliness (Ganley, 1989; Geliebter & Aversa, 2003; Pidgeon, Lacota, & Champion, 2012). There are many perspectives that aim to explain emotional eating. From a brain science perspective, obese individuals may experience food as more rewarding than normal weight individuals due to decreased dopamine activity (Nathan et al., 2012; Volkow et al., 2003).

Considering emotional regulation as a key to understanding emotional eating, eating in response to emotional cues is shown to be associated with a lack of emotional awareness (Moon & Berenbaum, 2009; Pidgeon et al., 2012; Salovey et al., 1995). In fact, the desire to escape emotional awareness is a plausible theory to explain the cause of emotional eating (Blackburn et al., 2006; Heatherton & Baumeister, 1991; Polivy & Herman, 1999). The sensitivity to perceive, understand, and respond to interoceptive signals plays a central

role in emotional regulation (Pollatos & Schandry, 2008; Nentjes, Meijer, Bernstein, Arntz, & Medendorp, 2013), and interoceptive awareness has been shown to mediate the relationship between self-objectification and disordered eating (Frederickson & Roberts, 1997; Myers & Crowther, 2008).

Theory Development

This classic grounded theory study was performed as a doctoral dissertation study by a Registered Dietitian studying Mind Body Medicine at Saybrook University, College of Integrative Medicine and Health Sciences. The topic area of interest for this research included emotional eating; however, utilizing the terms "emotional eating" and "emotional hunger" may have contradicted the no-preconception rule of CGT, as these fundamental preconceived ideas and widely researched topics may have shaped and limited the data collection, and emergent variables during participant interviews. Therefore, a broader grand tour question was used to cast a wide net and allow all relevant data to emerge: "Can you tell me about your relationship with hunger?" Adult participants included those who struggled in their relationships with hunger, with theoretical sampling leading to additional interviews with those who did not struggle with hunger at any level. A total of nine interviews lasting 45-120 minutes were audio recorded, transcribed (as required by the university), and coded as data. Two additional publicly accessible interviews and relevant literature were also coded as data.

Data analysis, using substantive coding (open and selective coding), constant comparative analysis, and memoing, began with the first piece of data collected. Data were coded line by line identifying theoretical concepts in the data. Concepts were compared to each other using constant comparative analysis and theoretical ideas about concepts and relationships among the concepts were recorded in the form of memos. A total of 321 unique codes and nearly 500 memos emerged from the data.

During open coding, the questions "what are the participants working on?" and "what is this data a study of?" were continuously asked until the core variable, which is the variable that accounts for the most variation in the data, emerged. At this point, selective coding replaced open coding as the core variable and major concepts guided data analysis. Theoretical sampling, as guided by the theoretical ideas developing from data analysis, was used throughout to identify subsequent data sources to reach theoretical saturation--when no new variation was found in the data.

Theoretical coding was then used to tie the concepts of the emerging theory back together by conceptualizing the relationship between the concepts. Theoretical coding helped identify the underlying structure of the theory as the memos were sorted and a theoretical outline was developed. At this point, relevant literature was integrated and the theory was written up.

The main concern of the participants was their struggle with identifying and appropriately nourishing their hungers, which was termed as hunger confusion. This struggle with hunger was resolved for some participants via developing mind body hunger mastery which was identified as the core variable. The theory of developing mind body hunger mastery examines physical and abstract hungers, how these hungers are nourished,

what gets in the way of recognizing and nourishing these hungers, and the path to overcoming these interruptions.

Developing Mind Body Hunger Mastery

Developing mind body hunger mastery is moving towards successfully identifying and nourishing both physical and abstract hungers, the two types of hunger that emerged from the data.

Physical hunger is the commonly accepted experience of the physiological sensation(s) produced by the physical body when it requires fuel. Physical hunger is typically recognized through the body's internal communication system that creates the experience of hunger physically, mentally, and/or emotionally (hunger signs). Within the data, this experience was often referred to as "a gnawing sensation" or "that feeling of emptiness in the pit of the stomach." Some individuals find contentment in their relationship with physical hunger over time, accepting and allowing this meaningful feedback regarding the body's needs for optimal well-being. The achievement of this level of contentment is physical hunger mastery: having mastered an effective and harmonious relationship with physical hunger by accepting and responding to the body's feedback signals for fuel as evidenced by making food and food quantity choices that satiate the physical hunger. This mastery can be seen in one participant's statement, "when I feel hungry, I'm looking for something to eat and so that I just don't feel that hunger anymore . . . to me, it's a very simple thing."

However, within participant interviews, more than one type of hunger was spoken of leading to the emergence of the concept abstract hunger.

Abstract hunger is a longing or desire, which may be elusive in nature, and may include emotional hunger, intellectual hunger, spiritual hunger, or other non-physical hungers. One interviewee talked about "the non-physical . . . things like instincts and emotions and intuitions." She noted the need to "differentiate between these kinds of hunger." Another study participant spoke of "soul hunger" as she described her spiritual path and finding fullness in this journey. She said, "if you don't have [physical hunger], you're dead . . . and on the spiritual level, I think the same thing happens . . . if you don't have the hunger . . . you're going to spiritually shrivel up and die." Similarly, in the final interview, the participant spoke of "a different kind of hunger" when "people eat for emotional, psychological and spiritual reasons." Thus, hunger was separated into physical hunger and abstract hunger.

The awareness of physical and abstract hunger can occur along a continuum of intensity from subtle through extreme. In fact, hunger experiences can be nuanced and complicated to the point that some people experience confusion and interruptions at multiple levels along the nourishment process. Appropriately nourishing physical and abstract hungers can be interrupted by a variety of factors, most notably, hunger confusion and lack of awareness. Lack of awareness is missing insightful understanding of deep meaning and connections. Together, lack of awareness and hunger confusion can be associated with a complex cascade of interfering factors, behaviors, and struggles that may exacerbate a vicious cycle. Over time, this cycle can become habitual, creating a sense of

being stuck in the self-destructive patterns of interrupted nourishment, leading to hunger suffering.

Hunger suffering can be understood as experiencing negative emotions (such as guilt, sadness, conflict, confusion, angst, self-doubt, anger, etc.) regarding the experience of hunger. Indeed, some individuals have a significantly problematic relationship with hunger and/or relationship with food, leading to a great deal of suffering beyond just the discomfort of the hunger sensations themselves. As there is an increase in the identification of physical hunger signs, there may likewise be an increase in conflicting thoughts and emotions related to the physical hunger, such as guilt and shame, which can be a distraction from attunement with mind-body connection, clarity of physical hunger, and ability to engage in simple physical nourishment. Unfortunately, some people struggle with intense negative emotions surrounding hunger for many years; for some, this suffering can be present for most of their adult lives. One study participant said,

> I really started noticing being mad at myself when I would be hungry, I mean I'm sure I felt it as an adolescent, but I really started noticing it in high school. Probably between 14, 15, 16 – those years I really started becoming more aware of certain feelings, like you have to be skinny to be loved.

This study participant was living her life stuck in the struggle of hunger suffering on a daily basis, month after month, and year after year.

This state of confusion and suffering is addressed by some people through the development of mind body hunger mastery. Overcoming hunger confusion and hunger suffering includes consistent behavioral patterns of both physical hunger mastery as well as full expression. Physical hunger mastery is having successfully achieved an effective and harmonious relationship with physical hunger by accepting and responding to the body's feedback signals for fuel as evidenced by making food and food quantity choices that appropriately satiate and manage the physical hunger. Full expression is the outward expression of abstract hungers through actions and behaviors that match those hungers, which manifests as the fullness and richness of life and the satisfaction of the soul. One study participant explained, "I've managed to fulfill emotionally, spiritually what I've needed…it's not a coincidence that the physical hunger isn't an issue (for me) because the soul hunger has been satisfied." When individuals develop mind body hunger mastery, nourishing abstract hungers through expressing their desires and taking the necessary actions in life to satisfy their hungers becomes more frequent. That is, longings, such as companionship, self-expression, adventure, reward, safety, and so on, are satisfied with specific behaviors to address those desires (connection with others, communication, executing an adventurous experience, etc.). When mind body hunger mastery is achieved, physical hunger mastery and full expression are more prominent than patterns of hunger confusion and hunger suffering. However, many people do not experience mind body hunger mastery but instead struggle with interrupted nourishment.

Interrupted Nourishment

There are a number of factors that interfere with the development of mind body hunger mastery, which include family influences, emotional interference, cognitive interference, and environmental influences. One of the most foundational influences of hunger experience

(including interrupted nourishment) may be family influence: the impact of family members, family dynamics, learned behaviors, mindset, and family history. Things like eating habits, normalization of hunger, spoken and unspoken nourishment behaviors, and food consumption struggles can be experienced in youth and modeled through family influence (Brown, Schiraldi, & Wrobleski, 2009; Dinsmore & Stormshak, 2003). Family influences impact the developing mind and behavior patterns of children in the context of hunger and eating; however, these influences may lead to conscious or unconscious lifestyle habits and belief systems in adulthood as well (Grant & Boersma, 2005). Family influence can also play a significant role in how an individual identifies, manages, and nourishes both physical hunger and abstract hunger into adulthood. One woman addressed the impact of family influence on her present-day food consumption pattern of over-indulgence:

> I don't have memories of being especially hungry. I do remember that we would eat so much at Sunday dinner that it was just a family tradition for everyone to be sitting around after Sunday dinner just holding our bellies going, "Ooh, I'm so miserable." That was a standard part of our family culture…every meal, every dinner, especially every Sunday dinner was like a Thanksgiving feast.

In this example, the study participant connected her early food memories with an unspoken family culture of excessive food quantities and eating past fullness regardless of the presence or absence of physical hunger. Family and life stress impacts young children's behaviors of eating in the absence of hunger (Michels et al., 2014), and when viewed through the lens of attachment theory, overeating due to emotional hunger feeds a deep hunger for safe and nurturing relationships (Hernandez-Hons & Woolley, 2012; Hertz, Addad, & Romel, 2012; Wilkinson, Rowe, Bishop, & Brunstrom, 2010). Family influences can be very closely connected with emotional factors both in childhood and into adulthood.

Emotional interference is a process whereby emotions get in the way of one's ability to recognize and respond to hunger. In general, emotions and physical hunger exhibit distinctly different physical sensations in the body; however, these differences may be subtle enough that some people can get confused by whether they are experiencing a specific emotion, a cocktail of emotions, or the physical sensations of hunger or fullness. Also, some individuals engage in food consumption in direct response to negative emotions. This concept is widely studied, and several research tools have been developed to assess how emotionality impacts one's experience with hunger and/or food consumption (Arnow, Kenardy, & Argas, 1995; Garaulet, Canteras, Morales, Lopez-Guimera, Sandez-Carracedo, & Corbalan-Tutau, 2012; van Strien, Fritjers, Bergers, & Defares, 1986).

Emotional hunger can play out as a form of abstract communication leading to physical hunger experiences that are symbolic of other, deeper hungers. The phenomena of nuanced and entwined physical and abstract hungers can be associated with the habit of engaging in food consumption to temporarily quiet non-physical hungers and anxiety related to abstract hungers. Several study participants noted the experience of "escaping," "sedating," and "going numb" by using food to quell unattainable abstract hungers, difficult emotions, and life stressors. Blackburn, Johnston, Blampied, Popp, and Kallen (2006) demonstrated that turning to food consumption as a means of avoidant coping fits within the context of escape theory.

Anxiety and other negative emotions may actually trigger physical hunger in people who have responded to such emotional stress through food consumption over time. In other words, some individuals may respond to certain emotions with the experience of physical hunger in anticipation of a patterned response: eating. For example, one study participant described how uncertainty, such as loss and transitions, cause her anxiety and lead to food consumption. This happens for her on a large scale (major life transitions) as well as on a smaller scale (subtle transitions throughout each day). She said:

> I know that dropping my children back off, there's always a loss. So when there's a loss, I feel hunger . . . going from one task to another, there's always this little space in the middle where this thought of, "Oh, maybe you should have something to eat."

The link between hunger experience and food consumption patterns can be a common link for many people. In particular, emotionality (both negative and positive) can be a strong force when the lines of emotional hunger and physical hunger are blurred.

Emotional eating is eating in response to emotions, as a way to cope with emotions, and/or as a form of emotional alteration or emotional suppression. Eating in the presence of negative emotions and in the absence of physical hunger is a well-documented aspect of emotional eating and binge eating (Haedt-Matt & Keel, 2011; Witt & Lowe, 2014). Emotional eating itself has been studied as it relates to body weight, eating disorders, emotional awareness, and mindfulness (Compare et al., 2013; Geliebter & Aversa, 2003; Moon & Berenbaum, 2009; Roosen, Safer, Adler, Cebolla, & van Strien, 2012; Waller & Osman, 1996, respectively).

Cognitive interference is the process whereby thoughts get in the way of one's ability to recognize and respond to hunger. In general, thoughts can influence many aspects of hunger either positively or negatively. One study participant noticed that thoughts about hunger interrupted her ability to trust her body's natural hunger cues:

> A lot of times when I feel hungry, especially if I'm having a day where I feel fat, or feeling self-conscious, if I start to get that hunger twinge, it's like I freak out and panic . . . this huge part of me is saying, "you're not, don't ever eat again," so it's very complex and sometimes I'm okay with eating when I'm hungry and realize I need to, but a lot of times I'm not.

In this example, the participant touched on the aspects of negative body image and cognitive interference that can be associated with hunger denial and hunger confusion. This confusion is a well-studied common phenomenon among those who experience interrupted nourishment. For instance, in a study of 365 overweight and obese adults, Sibilia (2010) identified a complex web of bio-psychosocial and behavioral pathways related to hunger confusion, perceived hunger, and dysregulated eating habits, which included reduced self-control of child's eating behaviors, emotional distress, eating in the absence of hunger, and many more factors. Those who experience hunger confusion are more likely to also experience hunger suffering.

In addition to family influences, emotional interference, and cognitive interference, there is another factor that can interrupt nourishment patterns: environmental influence (situations, events, people, and/or other environmental factors that impact an individual's hunger experience and/or nourishment patterns). Environmental influences are typically

external factors (outside of one's own body and mind); however, the external environment can act as a stimulus for internal states (thoughts and emotions) that impact hunger and nourishment experiences, both at the physical and abstract levels. One study participant shared this sentiment:

> If I go sit in front of the TV to veg out, to relax, the next natural thing for me is to get something to eat, get some popcorn or fix some ice cream or look for a cookie or look for some chocolate or something which is just habitual. It's not that I'm hungry, it's just it's a habit. When I come out [to my porch] . . . I don't feel the need to nibble…I just enjoy feeling the breeze, listening to the birds, and it feeds all my senses.

In this example, the study participant was just beginning to become aware that she could experience a sense of abstract nourishment that was not related to food consumption, and that the awareness of this level of nourishment was influenced by the physical environment.

Interoceptive Awareness

Interoceptive awareness (the identification and acceptance of physical sensations in the body that correspond to internal physiological or emotional states, including hunger, fullness, anger, joy, contentment, etc.) is the first step in overcoming hunger confusion and hunger suffering. As interoceptive awareness increases, hunger confusion and hunger suffering often decrease. Interoceptive awareness aids in recognizing personal nuances, such as food consumption patterns, emotional states, and the differentiation of physical hunger and abstract hunger. The development of this deep state of self-awareness can also facilitate an understanding of how food quality, quantity, and timing can impact the physical hunger experience. One study participant said, "the past couple of years from everything I've learned about my body and my experiences with food . . . it's changed over time . . . I've started to realize subtle differences about hungers." In this example, the study participant explained how her self-awareness opened her eyes to the subtlety of her hunger experiences, both at the physical and abstract levels.

Self-awareness can be associated with self-trust, which is a belief in and alignment with the internal states of the self. As the practice of becoming aware of the body's internal cues increases, hunger confusion often decreases. Self-trust is an element of developing the internal skills to move away from interrupted nourishment and towards physical hunger mastery and full expression. The development of self-trust may occur over time and after consistent experiences with self-awareness and self-care and in response to past failures and/or successes. One man noted, "I can be at my best because I've been through those selves where I didn't understand." In this example, the interviewee was specifically referring to his fine-tuned ability to recognize and respond to his physical hunger throughout the day. Self-trust is a necessary element in fulfilling both physical hunger and abstract hunger, including both trusting the inner communication system of the physical body as well as the abstract stirrings of the soul and the psyche. If mind body hunger mastery is achieved, then a higher level of self-trust may also be achieved that allows individuals to trust their body's needs, though this may not happen on its own without effort and change of old habits.

Effort to Change

Developing mind body hunger mastery can include putting forth the effort to employ new coping strategies and emotional responses, as well as challenging current thought patterns. Willingness, curiosity, courage, and discipline may also aid the development of mind body hunger mastery. Without willingness, the effort required to change habits may be insurmountable. Effort and change are very closely linked; however, individuals can put forth effort without making significant change in their lives and/or individuals can seek change but are unable, unwilling, or unsure of how to put forth the effort required for that change to take place. One study participant explained how this worked for her:

> When I try to change my thought process or I spend time kind of talking myself down, I can get that to override this other hunger. Emotional hunger, given the time and the effort and waiting . . . if I just pause, then I can change that. . . just having a conversation with myself, I can override emotional hunger…It works, it's just a matter of how much effort am I going to put into that today.

In this particular example, the study participant was aware of and able to put forth the effort required to change her emotional eating and related thought patterns; however, she was unable and/or unwilling to put forth the effort consistently over time for sustainable change.

Thought regulation is managing thoughts or thought patterns. Thought regulation is often crucial to developing hunger mastery for some people. The urge to engage in food use (such as emotional eating or binge eating) can be overridden by thought regulation and entering a state of self-awareness. In other words, thought regulation may be strengthened through effort and discipline of the mind. Hunger and eating behaviors can include obsessive thinking for some people, in which thought regulation can be particularly helpful. With consistent effort over time, the habit change of thought regulation can be possible, which may be particularly relevant for those who are stuck in the cycle of food use and hunger suffering. Replacing food use may in fact necessitate thought regulation, including positive self-talk. One study participant said, "It's exhausting sometimes to constantly be having this healthy voice having this kind of well-meaning discussion with this other unhealthy voice." In this example, the study participant acknowledged the effort required to consistently engage positive self-talk to dialogue with the "healthy" and "unhealthy" perspectives within oneself. Though it requires great effort, self-talk can specifically aid in both thought regulation as well as emotion regulation.

Emotion regulation is the process of successfully managing emotions and emotional patterns in healthy ways. Similar to thought regulation, healthy regulation of one's emotions is a key component of personal development and overcoming interrupted nourishment. There is significant interplay between thought regulation and emotion regulation among those striving for physical hunger mastery through self-awareness and personal development. In fact, the first step in emotion regulation may be to believe that emotion regulation is possible, and can ultimately become successful over time with effort and practice. One woman explained her experience: "Being able to feel and express [emotions] and ask for acknowledgement of them . . . requires a tremendous effort and practice, and belief that it is valuable–belief that it makes a difference." In this example, the study participant clearly articulated how she had to believe it was possible and then came to a decision regarding her willingness and the ability to change how she approached and regulated her emotions. Emotion regulation may take place when not only when belief

is present, combined with the ability to recognize and overcome emotional interference. Learning emotion regulation may be one of the most difficult steps for some people in the process of developing mind body hunger mastery.

Another important tool that aids in positively altering negative emotional states is social support. Social support is a person or persons who aid and encourage--a spiritual teacher, friend, family member, professional helper, or other helpful and supportive persons. Developing hunger mastery can include reaching out for social support and/or consciously building social support around oneself. As support increases so may thought regulation, emotion regulation, and/or other supportive aspects of self-awareness and personal development. One study participant talked about the importance of social support along her movement towards hunger mastery:

> The support of family and friends, especially family support . . . I've gotten support and that has gone a long way and I've seen other people going through a journey like me that don't have the same support and seeing how that just doesn't help serve them. It really has served me to have support. I think I couldn't have done it without it.

In this example, social support was a crucial pillar in developing hunger mastery and in the climb out of hunger suffering.

Finally, a disciplined eating structure may be another important key in developing mind body hunger mastery. Structure, as played out through eating schedules and balanced nutrition, is a relevant pattern among those who had moved (or who are in the process of moving) out of interrupted nourishment and towards physical hunger mastery. The incorporation of an eating schedule may actually stimulate hunger signs, which can promote interoceptive awareness. One study participant noted:

> When I eat what's a reasonable breakfast and I know all the i's are dotted and t's are crossed–it's got all my proteins and my fats, my grains, whatever it is that I need that should hold me for a couple of hours . . . when I actually fuel my body in what I think is supposed to be an appropriate manner I actually experience physical hunger more.

In this example, the study participant was just beginning to move towards physical hunger mastery and was actually feeling frustrated by the increase in hunger sensations she experienced when following a structured eating routine. Another study participant who was further along in her journey towards hunger mastery described a similar phenomenon:

> I think getting on a regular schedule of eating correctly–three meals and three snacks throughout the day–just getting into that pattern I think did a lot for my body as far as bringing back those hunger and fullness cues.

In both examples, the study participants identified nourishment disciplines, such as balanced nutrition and scheduled eating times, as key in their development of mind body hunger mastery. Development of physical hunger management through proper nourishment patterns is also commonly identified within hunger literature (Academy of Nutrition and Dietetics, 2013; Palmer, Capra, & Baines, 2011; Talbot & Avery, 2011), including the management of emotionally-provoked food use (Ganley, 1989; Geliebter & Aversa, 2003; Pidgeon et al., 2012).

Conclusion

In summary, the main problem for the participants of this classic grounded theory study included hunger confusion, which was alleviated by the process of developing mind body hunger mastery. Hunger confusion and mind body hunger mastery are both unique concepts that emerged from this study, and neither has specifically been studied within the fields of eating behavior, behavioral medicine, or psychology. While there is ample research in the overlapping areas of hedonic hunger (Stroebe et al., 2008; Witt & Lowe, 2014), emotional hunger (Andrews et al., 2011; Hernandez-Hons & Woolley, 2012; Timmerman & Acton, 2001), and spiritual hunger (Flinders, 1999; Lake, 2015; Lelwica, 2009; Myers, 2001; Plueddemann & Plueddeman, 2000), this is the first study to explore the full complexity and continuum of hungering. Similarly, while existing literature points to interoceptive awareness as it relates to eating disorder recovery (Myers & Crowther, 2008) as well as general eating behavior (Francis & Stevenson, 2011), this is the first study to explore the pathway out of generalized hunger confusion and into a state of hunger mastery. Further, the term mind body hunger is a very timely addition to the breadth of theories (Al-Shawaf, 2016; Blackburn et al., 2006; Frederickson & Roberts, 1997; Orzolek-Kronner, 2002), qualitative (Hertz, et al., 2012; Ogden, et al., 2011) and quantitative studies (Barkeling, et al., 2007; Born, et al., 2010; Davidson & Jarrard, 1993) that aim to address eating behaviors from the separate neurological (Born, et al., 2010; Davidson & Jarrard, 1993), bio-behavioral (Friedman, 1999; Jospe, 2015; Talbot & Avery, 2011), and psychological (Loeber, 2013; Sibilia, 2010) aspects of hunger.

Hungering can be experienced as physical hunger and as abstract hunger, which can become intertwined and layered due to the interrupting factors of family influence, cognitive interference, emotional interference, and environmental influence. The path out of hunger confusion is the development of mind body hunger mastery, which begins with interoceptive awareness and is supported through the effort to change patterns in thought regulation and emotion regulation. Social support and structured nourishment are both supportive factors in the development of mind body mastery as well. The overarching connection between lack of self-awareness with hunger confusion paralleled with the development of interoceptive awareness as an aspect of developing mind body hunger mastery is consistent within hunger literature (Nentjes et al., 2013; Pollatos et al., 2008).

The implications for the application of this theory may include a breadth of disciplines, including health care professionals in the fields of dietetics, behavioral medicine, weight management, and psychology. In particular, the exploration of hunger confusion, and its depth of hunger suffering may provide insight for the compassionate care of those who struggle with food behaviors. In addition, the recognition of the specific factors that contribute to the exit from hunger confusion may provide guidance to individuals who struggle with hunger as well as for the professionals who support these individuals in their journey towards health and well-being.

The limitations of this substantive theory include the small sample size of interviews that were coded as data. Continued data collection among more individuals will offer a more refined theory that is more generalizable to the human experiences of hunger confusion and the development of mind body hunger mastery. In addition, the personal

background of the primary researcher in the fields of nutrition, obesity, and eating disorders may have impacted the data analysis. Finally, because this theory was generated as a doctoral dissertation, the artificial timeline imposed on completing this theory may have contributed to lack of full saturation in some area, thus providing opportunities for future research.

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Complex Adaptive Systems of Systems: A Grounded Theory Approach

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Abstract

This paper details the classic grounded theory approach used in a research project to develop a conceptual theory for an engineering solution to address highly complex problems. Highly complex problem domains exist and are on the rise as we enter an Age of Interactions and Complexity. Our current world has been characterized by the plethora and ubiquity of information and global interconnections that link events and decisions to outcomes and effects that are often unpredictable and result in severe unforeseen and unintended consequences. Technological advances such as computers, the internet, Big Data, social media, artificial intelligence, and communication networks have expanded complex problem spaces. However, these same technologies present an opportunity to engineer a complex adaptive system of systems solution to address these challenging problems. This research project embarked on a classic grounded theory approach to study a number of knowledge domains and engineering processes, allowing a conceptual theory to emerge that offers an engineering solution to address highly complex problems. The project resulted in the emergence of a theory for a new class of engineered CASoS solutions. This paper details the classic grounded theory approach taken to conduct the research.

Keywords: complex adaptive systems of systems, grounded theory, systems engineering, complexity

Introduction

> Most people would agree that the world is becoming more complex. Much of this is driven by two phenomena that have started to dominate our lives in recent years. First, we face an unprecedented level of integration and are immersed in a *complex* web of interacting technologies and processes, dominated by the developments in information and communication technologies. Second, rapid change has become the norm with technologies, practices, and organizations being introduced continuously into this highly integrated web. (Calvano and John, 2004, p.29)

The rise of automation in many systems, and technological ubiquity in general, present complex problems that require a solution that can continually adapt to meet the

changing demands of the operational environment. The interaction of heterogeneous and increased technologies introduces multi-faceted problems that are unlike any before seen. Alberts (2011) stated that we have entered the *Age of Interactions* in which events and decisions are linked to many outcomes that affect many other events. Bar-Yam (2004b) cited many examples of complex problem spaces including military conflict, health care, education, international development, large scale natural disasters, ethnic violence, and terrorism. National strategies often invoke the DIME (diplomatic, information, military, and economic) construct, as is the case when countries apply economic sanctions, or use diplomatic negotiations. Hillson (2009) explained that the DIME components constitute actions and consequential effects that can be highly interactive, complex, and unpredictable. As nations implement the DIME construct, the effects can be highly interrelated and can have unpredictable consequences. Technological advances in global information and communication infrastructures accelerate these complex interactions and the tempo of cause and effect. Complexity scientists are studying the causes and effects of seemingly unrelated events that have significant repercussions. Lagi, Bertrand, and Bar-Yam (2011) found that agricultural price increases in North America due to droughts were indirectly and inadvertently linked as a causal factor to violent protests in North Africa and the Middle East.

Technological advances in computers, Big Data, artificial intelligence, global information and communication networks have contributed to complex problem spaces. Big Data refers to the current paradigm of enormous amounts of data and information that exist because of commercial, government, and military enterprises, as well as individual communication and participation in social media (Zhao, MacKinnon, & Gallup, 2015). Big Data fosters the *Age of Interactions* through new technologies that enable rapid capture, processing, and storing of vast amounts of data, which result in heightened awareness, information overload, and unlimited access to information systems, individuals, and enterprises. Exacerbating the problem domain are vast global networks of interconnected information nodes that create increases in complex interactions.

Complexity is the state of having many different parts connected or related to each other in complicated, often non-linear interactions that are difficult to understand in a more complete manner. Highly complex problems are unpredictable and present dire consequences if not handled properly. They change over time, are unique from moment to moment, and often present shortened reaction times for involved decision-makers to address them (Johnson, 2012). Complex problems, resulting from numerous non-linear interactions, can overwhelm traditional systems that cannot adapt quickly enough; cannot address multiple missions occurring simultaneously; and cannot process information quickly enough to make effective decision-making possible. Calvano and John (2004) studied systems engineering methods aimed at handling complex problems. They called the current age, the "Age of Complexity" (Calvano & John, 2004, p. 29). They found that traditional methods of engineering systems to meet well-defined static requirements are not sufficient to meet the adaptable and complex behavior required of engineered solutions for highly complex problem spaces.

This research project studied complex adaptive systems of systems (CASoS) as a new class of systems with the potential to address highly complex problem spaces. These

complex decision spaces require a new approach: one that enables intelligent adaptive systemic behavioral responses and courses of action to tackle the complexity. This approach includes a system of systems that can produce intentionally designed and desired emergent behavior through the self-organization of their intelligent and purposeful constituent systems. By developing a theory for engineering a CASoS, this research contributes to the bodies of knowledge regarding systems, systems of systems (SoS), and complex systems. The application of an approach based on CASoS theory to address certain complex problem spaces opens a new area of research within the domain of systems engineering.

In this paper, the authors describe the method of inquiry used to explore CASoS as solutions to highly complex problems, with a general discussion of classic grounded theory—an approach resulting in the emergence of theory based on creativity, reflection, conceptualization, and a self-critical iteration of ideas. The majority of the paper discusses the detailed application of classic grounded theory to produce the CASoS Engineering theory.

Grounded Theory

> A theory is systematically organized knowledge applicable in a relatively wide variety of circumstances, using a system of assumptions, accepted principles, and rules of procedure devised to analyze, predict, or otherwise explain the nature of behavior of a specified set of phenomena. But it is also simply the best explanation which is available at the time. (Remenyi, 2014, p. 64-65)

Theory is a means of understanding and explaining observed phenomena. Adams, et.al. (2014) defined theory as "a unified system of propositions made with the aim of achieving some form of understanding that provides an explanatory power and predictive ability" (p. 115). They went on to write, "a theory does not have a single proposition that defines it, but is a population of propositions (i.e., arguments, hypotheses, predictions, explanations, and inferences) that provide a skeletal structure for explanation of real-world phenomena" (p. 115).

There are different research methods for developing theory. A common practice (deduction) follows the positivist scientific method of hypothesizing a theory and conducting experiments to test the theory, resulting in its adoption or rejection. The positivist approach is widely applied in the physical sciences. It relies on the scientific method, logic, and mathematics to develop theories that are predictive, reproducible, reliable, rigorous, and objective. Positivism assumes that the universe behaves according to inalterable, discoverable laws, and systems are merely the sum of their components (Stol et al., 2016).

Interpretivism, which is on the opposite side of the philosophical spectrum, is widely used in the social sciences and aims to understand and interpret human behavior. Interpretivism relies largely on qualitative data and assumes that no universal truth or reality exists (but rather reality is what people imagine it to be), and systems exhibit emergent behaviors not reducible to their component parts (Stol et al., 2016).

Another approach to developing theory is the classic grounded theory method, which is based on induction, and falls somewhere between positivism and interpretivism. Induction

is a method used to determine possible correlations of the deficiencies between the desired and calculated. These correlations are accepted into the design knowledge as new knowledge. With the classic grounded theory method, a researcher studies observations and data in a structured and analytical way, thus enabling a theory that describes the phenomena to arise or emerge from the data. The results and findings are thus *grounded* in the empirical world. The classic grounded theory method *builds*, rather than *tests,* theory (Patton, 2015).

A recent review of software engineering research projects using grounded theory revealed a wide use of mixed methods based in positivism and interpretivism (Stol et al., 2016). However, this research project is neither positivist nor interpretivist. It does not develop a theory concerning observed physical phenomena or human behavior. Instead, its objective is to develop a theory for a new class of systems that shows potential as engineered solutions to highly complex problems. The research is rooted in pragmatism, and is largely theoretical or non-empirical, relying on examination of literature, reflection, and discourse with knowledgeable experts. This study focused on developing a critical theory that describes the class of CASoS solutions that can be applied to address highly complex problems. For these reasons, the classic grounded theory approach was chosen to provide a rigorous methodology for performing this theoretical engineering research. Grounded theory is an effective methodology for pragmatic research based on rationalism (a reason-based approach to understanding).

The classic grounded theory research method originated in the 1960s by Glaser and Strauss (1967) and was developed "due to a desire to build theories more rigorously and dispassionately by grounding them in objective reality" (Stol, 2016, p.3). The classic grounded theory process relies on theory-method linkage, a rigorous yet iterative research methodology, and creative synthesis. Theory-method linkage is the important connection between data analysis and the formulation of theory. This building of theory results from an iterative process of gathering and analyzing data, and articulating a theory to explain the phenomena (Creswell & Poth, 2018). The iterative process of data gathering, coding, and analyzing is illustrated in Figure 1. This figure shows how the classic grounded theory process begins with low-level substantive concepts and works toward high-level theoretical concepts using a series of analytic techniques. Coding is the process of categorizing and organizing data about phenomena, identifying properties and causal conditions that influence phenomena, specifying strategies or actions that result from phenomena, and characterizing the context and influencing conditions.

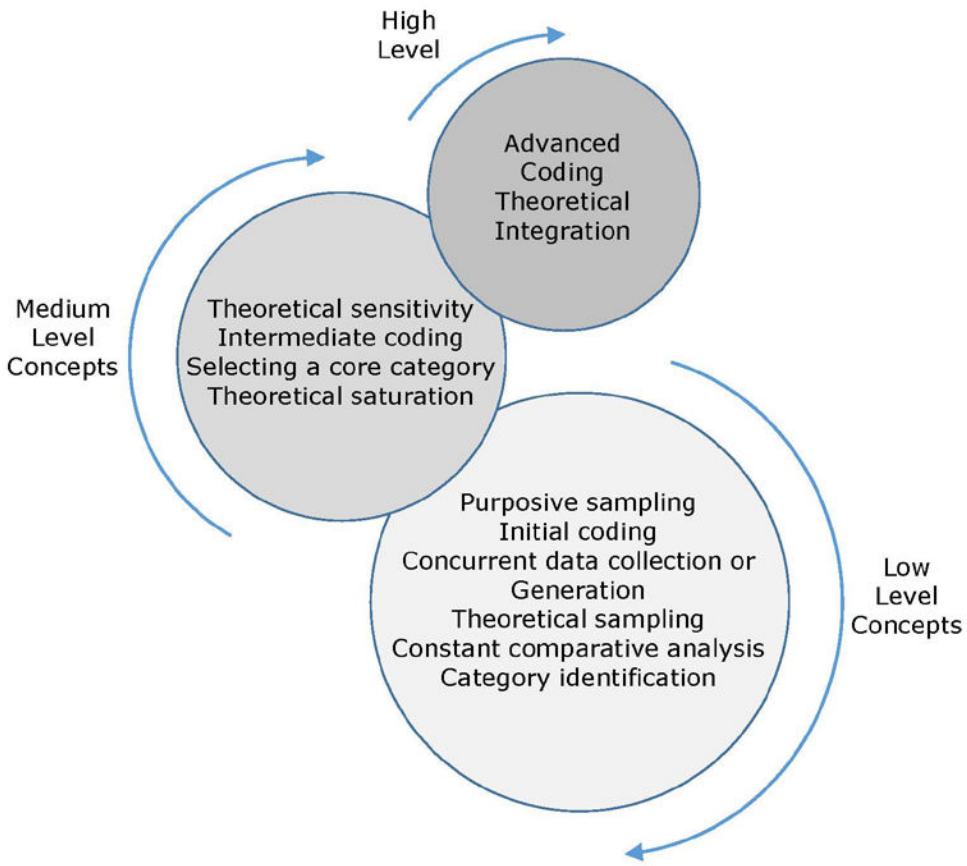

Figure 1. Conceptual Ordering of General Grounded Theory Methods (Birks & Mills, 2015)

Theoretical sensitivity, coding, sampling, constant comparison, saturation, selective coding, and integration are additional analytical steps in the research process (Glaser & Holton, 2004; Holton, 2007). With theoretical sensitivity, a researcher can recognize and extract relevant information about the theory from the data. The process of theoretical sensitivity involves conceptualizing and organizing theoretical insights and making abstract connections from the data. The researcher performs theoretical sampling to identify and pursue clues that arise as data are gathered, studied, and coded. The sampling process of data collection is controlled by the emerging theory, rather than being planned ahead of time. Codes are discovered, and the researcher tries to saturate them by constant comparison with new data. Saturation occurs when no new codes are identified and data categories have been clearly articulated. Selective coding occurs once a core variable (or central theoretical theme) emerges. The selective coding focuses and delimits the process to only analyzing data related to the emerging theory and related concepts. Integration pulls together the abstract theoretical scheme into a final grounded theory.

This study relied primarily on a literature review as the primary source of data. Remenyi (2014) equated this theoretical grounded theory approach, relying solely on non-empirical data, to thought experiments performed by Einstein, which involved the application of imagination and creative thinking to a hypothetical situation. With the

theoretical grounded theory approach, a researcher studies established ideas and theories through the literature review process. With the theoretical grounded theory approach, a researcher studies established ideas and theories through the literature review process and extends these ideas to create new theories and insights with the goal of providing better or fuller explanations. This process is based on rationalism, which is the philosophical view that regards reason as the primary source of understanding. Remenyi (2014) explained, "Rationalism holds reason to be a faculty that can access truths beyond the reach of sense perception both in certainty and generality" (p. 71). Remenyi (2014) described eight distinct steps in the theoretical grounded theory approach:

1. Research question formulation,
2. Literature review,
3. Explanation of why a theoretical approach is being taken,
4. Concept identification and reflection,
5. Theoretical conjecture and formulation,
6. Discourse with peers and experts,
7. Theoretical conjecture, refinement, and acceptance, and
8. Discussion on the impact and implications of the theory.

This study incorporated Remenyi's eight theoretical research steps as part of the classic grounded theory method as it provided insight into performing grounded theory using literature review as the primary data source. Table 1 shows how the eight steps were mapped into the three levels of data coding. Steps one through four occur during the low level concept phase; step five occurs during the medium level concept phase; and steps seven and eight occur during the third phase of advanced level concepts. Step 6, discourse with peers and experts, occurs during all three phases of the classic grounded theory method.

Table 1. The Theoretical Grounded Theory Steps According to the Data Coding Levels of the Classic Grounded Theory Method

Low Level Coding	**Medium Level Coding**	**High Level Coding**
Steps 1-4	**Step 5**	**Steps 7-8**
Step 6		

Classic grounded theory was the appropriate research method for this research. As an intentionally-designed and engineered CASoS does not yet exist, it was necessary to gather and study data (theories, concepts, ideas, definitions, indicators, etc.) to better understand CASoS and its engineered application to real world problems. Classic grounded theory provided a rigorous qualitative approach necessary to allow a theory to emerge from the data. Classic grounded theory is consistent with a systems approach, which made it an effective approach for the researchers' goal of developing system theory. Researchers who use classic grounded theory view reality in terms of systems and their interactions and it

offers a holistic perspective. The benefit of a classic grounded theory research approach was that it lent formalism and rigor to the development of a CASoS theory. By using this methodology, the intent was that the CASoS theory is plausible, transferable, and applicable to real world problems.

Theory validation was also a consideration in the choice of research methods. For classic grounded theory, the process of theory validation is based on the concept of research quality. Birks and Mills (2015) wrote that quality in the grounded theory research methodology leads to theory credibility. They equated *quality* with procedural *rigor*. A quality grounded theory approach is demonstrated through controlled research processes and methodological congruence. Remenyi (2014) wrote that credibility is based on two criteria: the quality of the scholarship employed and whether the research results have added something of value to the body of knowledge. These methods of theory validation were compatible with the researchers' goals of applying a rigorous methodology and solving real world problems by extending the systems body of knowledge.

Research Methodology

This section describes how the classic grounded theory approach enabled the authors to define the characteristics and principles of the CASoS as a new class of systems to facilitate the study of highly complex problems.

Initial Coding: Low Level Concepts

The first phase of the research was the development of initial or low level theoretical concepts. Initial coding, also referred to as open coding, is a process of fracturing or opening data: to compare incidents, identify phenomena and patterns, and begin the process of identifying conceptual possibilities (Holton, 2007). Figure 2 illustrates this phase and lists the types of activities that were performed (inside the circle), and shows steps 1-4 of the theoretical method, as well as step 6, which occurs throughout the process. The classic grounded theory activities (purposive sampling, initial coding, data collection, data generation, theoretical sampling, constant comparative analysis, and category identification) occurred during the four steps of this phase. The following subsections present the research activities conducted during these first four steps, with a discussion of how discourse with peers and experts (step 6), occurred in each step.

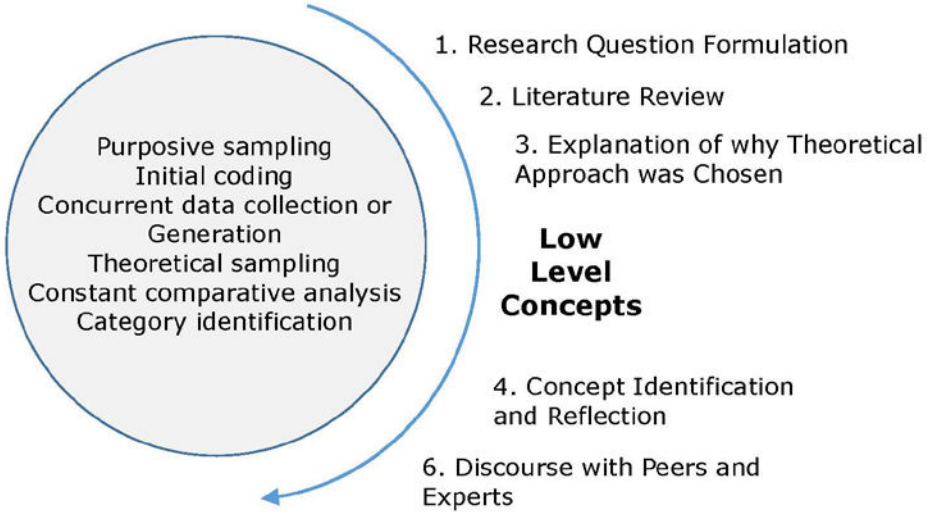

Figure 2. Initial Coding: Low Level Concepts (Adapted from Birks & Mills, 2015)

Research question formulation (step one). Research began pragmatically with a goal of improving the U.S. naval warfighters' military advantage in complex tactical threat environments. Data collection consisted of studying maritime tactical threats, operational environments, and capability gaps in the Navy's ability to address or outmaneuver tactical threats in an effective manner. Comparative analysis of this data exposed the challenges and surfaced patterns of complexity in the tactical problem domain. This analysis was performed by identifying characteristics of the tactical maritime environment and comparing them to a set of characteristics of complex problem domains that are defined in current literature. Evidence pointed to the potential performance benefits of a SoS approach, in which distributed warfare systems would be networked for coordination using automated intelligence (Johnson, Green, & Canfield, 2001). Potential benefits included huge improvements in overall probability of kill and better usage of weapon resources through improved situational awareness (SA) and a layered defense. Another result was the observation of a pattern of complex behavior in the tactical problem domain. Additional literature review (Alberts, 2011; Ames, 2011; Bar-Yam et al., 2004a; Calvano & John, 2004; Levin, 2002) and discourse with experts, led to the concept that an engineered solution to the tactical domain would require the ability to adapt to dynamic situations and threats.

Continued data gathering through literature review revealed the concept of a CASoS (Glass, 2011) as a description of highly complex problems and an approach to addressing them. Through purposive sampling, the researchers identified additional problem domains that had similar characteristics as the naval tactical problem. These cases provided information-rich comparisons that resulted in the identification of patterns of similar complexity characteristics in the different problem domains. The researchers identified these patterns by studying the causes and effects of complexity in the problem domains. This discovery led to the decision to generalize the study of CASoS as a potential, engineered

solution beyond a single focus on the naval tactical case. The result of this discovery was the formulation of the research question: what are the characteristics of the CASoS as a new class of systems, and how can they address *highly* complex problems?

Literature review (step two). Literature review was the primary method of data collection throughout the research process. The literature review informed all three phases of the classic grounded theory coding process: initial, intermediate, and advanced. The initial coding phase led to the study of the characteristics of complex problems and the potential of taking a systems approach as an engineered solution. After reviewing and comparing many types of systems and system characteristics, a set of initial codes to establish the categories of systems emerged. Additional forms of data collection resulted from coursework, targeted studies, and discourse with experts and peers.

The researchers relied on theoretical sampling, a process for generating theory by collecting and coding data, and deciding what data to collect next, in order to allow a theory to emerge (Glaser & Holton, 2004). Theoretical sampling was applied throughout the research process as new sources were recommended by experts, discussed in related academic courses, and cited in the literature. Theoretical sampling was applied to the three primary knowledge domains of systems theory, SoS theory, and complexity theory, as well as to the review of research methods and complex problem domains.

Why a theoretical approach was chosen (step three). An intent of the authors was to produce methodological congruence—a state of accordance among the research philosophy, stated aims, and methodological approach (Creswell & Poth, 2008). The overarching goals—to expand the body of knowledge of systems theory and identify an engineered solution approach to highly complex problems—provided a foundation for seeking an appropriate research philosophy and methodology. A review of inquiry methods and research philosophies ensued. This review included a review of books and journals that addressed research methods, as well as intellectual discourse. Giachetti (2015) provided a starting point for engineering studies. Works from Glaser and Holton (2004), Holton (2007), Remenyi (2014), Bryant and Charmaz (2007), Creswell and Poth (2018), and Patton (2015) informed the decision of the authors to use classic grounded theory approach. The major points of this research direction follow:

1. The types of data available (literature review and use-cases of observed phenomena, and information from discourse with experts) are suitable for the classic grounded theory method that can rely on qualitative data.
2. The need to develop theory for engineered CASoS solutions to complex problems (Glass et al., 2011) and the desire to allow it to emerge from the process of data collection, critical analysis, comparison, and creativity, supported the decision to use the classic grounded theory research method. Classic grounded theory enables a theory to emerge from constant comparative analysis and theoretical sampling of diverse qualitative data.
3. Classic grounded theory is consistent with a systems approach, which views reality in terms of systems and their interactions as well as has a holistic perspective. With the objective of adding to the body of systems theory knowledge, classic grounded theory was an appropriate choice.

4. The desire to provide validation and acceptance of the theory was a strong factor in selecting classic grounded theory which provides a formal and rigorous research method for enabling valid theory to emerge from data and analysis.
5. The decision to follow the classic grounded theory method was based on informed opinion, experience, and pragmatism.

Concept identification and reflection (step four). The process of data collection, initial coding, and theoretical sampling, led to a deeper understanding of complex problems and initial concepts for the CASoS solution. This initial level consisted of identifying and understanding the naval tactical use-case as an exemplary complex problem. A better understanding of this case provided a conceptual basis for developing a theory for CASoS solutions.

Viewing the problem domain using a systems approach enabled warfare assets to be organized conceptually as distributed resources. This observation resulted in identifying common command and control functionality across military platforms and patterns of similar system characteristics. This systems approach conceptually shifted the focus from a platform-centric paradigm to a network-centric paradigm and enabled the Naval engineering community to have a foundation for SoS concepts (Johnson, 2002). Through the research process, the authors identified solution concepts based on collaborations among distributed warfare assets, such as layered defense and interoperability within the Navy (Johnson & Green, 2002b). Research on distributed sensor resource management included an example of implementing a set of distributed systems as a SoS in a network-centric paradigm (Johnson & Green, 2002a).

Continued emphasis on a SoS approach of using weapon and sensor systems from different ships and aircraft to operate collaboratively led the authors to identify categories and types of possible collaborations. The functions for combat engagement, or weapons-fire control, were identified and defined in general terms. Each function was studied to determine if it could be performed in a distributed manner. A number of distributed engagement concepts were developed, including precision cue, launch on remote, engage on remote, forward pass, remote fire, and preferred shooter determination (Johnson, 2005).

A course on complex systems prompted a study of the tactical domain as a complex problem. Several authors stated that complex problems can only be addressed by complex system solutions (Bar-Yam, 2003, 2004b; Calvano & John, 2004). Based on this concept, the tactical domain was studied to determine if it had the characteristics of complexity (Johnson, 2012b). First, the data was gathered to define the characteristics of complexity. Next, a comparative analysis related the problem domain to the characteristics of complexity. The analysis resulted in a determination that the tactical problem domain was, in fact, a complex problem space. In addition, the expected behavioral complexity of this domain was better understood and could be used to support an improved approach to the solution concepts. An additional result was a method by which future problem domains could be classified as complex or not.

The research process produced conceptualization of engineered approaches to battle-management that enable SoS collaboration among distributed warfare assets. One area of

study was automated battle-management decision aids. Tactical decisions within the problem domain were identified and studied in terms of areas that could benefit from the support of automated decision aids (Johnson, 2001). A number of studies produced concepts for decision aid capability and functionality as well as a distributed architecture to support these concepts (Johnson, 2004, 2005, 2012a). One concept resulting from this area of research was the idea of a designer SoS—an approach in which the collaborations of warfare assets could be designed during operations to enable near-real-time adaptation to the tactical environment (Johnson, 2013). Another idea was to focus future tactical architectures and processes within a decision paradigm on warfare actions to be taken rather than on achieving situational awareness as the end goal (Johnson, 2014).

The first research phase resulted in the following initial concepts: (1) the military domain is a complex problem and therefore requires a complex solution; (2) an engineered solution for the tactical problem should take advantage of using distributed warfare systems as a SoS; and, (3) taking a systems approach to this problem enables a top-down holistic perspective as well as a means to address the complexity aspects. The process of initial coding identified three primary categories for additional research: systems theory, SoS theory, and complex systems theory. The constant comparison method showed that these bodies of knowledge form the basis for producing a theory for engineering a solution to certain highly complex problems. A generalized approach to the problem was adopted to describe the characteristics of complex problems; and by doing so, to understand and describe the set of solution systems that could address such a problem domain. This generalized approach became the focus of the next phase of the grounded theory research: the development of medium level concepts or intermediate coding.

Intermediate Coding: Medium Level Concepts

Intermediate level coding produced medium level concepts during the second phase of the research. The focus of this phase was the study of the theory and concepts that formed the foundation of the generalized treatment of CASoS as a solution approach to complex problems. Based on theoretical sampling, the decision following the first phase of initial coding was to generalize the problem domain and perform a rigorous study of the characteristics and principles of systems, SoS, and complex systems to provide the theoretical foundation to develop a theory of CASoS. Figure 3 illustrates the classic grounded theory approach followed during this phase of the research. This phase relied on intermediate coding to identify properties, dimensions, patterns, and relationships within the CASoS conceptualization. To accomplish intermediate-level coding, we applied theoretical sensitivity—the recognition and extraction of data elements that have relevance to the emerging theory–resulting in a focus on CASoS as a new class of system solutions. Theoretical saturation was the final state reached when the theoretical concepts were clearly articulated and any additional data reinforced the concepts rather than altering them (Glaser & Holton, 2004).

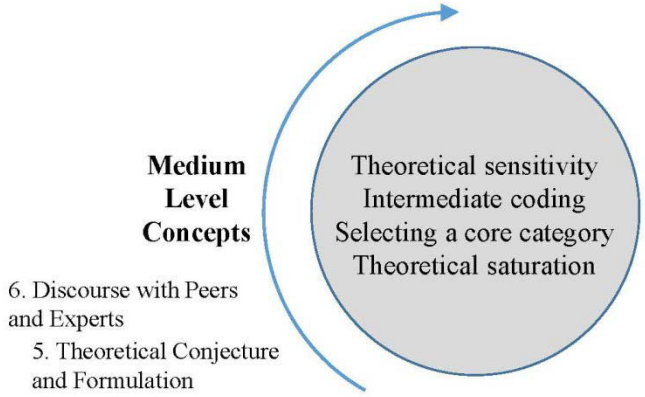

Figure 3. Intermediate Coding: Medium Level Concepts (Adapted from Birks & Mills, 2015)

Theoretical conjecture and formulation (step five). Data gathering for this phase consisted of a literature review of concepts, theorems, definitions, and axioms within the three core disciplines of systems theory, SoS theory, and complex systems theory. Information and feedback were obtained through coursework, discourse with peers and experts, and participation in conference presentations and publications. Data gathering was performed iteratively and concurrently with the intermediate coding of information into categories. The main categories of the intermediate coding that emerged were as follows: systems, purposeful systems, SoS, complex systems, complex adaptive systems (CAS) and CASoS. Figure 4 illustrates the relationships among these categories of systems. Data gathering, coding, and constant comparative analysis resulted in findings associated with the definitions, characteristics, and principles of each of these subclasses of system categories.

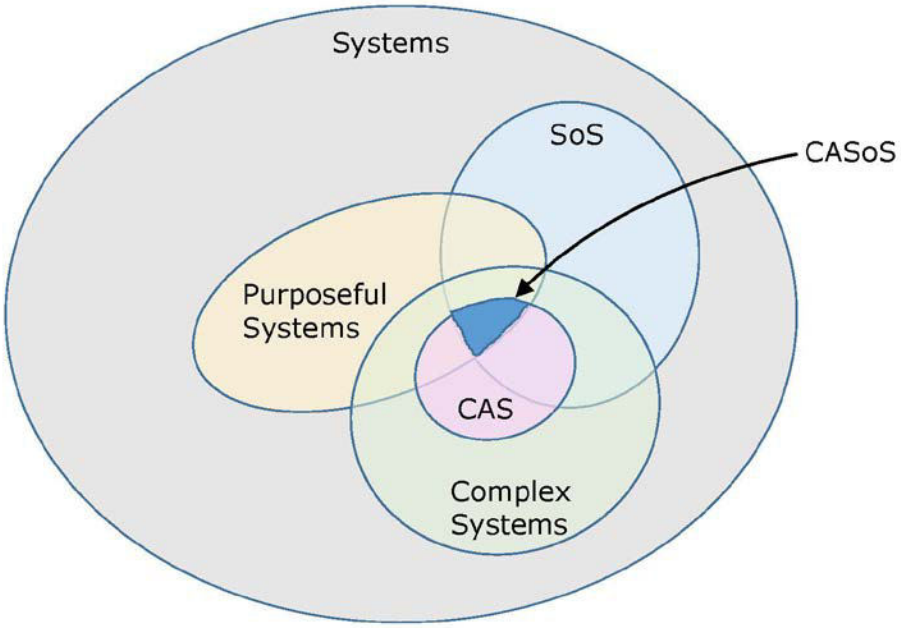

Figure 4. Intermediate Coding Categories

A study of highly complex problem domains produced a characterization of problem spaces based on intermediate coding. A comparative analysis of existing complex domains included problems identified by Bar-Yam (2004b), Glass, et al. (2011), Braha, Minai, and Bar-Yam (2006), Alberts (2001, 2003, 2011), and Harney (2012). This data was coded and compared with data that described characteristics of complex environments (Ames et al., 2011; Calvano & John, 2004; Miller & Page, 2007; Mitchell, 2009; Ottino, 2003; Page, 2011; Stevens, 2008). Data concerning these problems were gathered from the literature review, coursework, and discourse with experts at conferences, which was, in turn, coded and compared.

The process of intermediate coding produced the theory for the CASoS class of engineered system solutions. The theory for the characteristics and principles of CASoS resulted from the identification and comparison of characteristics of systems, SoS, and complex systems from the literature review and data gathered. The process of iterative discourse with advisors and experts produced feedback and refinement of the theory. The theory reached data saturation when additional data only reinforced the theory.

A process of concept synthesis, further discourse, and evaluation clarified the engineering implications of the CASoS theory and formed the basis for the development of the conceptual design of an engineered CASoS solution to highly complex problems. Further reflection and analysis of data led to a derived set of engineered capabilities required to design and build a CASoS. A number of papers were written describing these capabilities. The papers addressed distributed sensors to gain awareness of the environment, as well as an intelligent and adaptive architecture for sharing data and information among a set of distributed intelligent agents that make decisions for constituent system and collective SoS

actions. Feedback from publishing and presenting the papers led to further refinement of required CASoS engineered capabilities.

Discourse with peers and experts (step six). Discourse with peers and experts was a crucial contribution to this study. The exchange of ideas in every step of the research process informed the decisions for how to proceed, provided a wealth of knowledge, and directly influenced the emergent CASoS theory. The following methods were used to gain this discourse: taking courses (Systems of Systems, Complex Systems, and Systemic Strategic Thinking), participating in conferences (Complex Adaptive Systems Symposium, National Fire Control Symposia, Complex Systems Conferences, IEEE Systems Conferences, Military Operations Research Symposium, and the Association of the Advancement of Artificial Intelligence Symposia), and conversing informally with many experts from these groups and with faculty members of the Naval Postgraduate School. In many cases, the discourse led to recommendations for further sources for the literature review. In some cases, the discourse led to decisions, such as the focus of the study, the choice of research method, the choice of the focused use-case application. Discourse also provided invaluable feedback for the CASoS theory and derived engineered capabilities and approach.

Advanced Coding: High-Level Concepts

The final, high-level concept phase consisted of advanced coding and theoretical integration. The research process focused on integrating the coded data and concepts from the intermediate phase into a coherent theory for the new class of CASoS. Figure 5 illustrates this final phase of the research approach. The steps during this phase were as follows: theoretical conjecture, refinement, and acceptance (step 7) and discussion on impact and implications (step 8). Discourse with peers and experts (step 6) occurred during steps 7 and 8.

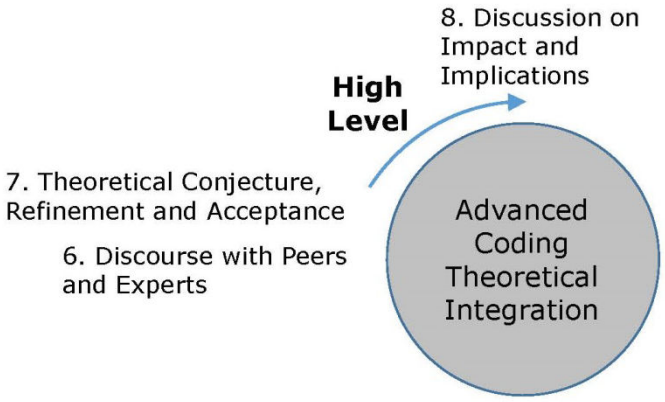

Figure 5. Advanced Coding: High Level Concepts (Adapted from Birks & Mills, 2015)

Theoretical conjecture and refinement and acceptance (step seven). The advanced coding and theoretical integration consolidated the abstract concepts into a final grounded theory for an engineered CASoS. This final coding process allowed the authors to refine the theory based on the process of studying the application of the CASoS solution to

the naval tactical problem domain and further interactions with peers and experts. The grounded theory results from the advanced coding phase that consists of a theoretical conceptualization of CASoS and its interactions with the environment. Feedback from peers and experts was incorporated as amendments and refinements to the theory. This feedback provided greater clarity, completeness, and accuracy to the theoretical concepts. The final form of the theory establishes the characteristics and principles of CASoS as a new class of systems that address highly complex problem domains.

For this study, the process of theoretical conjecture provided an explanatory theory for an engineered CASoS based on the initial and intermediate levels of coding. The development of a conceptual CASoS design for the tactical domain provided a method for understanding how the CASoS approach becomes a workable solution. The solution depended on the derived set of engineered capabilities that must exist (or be required) for an intentionally-designed CASoS to be a viable solution. These capabilities must exist for the engineered solution to attain the needed CASoS characteristics. The naval tactical problem domain served as a use-case to understand how an engineered CASoS warfare solution would improve the Navy's ability to be successful in complex tactical situations.

Discussion on impact and implications (step eight). The final step in the research approach was a study of the theory's impact and implications. A set of capabilities required for an engineered CASoS solution were derived from the CASoS theory. This set of engineered capabilities was applied to the naval tactical use-case as an application of the CASoS theory. This application was accomplished by studying how a CASoS could provide a solution to many of the challenges faced by the Navy in the complex tactical domain. Using the CASoS theory, a conceptual design for an intelligent adaptive architecture for managing distributed warfare assets to address a complex tactical domain was based on the CASoS theory. This conceptual design was used to understand more clearly the potential benefits of this approach within this domain. The implications of this application were further studied by identifying other highly complex problem domains in which a CASoS approach could provide a solution.

Conclusion

A new class of system solutions—CASoS—has been defined and characterized as a theory for an engineering approach to highly complex problems. Such problem domains are on the rise as information and communication technologies continue to advance, causing greater global interaction among systems, entities, and events, which often lead to unpredictable and unintended consequences. The classic grounded theory approach provided a useful method of inquiry for researching several bodies of knowledge to produce a theory for the new class of system solutions. Applying classic grounded theory to systems engineering research allowed the authors to develop a systems theory and provided an engineering approach to addressing highly complex problems. The CASoS theory emerged from several knowledge domains through an iterative process of data gathering, coding, constant comparative method, pattern development and refinement, and discourse and feedback.

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A Grounded Theory on Obtaining Congruence in Decision Making

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Abstract

This paper is a grounded theory on obtaining congruence in decision making. It is a study on how people receive contradictory information, and how they go through the process of deciding which option(s) to select. Sometimes leaders (e.g. officers, managers, etc.) try to engage people in challenging undertakings and present them with goals to follow. Which goals are followed and which are not depends on how they process that information, and what influences their decisions. By better understanding their decision making process, leaders could better learn how to influence people's decisions. Leaders are also sometimes unaware that people often struggle with contradictory choices. The process of obtaining congruence in decision making consists of four stages: struggling, congruencing, deciding, and justifying. The process shows how people resolve cognitive struggles related to contradictive issues. The process is also a complementing theory to other theories on decision making related to psychology, management, and innovation.

Keywords: Congruencing, deciding, justifying, struggling, classic grounded theory

Introduction

In their professions, people have to fulfill certain external expectations. At the same time, they also have a need to fulfill their own internal desires. These external expectations and internal desires can be defined as different objectives, some of which can even be contradictory to each other even if they have a common end goal. To fulfill these objectives, people have to make certain choices (and choose between different options). Those choices depend on their decisions, which make the process one of decision making. However, those decisions depend on finding congruence between their different choices. The main concern of these people in such a situation is to find congruence between certain choices related to their external and internal objectives. If congruence can be found between two or more different choices, then they can all be selected; but if not, then one or some of them need to be prioritized and the others rejected. Thus, the main concern of these people can be resolved by obtaining congruence in the process of decision making.

This grounded theory was discovered in March of 2018, during a special program for participants from the Swedish Armed Forces. A total of 52 officers participated. The lectures were held for eight of them at either the Armed Forces Technical School (FMTS) or the Anti-Aircraft Regiment (Lv.6) in Halmstad, Sweden. For the remaining 41 participants, lectures were held at various regiments and flotillas (air wing, naval station) around Mälardalen, Sweden, including the Air Combat Training School (LSS) in Uppsala, Sweden and the Berga Haninge Garrison (Amf.1) in Stockholm, Sweden. Half of the participants were captains and half were majors. All participants, regardless of rank, were required to write a bachelor thesis as a preparation for the senior officer program (HOP).

After the HOP, a Captain is promoted to the rank of Major or Lieutenant Commander. A Major is promoted to Lieutenant Colonel, and a Lieutenant Commander is promoted to Commander. However, since writing a bachelor thesis was a requirement for starting the HOP, the participants enrolled in this special program which covered one methodology course and one candidate thesis. I was involved as one of the lecturers for the methodology course.

My task as a lecturer was to hold two types of lectures conducted in an integrated way, mixing practice with theory, and following a concentrated/focused schedule. One type of lectures dealt with quantitative research and the other type of lectures dealt with classic grounded theory, where my task was to teach and explain the grounded theory methodology in detail, and to compare it with other qualitative research approaches that, in different ways, were inspired by grounded theory. After each lecture, the 52 participants were asked to write a two-page memorandum. No other instructions were given, and no specific questions were asked. As a result, these participants wrote freely about whatever came to their mind. They wrote about how they experienced these lectures, about how they struggled with different concepts, and about how they came to certain conclusions.

Even after some of my lectures in classic grounded theory, the participants still had some misconceptions about the methodology. One such misconception was that they considered classic grounded theory to take time to complete. This misconception came from different sources. Even from me, because I told them that when I did my first classic grounded theory it took me six months to complete. Another reason was because they believed that it could only be done quickly if you know beforehand what it is that you need to study. Thus, they had an agenda, and starting a study without preconceptions did not fit their agenda, their goals, and requirements. And in this case, some of them wanted to study something that could be related to leadership, since officers in their position are in one way or another interested in leadership. Last but not least, the participants were also reading other methodology books during this program, where other researchers, who (possibly) did not know how classic grounded theory works, argued that the methodology was time consuming.

Thus, while I told them that classic grounded theory did not necessarily have to be time consuming, I did not want to just tell. I also wanted to show them. I also knew that they were writing these two-page PMs after each lecture, and while I was not the one who told them to do it, nor was I required to read them, I thought that maybe I could perform a classic grounded theory analysis on these PMs. After all, the participants were writing them without anyone asking them any "forcing" questions, and I did not have any preconceptions of what their main concern would be. More importantly, if I was successful, I could prove to them that classic grounded theory did not have to be time consuming.

Methodology

This study was performed with 52 participants from the Swedish Armed Forces. I used classic grounded theory in order to discover the main concern of the people.

Data Collection Process

This study is based on Glaser's known dictum that "all is data" (Holton & Walsh, 2017, p. 59). Thus, I collected the two-page PMs that the 52 participants wrote after each lecture

and used it for analysis. I had access to a lot of data, 98 A4-pages for every lecture, and many lectures were given. I also knew that this was much more data then I needed.

Data Analysis Process

Following the tenets of classic grounded theory (Holton & Walsh, 2017; Glaser, 1998, 1992, 1978; Glaser & Strauss, 1967), I began the data analysis process with substantive coding, which started with open coding and continued with selective coding. One of several purposes of coding when doing classic grounded theory is to create abstract concepts, which is very much aligned with human thinking, because much

> of our thinking occurs in the form of propositions, statements that express ideas. All propositions consist of concepts combined in a particular way. For example, 'university students are intelligent people' is a proposition in which the two concepts 'university students' and 'intelligent people' are linked by the verb are. Concepts are [therefore] basic units of semantic memory – mental categories into which we place objects, activities, abstractions . . . and events that have essential features in common. (Holt et al., 2012, p. 342).

After analyzing seven PMs, 16 concepts had emerged. After analyzing another seven PMs, three more concepts had emerged. I continued to analyze more PMs, and when I had analyzed 28 of them, and discovered that no more concepts were emerging after the initial 14, I knew that I had reached saturation. By then, all my concepts were in place and the core variable "obtaining congruence in decision making" had emerged that explained the main concern of these participants. At that time, open coding had ended and selective coding had started.

A switch from open coding to selective coding "allows delimiting the data collection and analysis to just the core category and any potentially related concepts" (Holton & Walsh, 2017, p. 53).

> If a concept, regardless of its novelty or personal preference of the analyst, does not have relevance in relation to the core category, it is dropped from subsequent analysis and theoretical elaboration. In this way the core category becomes a guide to further data collection and theoretical sampling. (Holton & Walsh, 2017, p. 84)

Conceptualization was used to get out of the data and away from full description (Glaser, 2001, 2011). Constant comparison (Glaser, 1965) and theoretical memoing were systematically applied throughout the study and intertwined with theoretical sampling, substantive coding, and theoretical coding. Constant comparison was used to compare incidents (indicators) with each other, and later concepts, and the emerging categories. It was also used for "directing the collection and analysis of data in tandem with theoretical sampling" (Holton & Walsh, 2017, p. 34). Theoretical memoing was done on separate paper sheets in parallel with the data analysis process. Without performing theoretical memoing, theoretical coding would not have been possible to complete.

Once substantive coding was completed, theoretical coding (Glaser, 2005) was started, which "refers to the modeling of the relationships between and among the core category and related concepts as a fully integrated theory. It is the final stage in the coding process" (Holton & Walsh, 2017, p. 86). During the theoretical coding process, the many memos that were collected were also included in the analysis, since they are an

essential part of this process. The final step included the write-up of the paper (Glaser, 2012), during which obtaining congruence in decision making was compared with the literature.

A Theory of Obtaining Congruence in Decision Making

The purpose of performing a classic grounded theory is to discover the main concern of the participants under study. However, the main concern and the core variable are not the same thing. The main concern highlights "the issue or problem that occupies much of the action and attention in the research setting, whereas the core [variable] explains how that concern or problem is managed, processed, or resolved" (Holton & Walsh, 2017, p. 88).

Two congruence-types were discovered during this study, although more could exist under a different context. These two types could also be referred to as properties of obtaining congruence. They were: "goal congruence" and "knowledge congruence." "Goal congruence" is related to people struggling with two of more goal-related choices that are conflicting. They can be related to strategic goals set by leaders (as part of *collective congruencing*) (Lysek, 2016) or personal goals (as part of *self-congruencing*) (Lysek, 2016), if those goals are conflicting. Sometimes managers or leaders also present people with two or more strategic goals, without realizing that those goals are contradictory. Conflicting goals therefore create a struggle between external expectations and an individual's internal desires. Such goals not only lead to struggling but often also to cognitive ambiguity. In order to resolve this struggle, learning new things is often required, e.g. by gaining advice or information before the individual can decide upon a certain choice. "Knowledge congruence" is related to people struggling with two of more knowledge-related choices that are conflicting. Such struggling also lead to cognitive ambiguity. In "knowledge congruence," an individual often struggles with selecting between conflicting knowledge.

The main concern of the 52 officers was to try to resolve their cognitive struggles related to certain issues. The core variable of *obtaining congruence in decision making* goes through four basic social psychological processes: *struggling*, *congruencing*, *deciding*, and *justifying*. These four basic processes explain how people deal with their cognitive struggles related to decision making, and how those struggles are resolved.

And while the process of *obtaining congruence in decision making* seems to be straightforward at first, by going from *struggling* to *congruencing* and then to *deciding* and *justifying*. In reality however, it is an iterative process. Nevertheless, the process always starts with *struggling*.

Struggling

The term *struggling* relates to when people face two or more conflicting options and they cannot select between those options due to lack of knowledge or lack of determination. Or, they cannot acquire any external help, e.g. guidelines, to make such a decision. Struggling can also occur from a conflict between wanting to make your own choices and feeling pressure being required to make other choices than your own.

Struggling also occurs when an individual think that he or she is inexperienced and lacks knowledge; thus, he or she may not want to give certain options a fair chance,

often in fear of failing. Struggling is a consequence of having more than one option to choose from that seem equal to each other, instead of having a single dominating option.

Struggling and *learning* affect each other because struggling can cause an individual to increase learning while learning can decrease struggling. Thus, *struggling* and *learning* also belong to the interactive family. However, learning can also lead to a certain amount of *misinforming*, which, in turn, can cause an increase in *struggling*. Lack of understanding or conflicted knowledge can also cause an increase in *struggling*. Thus, the more the individual struggles, the more he or she feels confused.

Nevertheless, learning often helps resolve the struggle in one way or another; it does not matter if it leads to *misinforming* or not because even misinformation can convince an individual that he/she is right. This decision, therefore, lead to *self-reassuring* and *deciding*.

Ambiguity in decision making. Cognitive ambiguity as well as confusion occur due to struggling when an individual has two or more conflicting options from which to choose and does not know which would be better suited to his or her needs. Cognitive ambiguity occurs when there is conflicting information about these options, and no way to know if one is better than the other. The individual feels confused not knowing what to believe. Many times, options are subjective. The confusion that comes from not having enough knowledge or experience in making a suitable choice. Selecting the right option requires patience and learning. While struggling can be resolved through learning, learning can also lead to more confusion and ambiguity when affected by misinforming. The more an individual feel confused, the more he or she struggles.

Congruencing

Congruencing is necessary to resolve a cognitive struggle. However, before congruency can be obtained between two (or more) conflicting issues, an individual first needs to resolve the cognitive ambiguity that is the consequence of these conflicting issues. Thus, the individual often turns to *learning* in order to resolve such a cognitive struggle. And while gaining new knowledge and understanding from external sources helps with *congruencing*, congruencing in itself, is a purely internal process. After *congruencing*, the individual often reaches self-reassuring, but sometimes also self-convincing, and then continues on to *deciding* in order to finally resolve the cognitive struggle.

Two types of *congruencing* were discovered. These two types could also be referred to as properties of this sub-category. They were: *rational congruencing* and *emotional congruencing*. Rational congruencing relates to logical choices made, which include patterns of behavior such as *learning* and *misinforming*, which are explained later in this section. In turn, they often lead to *self-reassuring*. *Emotional congruencing* relates to emotional choices made, which include patterns of behavior such as *emotional captivating*, explained in a later section. *Rational congruencing* and *emotional congruencing* affect the results of *congruencing*.

And while *congruencing* usually starts with *rational congruencing*, it often triggers *emotional congruencing*, and then the two are processed in parallel. Thus, they both need to be processed before *congruencing* can be reached, and before moving on to *deciding* and *justifying*.

Self-reassuring

While *learning* and *misinforming* often become guiding, they also often lead to *self-reassuring*. *Self-reassuring* comes from individuals feeling that they understand (or they believe they understand) a certain issue better and that this choice is a good one, or even the best one for them to take. *Self-reassuring* is affected by either *learning*, or by *misinforming* when it is disguised as learning. It is usually affected by logical and rational thinking but can also be affected by emotions. *Self-reassuring* can lead to excitement, but also to annoyance. *Self-reassuring* is often an effect of maturity and growth for the individual. *Self-reassuring* can also affect *emotional captivating*, which in turn can affect *rejecting*, *partial selecting*, or *selecting*.

Self-convincing

Some choices may also be scary, like giving up control, which often lead to fear (of the unknown) and to more cognitive ambiguity. And when people try to resolve the ambiguity too quickly, they sometimes turn to their own preconceptions and try to force themselves to resolve the cognitive struggle--especially when it feels like a certain choice only leads to a dead-end and selecting a different option may seem better. While it may sometimes work out, *self-convincing* in this way often does not succeed and leads to misinformation instead.

Deciding

In the end, once all the struggling dissipates and congruence is reached, a concrete decision needs to be made. However, whatever choice an individual makes during *congruencing*, the choice is either guided by *learning* or *misinforming* (*rational congruencing*), and it is also affected by *emotional captivating* (*emotional congruencing*). Nevertheless, the process of *deciding* involves patterns of behavior such as *selecting*, *partial selecting*, and *rejecting*.

The choice that a person makes may also seem adamant at times, but it is never set in stone. It can always be changed by either increasing learning or decreasing misinforming.

Once *deciding* has been completed however, the struggle that was caused by having conflicting options finally becomes resolved. People however, often also need to justify their choices. Thus, the next step in the process is *justifying*.

Selecting

Selecting is related to selecting a specific issue in favor of another. *Selecting* often occurs when an individual has support for the selected choice from others and from him or herself. In other words, *selecting* depends on (rational and emotional) *congruencing*.

Partial Selecting

Sometimes, when a specific decision leads to rejecting a certain issue, parts of that issue may still be selected. For example, if the issue is related to rejecting a certain methodological approach, some components of that methodology may still be selected (for example when some people chose certain parts from classic grounded theory, without following the tenets of classic grounded theory). This idea is called *partial selecting*.

Rejecting

Rejecting is related to not selecting a specific issue. *Rejecting* often occurs when an individual does not have support for the selected choice from others, or when he or she does not believe in the choice. *Rejecting* sometimes depends on a failing with *learning* and may be a consequence of *misinforming*.

Justifying

Decisions made often require justification, where people feel that they need to explain their choices. These decisions are sometimes based on rational or emotional arguments. In both cases, they are based on careful consideration. Sometimes they even act as excuses. Justifications always occur after a choice has already been made. Many types of justifying exist; only some of them are presented here. Thus, the process of justifying sometimes involve patterns of behavior such as *obvious benefitting*, *incongruencing*, *deliberate delaying*, or *distrusting*. The category of *justifying* is also the last step of obtaining congruence in decision making.

Obvious Benefitting

Obvious benefitting is an example of a justification to explain why a certain issue was selected. Sometimes, by arguing, there are obvious benefits to gain, either directly (right away) or indirectly (later or in the future).

Incongruencing

Incongruencing is an example of an excuse to justify why a certain issue was not selected. It focuses on pointing out issues that are mismatching with the individual's goals. Sometimes the argument is justified, but sometimes it is the result of *misinforming*.

Deliberate Delaying

Deliberate delaying is an example of an excuse used as justification to explain why a certain issue has not been selected. It is related to making an excuse for not making a certain choice by arguing that the option to make that choice was received too late. If the choice had been given earlier, then it might have been selected. However, by using *deliberate delaying*, people argue that their process has already come too far, that certain choices have already been made, and it is therefore not possible to go back to make other choices instead. *Deliberate delaying* is therefore sometimes a result of *misinforming*.

Distrusting

Distrusting is an example of an excuse used to justify why a certain issue was not selected. *Distrusting* occurs when individuals are skeptical towards a certain issue, such as certain knowledge. Sometimes it is justified, but sometimes it is the result of *misinforming*.

External Forces affecting Decision Making

While gaining new knowledge and understanding is part of an internal cognitive process, and part of *congruencing*, learning itself is gained from external sources and is

therefore part of the external forces that affect decision making processes. Learning can come from external knowledge, but also from advice from others. Learning is thus not a part of the sub-core variables of *obtaining congruence* in decision making, which captures internal processes. Learning can however, affect rational and emotional congruencing, as well as the process of decision making. Emotional captivating is also part of an external force that affects the cognitive process of obtaining congruence in decision making.

Learning

Learning is not just theoretical but also practical. Many times, certain issues can only be learned well by doing them (like classic grounded theory). Learning is seen from a broad aspect and includes learning from books as well as from discussions with other people. Learning sometimes leads to courage because the more an individual learns, the more courage he or she gains to take on more difficult issues. Learning also sometimes leads to guiding, and it acts as strategies regarding what choices to make. People seek guidance when they are unsure of what options to take. Guidance also leads to self-reassuring. An example of such guidance that people sometimes seek is structure and control, because the lack of it can lead to cognitive ambiguity, confusion, and fear. Learning can also occur under uncertainty (Lopes, 2010).

Learning is not always recommended by others, which can lead back to struggling. However, more often than not, learning helps a person to understand new things, to reason about conflicting issues in a logical manner; it leads to self-reassurance. It also makes the individual reflect on what he or she is actually learning and allows for new thought patterns to evolve. While learning leads to better understanding, it can also lead a person to take a step backwards and make certain corrections in perceptions to move forward again. Learning affects struggling as well as self-reassuring, which makes it belong to the causal-consequence model. While learning and struggling affect each other in a positive direction, learning is also related to misinforming. In turn, misinforming can lead to cognitive ambiguity, which leads to more struggling. Thus, as a result, misinforming and struggling affect each other in a negative direction.

Misinforming

Misinforming is related to learning whereas knowledge learned is incomplete or partly or fully incorrect. However, it is always misleading. Misinforming is a consequence of not being aware of having misconceptions or misunderstandings. Fear can sometimes lead to misinforming, especially if that fear is faulty. For example, fear that certain goals cannot be reached; that some option can lead to undesirable results; or that the lack of knowledge or experience will limit the individual's ability to obtain desired results are examples.

Misinforming sometimes also leads to guiding an individual in the wrong cognitive direction. Thus, it acts as guidelines regarding what choices to make, but compared to learning, misinforming is always misleading. People may thus be misled intentionally or unintentionally. However, more often than not, people do not know if they are affected by learning or by misinforming. Even if they are misled, they perceive their knowledge to be correct. Perhaps there is no such thing as correct or incorrect knowledge, just more or less adequate knowledge for the situation at hand? Nevertheless, while learning allows people to see possibilities, misinforming often hampers those possibilities instead.

Learning and misinforming can affect each other, since it is not always possible to tell when certain knowledge and information is correct or not. Thus, it makes learning and misinforming belong to the interactive family.

Emotional Captivating

Emotional captivating measures how much people finds something that they learn about to their liking. *Emotional captivating* belongs to the degree family (Glaser, 1978) since it can be measures from *off-putting* to *appealing* to *captivating*. *Emotional captivating* is therefore about gaining external knowledge. That knowledge can be either *off-putting*, *appealing* or *captivating*. Therefore, these properties of *emotional captivating*, and of *learning* in itself, are not something that is part of the *obtaining congruence in decision making* process. Learning therefore represents an external force that affects the cognitive process of *obtaining congruence in decision making*.

Appealing is related to issues that people find emotionally appealing. Anything that has an appealing effect on an individual would fit into this category. Related to *goal congruence*, some goals might feel more appealing than others. Related to *knowledge congruence*, some knowledge might feel more appealing than others. However, most of the time, just because something feels appealing does not mean that the person will prioritize captivating before off-putting, or vice versa. Appealing may affect self-reassuring if something else that is captivating is not found to take its place. It might also be true that if appealing exists then the opposite, disliking, also exists. However, disliking as a concept was never found in the data, and has therefore, according to the tenets of classic GT (Glaser, 1992), not been added as a category.

Captivating is related to people finding an issue very interesting, especially emotionally, and to a much higher degree than just appealing. To the degree that it causes the individual to choose a certain issue or goal before another. An individual may become captivated when the issue at hand is strong enough to convince or persuade him or her to select it instead of something else. Such captivation makes *deciding* during the next step much easier. If some option is found captivating, then it will strongly affect congruencing, and influence *self-reassuring*. At this point, it will quickly lead to *deciding*. Captivating sometimes also requires courage.

Off-putting is related to people finding an issue emotionally appealing, but not strongly enough to select it instead of something else. For one reason or another, an individual may choose to off put an issue when another seems to be more to his or her liking.

Appealing can also affect partial selecting, while captivating can affect selecting. Off-putting however, affects rejecting and partial selecting. All of them therefore belong to the causal-consequence model (Glaser, 1978). Learning is therefore an external force that can substantially affect the process of *obtaining congruence in decision making*. The only question is, in what direction since learning can easily be confused with misleading.

Theoretical Coding

In the previous sections of this article, the author described the sub-core and sub-sub-core variables of *obtaining congruence in decision making*. In this section however, the author will focus on how these variables relate to each other from the perspective of the theoretical coding families (Glaser, 1978). During this process, the memos that were written from the very start, were compared to the theoretical coding families, and analyzed together with the different categories. Thus, without memos this process could not be have been completed.

Rational congruencing and *emotional congruencing* affect each other, as individuals often move back and forth between them; they therefore belong to the interactive family (Glaser, 1978). Emotional captivating however represents different degrees of how much an individual is affected by something. Emotional captivating therefore belongs to the degree family (Glaser, 1978).

Whether an individual decides to choose selecting, partial selecting, or rejecting depends on how much he or she is affected by the congruencing process (rational and emotional congruencing). The congruencing process however, is also largely affected by learning. It is therefore possible to influence which choice an individual makes by either increasing learning or decreasing misinforming. Learning, as part of congruencing, is of key importance for the process of *obtaining congruence in decision making*.

Last but not least, *obtaining congruence in decision making* can be seen as belonging to the process family and the interactive family (Glaser, 1978). By moving back and forth between its different sub-core variables, especially between rational and emotional congruencing, *obtaining congruence in decision making* is a part of the interactive family. Nevertheless, *obtaining congruence in decision making* is still a process that starts in one end and moves forward towards the other end, which makes it part of the process family (Glaser, 1978). Most importantly, it also belongs to the mainline family (Glaser, 1978), as a *cognitive status passage*. While status passage is about "moving people along and getting them through" (Glaser, 1978, p. 77), obtaining congruence uses the same concept but mainly on a cognitive level. People have to move along and get through the different stages of this core variable in order to come to certain conclusions and make certain decisions--especially since *rational congruencing* contains elements of interaction between people (for example during learning when people interact with each other). However, the struggles that individuals experience occur on a cognitive level, and the following categories also occur on a cognitive level. Obtaining congruence therefore belongs to the *cognitive status passage* coding family, which is related to *status passage* (Glaser, 1978).

In other words, *obtaining congruence in decision making* starts with *struggling*, where a cognitive struggle between conflicting issues occurs. What is needed is reaching a congruence. Thus, the process continues with *congruencing*. Here, increasing knowledge through *learning* and sometimes *misinforming* leads towards resolving the cognitive conflict. Emotions also come into play when decisions are influenced by what the individual thinks is *appealing*, *captivating* or *off-putting* (see *emotional captivating*). Therefore, in order to resolve their cognitive struggle, people move between these patterns of behavior until they reach a congruence. Afterwards, they move on to *self-reassuring*. Once they have reassured themselves of what would be their best choice, they move on to *deciding*, at which point the cognitive struggle between their conflicting

issues becomes resolved. Finally, once they have decided upon a specific decision or choice, they move on to *justifying* what they have decided to do.

Obtaining congruence in decision making is therefore a basic social psychological process that explains how people come to choose between different, and often contradictory, choices. It is also an iterative process that requires going back and forth between its four sub-core variables: *struggling*, *congruencing*, *deciding*, and *justifying*.

Discussion

This paper represents the first iteration of the theory of *obtaining congruence in decision making.* Glaser (1978), as well as Holton and Walsh (2017), recommended that certain criteria are followed in order to confirm a core variable like this one. These criteria are centrality, frequency, relevance, grab, and variability (Holton & Walsh, 2017).

When the core variable was presented to the 52 participants from the Swedish Armed Forces, they said that they had not been aware of it before, but now that it was presented to them, they recognized that they had been doing this all along. They also said that they could see other people in many other professions or situations going through the same process. Whenever people face different and conflicting options, and they need to decide on which to choose without knowing which one is best. Then they find themselves going through the process of obtaining congruence. From this perspective, the core variable fulfils the criteria of centrality and frequency. It also relates meaningfully to its different categories and explains how the participants' main concern it resolved. And even if conditions in different situations may "vary, the essential meaning remains constant" (Holton & Walsh, 2017, p. 89).

Thus, *obtaining congruence in decision making* is a process that explains how people come to select between different conflicting issues and how they make certain decisions. It is a basic social psychological process that is central for decision making.

Literature related to Grounded Theory

Decision making can be applied to different situations and under different context. Holmberg and Wahlberg (2000) presented a grounded theory paper on the process of decision making related to abortion. Since the authors did not mention memoing or theoretical coding, I would argue that the paper is inspired by grounded theory rather than the tenets of classic grounded theory. Nevertheless, Holmberg and Wahlberg's theory differs from *obtaining congruence in decision making* by not necessarily incorporating learning. Their theory presents how individuals react to something that has occurred, and what choices people make based on certain impact factors. They also discuss processing as well as coping. The theory of *obtaining congruence in decision making* however, is the process of how individuals react when given certain goals to choose from, and what choices they make based on congruencing (learning and misinforming). The two categories reactions and *impact factors* in Holmberg and Wahlberg' theory (2000) can be related to *emotional congruencing*.

Another study on decision making was conducted by Lee and Zvonkovic (2014). These authors were also influenced by grounded theory without following the tenets of classic grounded theory because decision making was the main concern of the two researchers and not the main concern of the participants. Nevertheless, in their theory about decision making, Lee and Zvonkovic presented three main categories: *agreement*,

acceptance, and *closing of the door*. *Agreement* is about discussing with others and can be related to *learning*. *Acceptance* can be related to *emotional congruencing*, and *closing of the door* can be related to *deciding*. However, in other aspects, *obtaining congruence in decision making* differs from Lee and Zvonkovic's theory and can therefore be seen as complementary to their theory.

Douglas (2006) on the other hand, performed a grounded theory study that focused on employees' perspectives and managers' perspectives on decision making within a company. His theory was however unrelated to the theory presented here because it related to decisions and interactions between managers and employees on a company level; *obtaining congruence in decision making* focuses on individual decisions made on a cognitive level.

Obtaining congruence in decision making, and the category *congruencing*, can also be related to Lysek's (2016) classic grounded theory on *collective inclusioning*. Lysek's category *goal congruencing* "has two main patterns of behavior: collective congruencing and self-congruencing. Sometimes they overlap, as they can both be personal and shared by the whole company" (p. 32). However, while *goal congruencing* focuses on how people reach congruency related to either collective or personal goals at the company level, *congruencing* in this grounded theory study focuses on individual decisions made on a cognitive level.

Christiansen´s (2006) grounded theory of opportunizing has a category of "weighing up", which is related to decision-making. It is therefore also related to *obtaining congruence in decision making*. However, *weighing up* focuses on how managers chose between different things to do from a practical and company level, while obtaining congruence focuses on resolving struggles caused by conflicting choices on a cognitive level. Obtaining congruence is therefore only a process that occurs in the mind of people, and how they come to make certain choices; it is not about the physical act of doing whatever they may have decided to do. The same can be said about Lindh's (2011) grounded theory of *reciprocal engagement* (Lindh, 2011) which also relies on *opportunizing* (Christiansen, 2006).

Literature related to Psychology

When people evaluate problems and make decisions, at times they abandon logical reasoning in favor of their own emotions. They trust their gut feelings. And at other times, even if they try to reason logically, emotions still creep in unaware (Holt et al., 2012).

Some researchers therefore believed that our decisions are emotional rather than logical (Camp, 2016). Thus, *obtaining congruence in decision making* concurs with that statement, especially when it comes to *emotional congruencing*. What "feels" to be a correct decision therefore plays an important role in the process of obtaining congruence.

Literature related to Management and Innovation

While not all leaders have to make decisions, some do and on a regular basis. According to Einsiedel, Jr. (1983), such leaders (or managers), have a lot of responsibility, as they have to make decisions regarding everything from corporate goals and objectives to hiring new employees, terminating employees, budgets, purchases, public relations, innovation, and much more. As a consequence, their decisions often

affect many people; the stress involved in making such decisions is often very high. Sometimes they have to make decisions that are problematic (for example, when selecting between an unpopular decision on one hand, and an incorrect but popular decision on the other) (Einsiedel Jr., 1983). Such decisions can be related to *obtaining congruence in decision making*. Choosing between a popular and an unpopular decision is a cognitive struggle that can be related to obtaining congruence. However, Einsiedel, Jr. (1983) also discussed the consequences of certain decisions, while this theory mainly focuses on the process.

Weick (1995) also studied decision making in organizations but from a sensemaking perspective and argued that people can only know what they are doing after they have done it. This statement can also be related to *obtaining congruence in decision making* because the sub-core variable *justifying* is found at the end of this process. As such, it indicates that individuals have already made up their mind; they have already made their decision when they become ready to justify why they have made that decision in the first place--the reason why *justifying* is at the end of this process. However, having *justifying* at the end does not hinder the process of *obtaining congruence in decision making* from moving back to the beginning when for example more learning is required, which occurs when individuals reevaluate their earlier decisions.

Obtaining Congruence in Decision Making as a Transcending Theory

The theory of *obtaining congruence in decision making* is transcending because it can be applied to different substantive areas, beyond the educational context of the 52 participants from the Swedish Armed Forces. It can be used by any type of leaders or managers who either design goals for people to follow or want to educate people while giving them a broad spectrum of knowledge.

Managers sometimes provide their employees with different and often contradictive objectives without realizing it. Thus, these mixed signals hinder employees from reaching congruency. And since managers are unaware of this fact, they believe that when they present a goal to their employees, this goal is uniform. Thus, when a goal is presented in different ways, the message can lead to cognitive ambiguity. And while managers behave in this manner unintentionally, they turn a uniform goal into a cognitive struggle where people need to choose between contradictive options or situations. However, to resolve this problem, people are required to go through the process of obtaining congruence.

This process may occur, for example, when people see growth and innovation as the same thing when they are not (Morris, 2011), or when people confuse incremental improvements with innovation. All the while, managers and employees are not exposed to enough learning to diminish the amount of misinforming that causes a struggle between such contradictive goals. Thus, learning as well as misinforming affect employees' decision on what they should do. And, as a result of their struggle, when facing two or more contradictive goals, employees sometimes chose putting off some of these goals even if they find it appealing. And they decide on selecting the remaining goal (or sometimes only partial selecting it) while rejecting the other. Thereafter, they create justifications that sound rational and logic to suit their decision making.

Therefore, to change employees' decision-making choices, managers have to put more effort into the focus of learning to decrease their own and their employees' level of misinforming. Managers also have to realize that an end goal, as seen from the

perspective of external expectations and internal desires that affect their employees, can offer be interpreted as contradictory. Increasing learning and better understanding how to obtain congruence can thus help their employees to resolve their cognitive struggles.

Conclusion

Leaders (e.g. officers, managers, etc.) sometimes present people with not just one goal, but two or more goals that can be contradictory. More often than not, these leaders are unaware of that fact. For example, the 52 participants from the Swedish Armed Forces were given two goals: one to complete a bachelor thesis based on certain requirements, and the other to complete a methodology course necessary to complete their bachelor thesis. When these participants learned about classic grounded theory, they realized that their thesis requirements were contradictory to the grounded theory research design. As a result, they were presented with two different goals that became contradictory. From this study, the grounded theory on *obtaining congruence in decision making* emerged.

Therefore, as people in different professions have to fulfill various external expectations, they also have a need to fulfill their own internal desires. These external expectations and internal desires are sometimes contradictory with each other even if they have a common end goal. Thus, people go through the process of *obtaining congruence in decision making* in order to resolve their main concern, which is to find congruence between different choices related to their external and internal objectives. If congruence can be found between two or more different choices, then they can all be selected. If not, then one of them need to be prioritized and the others rejected.

The theory of *obtaining congruence in decision* making is a basic social psychological process that explains how individuals resolve their cognitive struggles when facing two or more contradictive options or issues. *Obtaining congruence in decision making* goes from *struggling* to *congruencing* and then to *deciding* and *justifying* throughout this process. In so doing, the theory explains how people's choices in their decision-making process can be influenced or even changed by increasing *learning* or decreasing *misinforming*: two external forces that affect the cognitive process of obtaining congruence in decision making. Obtaining congruence therefore contributes to the existing literature on decision making, but also to decision making in psychology, management, and innovation.

A possible limitation of this study is that it focuses on the cognitive process of decision making and outlines the four sub-core variables involved in this process, but it does not describe very much about how people restart this process after a decision has already been made. It only mentions that the process can be restarted when people discover new knowledge, but not how (from a process perspective) their previous decisions are changed when this happens. That could therefore be a possible future study.

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belonged to the mainline – status passage coding family, which led me to define cognitive status passage as a coding family. Last but not least, I would like to thank Andy Lowe for his invaluable advice.

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Reflections on being an expert

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Abstract

In this essay, the author explores the journey of undertaking a Grounded Theory (GT) research project on a topical area closely aligned with her profession, although on a specific aspect about which little was known. By following the data as directed in GT, the area under study became one in which the researcher was more of an expert. How this shift from "little known" to "expert area" occurred and the challenges relative to overcoming the researcher's anxiety associated with this shift are two themes explored. The researcher's conclusion is that expert knowledge enabled nuances to be seen that may otherwise have been missed, but that having expert knowledge necessitated greater attention to ensuring sensitisation, not preconception.

Keywords: reflections, expert, classic grounded theory, abortion, grief

Classic Grounded Theory (GT) is best undertaken on a subject about which a researcher knows little, leaving him or her open to new discoveries untainted by prior knowledge or expectations (Glaser, 2013). As a novice researcher dedicated to learning GT, I took this directive very seriously to ensure my methodology was sound.

As someone who is an avid reader, passionate about the lives and experiences of women in the world, I had quickly become enamoured with the writings of Brené Brown (2012, 2015). On discovering that her understandings of people's inner experiences were founded in GT, my interest in this methodology began. As a counsellor and educator of more than 25 years, I am intrigued by the unique trajectories of people's lives and the common themes among them. I believed there was yet to be discovered depth that united people and I sought to discover such shared experiences. GT essentially fit my need to know more information. To this end, my initial foray into PhD research was in an area unrelated to my work, but one in which I was very interested, adoption. The study received approval however in spite of many attempts in which I failed effectively to recruit; the initial study was abandoned. During this time however, my learning of GT for the purpose of embarking on a first study made me more determined that this methodology of choice would suit whatever my next research focus became.

Pursuing my PhD changed focus and became a step toward adding credibility to my work in a highly ideological and polarising field of educating about the adverse impact of abortion wherein I have fast become considered an expert. However, my expert status seemed not to reconcile with GT as an appropriate methodology given the

recommendation that GT is best suited to a topic about which the researcher knows little.

One aspect of my work has been the development of education and resources for practitioners who deal with women experiencing challenging circumstances during pregnancy and who have adversely suffered after abortion; the objective is for the practitioners to be able more effectively to support these grieving women after a termination. While almost 300 professionals have accessed this education, I remained unaware of whether it had positively influenced practise.

Therefore, the aim of this PhD research was to identify gaps in practitioner knowledge and practise, and determine how these gaps may impact their interactions with women. The end goal was being to inform the development of more effective educational resources based on knowledge gaps. After embarking on my first interview with the ethics approved interview questions in hand, and my own broad opening question ready to take centre stage, I could not have anticipated where the data was about to lead me.

Participants had been provided with a participant information sheet and consent form, which detailed the specific topic area of pregnancy termination, so they were, in a sense, pre-conditioned about how to respond. When asked simply *Can you tell me about your current practise with women who might mention pregnancy termination?*, the responses were quick to follow. This was a subject on which practitioners had very specific things to say and they wanted to share them. "Eliciting a spill" (Nathaniel, 2008, p. 61) was not an issue as my interviewees quickly identified their main concerns.

The absence of knowledge content in the data eluded me until I was into the third interview and realised I was struggling with moving beyond descriptive words in my coding. In my mind, I was still trying to link the data I was coding to knowledge in some way without realising it. When a practitioner was *withholding* or *glossing over* certain information, the constant comparison process had me linking them to *not enough education* or *they don't tell us about this*. Something about this connection wasn't feeling right and I thought I wasn't understanding the process. As it became apparent that *withholding information* was a better fit than *it's risky to talk about that*, I began to experience some anxiety.

The ideological polarisation within my field of work was something I wanted to avoid with the focus of my questions, yet the data indicated that ideology, not knowledge, was the primary concern identified by practitioners. This shift to ideology created personal anxiety over the data as I realised that what I was seeing was not new to me and I didn't want to go there. Simmons (2010) addressed the need to let go of ideological or political beliefs in order to follow the data. My issue was not in the letting go of them, but in wanting to find a theory within a political/ideological field that was neither political nor ideological, thereby avoiding the ideological nature of abortion discussions. This quote from a student of Simmons, "I fought hard because I didn't want to go there, but I finally went where the data led me" (Simmons, 2010, p. 18), reflected this period of time for me.

It was here that the double-edged sword of my experience became most apparent. Aware of my extensive knowledge of the ground on which I was now treading, I was hyper vigilant about my own filters in analysis and often found myself

battling concerns that I would indeed be accused of "making it all up" (Simmons, 2010, p. 15). My data was cross checked repeatedly by a supervisor, and discussions with my mentor were essential to ease my angst regarding my ability to effectively code the data in a way that avoided preconception based on my own experience and knowledge of the field. As I recognised more of my own experience in what the practitioners were telling me, and recollected so many other instances of similar experiences being described in my professional settings, many pieces began to fall into place.

In accord with Glaser's (1998) approach, I conducted a self-interview and added my field notes to the data to be coded and analysed accordingly. The analysis of the self-interview brought with it some relief as the coding of my own data was consistent with the data I had already analysed. However, while it added more incidents to existing categories and properties, there was nothing new.

It became clear that practitioners' interactions with clients were a direct result of the influences to which they were subject; and, they were able to identify many of these influences from within the dominant discourse of abortion. I had spent a decade being critical of in its, and its active silencing of the negative ways in which many women experienced abortion. While my own work was heavily censored and marginalised by advocates of the dominant discourse, I didn't yet understand either its power or consequences. I certainly lacked awareness of the pervasiveness of the dominant messaging or how powerful it was in its ability to censor and to silence. I had lamented my own inability to gain traction in mainstream media and had dealt with significant hostility and censoring from ideological advocates unhappy with my approach. However, I had attributed the inability of my work to gain mainstream attention to my work that to my lack of marketing skills and contacts.

As the theory developed, the professional challenges I faced at this time were significant, as my awareness of all the ways in which I had tackled issues of education, of supporting women, and of managing the dominant discourse seemed ineffective. My desire to educate practitioners into being more knowledgeable and therefore supportive of women was founded on false assumptions that education was all that was necessary. The discourse was more powerful and more pervasive than I had imagined. It was also more dangerous to my research than I had anticipated. I spent many months being paralysed and wishing I'd never begun. In this way, my experience in the field, combined with the exhaustive mental processing in ensuring such experience was sensitising me to the data rather than preconceiving it, created much delay.

As I began tentatively talking to colleagues about what I was discovering and incorporating some of my newfound language into my presentations, I was encouraged by the feedback. I noted many *aha* moments when people commented *I never looked at it like that before* or *wow that's brilliant*. My supervisor, who has had many years of experience as a researcher in my area of study, talked about how powerful my theory was saying "nobody has ever seen it in this way before" and my GT mentor agreed my theory worked and was good.

In spite of this encouragement, it has taken a year of delay while I developed enough confidence in my theory and willingness to state it in order to experience progress in my writing. A passage from Glaser (2013) often paralysed me:

> Experts in a field find it easy to say a category emerged or a TC emerged which is really just a product of their advanced training. They will claim preconceptively that their exquisitely tuned capacity guided them where to look to get the best categories and TCs. It is claimed as an undeniable asset that makes them open to learned and experienced preconceptions. In sum, highly trained people well formed in their field find it hard to transcend their experienced view. They see it everywhere rather than staying open, however much they pretend to be open. (pp. 21-22).

Now that I understand the extent and power that my data has revealed, I am super-sensitised and see it everywhere. However, there is no question for me that without the expertise I have in this area, I may not have seen the data for what it was. Being an expert, and having my own experiences of what practitioners described, were essential to my ability to see the data. In the end, it was the fact that I was able to follow the data to where it led, even when I was uncertain and anxious, that gave me the greatest confidence in the theory. It is unlikely I would have been sensitised to the subtlety of influence that practitioners were describing without it; and, I would have pursued my knowledge enquiries as silenced and unaware of the discourse as many of my practitioners were. I may not have been able to see how things are, or the significant influence the discourse had on me and I would have continued the cycle of perpetuation.

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An Exploration of Key Issues in the Debate Between Classic and Constructivist Grounded Theory

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Abstract

In this paper, the debates and discourse between Classic GT or Constructivist GT are explored. The aim of this paper is to evaluate the various claims in a critical manner by revisiting the original discourse outlining these approaches. The importance of maintaining a reflective, neutral stance while examining the arguments and evidence for the claims on both sides of this debate is emphasized. In the final analysis, the view taken by these researchers was that valid arguments could be made to support Classic and Constructive GT approaches. The rationale for choosing a Classic GT methodology is outlined. Guidelines to support novice researchers in their task of choosing the most appropriate GT approach are suggested.

Keywords: classic grounded theory, constructivist grounded theory, literature review, participant voice, epistemological assumptions

GT was first described in 1967 by Glaser and Strauss and continues to be an evolving methodology with a number of iterations, ongoing debates, discussion and controversies with many researchers strongly identifying with one or other side in these debates (Glaser & Strauss, 1967). This paper will focus on the debates between Classic and Constructivist GT.

A challenge for novice researchers attempting to distinguish between approaches in GT is that the research designs share many core features and procedures (Bryant & Charmaz, 2007). While proponents of each approach emphasize their differences, the significance of these differences are often unclear to the GT novice. On first examination, it is difficult to identify the differences in the research process as the same terminology can be used to describe different processes or indeed the same process. These issues are additionally confusing for a novice researcher as it is difficult to gain initial clarity on the importance of the various differences when comparing approaches.

A second challenge for the novice is the tendency for authors on either side of these debates to adopt polarized positions. There is a natural tendency in these debates for each side to emphasize their differences and the unique offerings of their approach while minimising the shared similarities. It can be difficult for a novice, who is unfamiliar with the area and in search of certainty, to retain a neutral stance and resist being swayed by the passion of the arguments rather than their rationale and content. The

need for each researcher to appraise the arguments critically within the context of their own research aims is crucial.

A challenge for the novice is the way in which "competing" authors represent the opposing proponent's writings. Novice researchers must be careful not to accept these views uncritically. One example from this author's experience was the example of Charmaz's (2008) claim when referring to Glaser's (1978) book *Theoretical Sensitivity* suggesting that "the abstract terms and dense writing Glaser employed rendered the book inaccessible to many readers" (p. 513). A reading of this book found that this claim was not supported as the terms used in the writing were clear and the writings was found to be logical, clear, and accessible.

While various authors used arguments from their proponents' work to support their arguments, the researcher notes that quotes were occasionally taken out of context or did not reflect the full complexity of the original author's thinking or certain researcher's interpretation of the author's position. Such observations emphasized the importance of critical appraisal of all sides of this debate and the importance of reading original writings rather than relying on the interpretations of others on them.

For a novice, who is seeking clarity, it is tempting to adopt one approach above the other quickly and accept all arguments in favour of that approach as his or her own. Managing the tension between the need to read and reflect deeply on the methodology and the time pressure inherent in the research process may result in researchers feeling under time pressure, and making uninformed decisions in favour of one approach over another. Fernandez (2012) cautioned that researchers who do not attain a wider understanding of the epistemological assumptions of their approach are more likely to be confused about their basic assumptions and develop a poor research design that may subject to internal inconsistencies. Moreover, it is also argued that a deeper understanding of GT methodology enables a researcher to be more flexible in his or her use of the method while maintaining a consistent and cohesive research process.

In this paper, the debates and discourse between Classic GT and Constructivist GT will be explored. The authors in this paper aim to evaluate the various claims and counter claims in a critical manner and revisit the original discourse outlining these methods. The authors take a reflective, neutral stance while examining the arguments and evidence for the claims on both sides of this debate. In the final analysis the view taken by these researchers was that valid arguments could be made to support Classic and Constructive GT approaches. The rationale for choosing a Classic GT is outlined with guidelines for others when faced with this choice.

Comparing Constructivist and Classic GT

Constructivist GT and Classic GT are underpinned by two distinct paradigms. While they share many similarities, there are some notable differences which are reflected in their epistemological stance with related divergence on their research process and product. In the following section, the authors delineate these differences and similarities and outlines critical issues.

Epistemology. Epistemology is the branch of philosophy that explores the origin, nature, and methods of knowing and the limits of human knowledge. It therefore follows that a researcher's epistemological stance has a significant influence on his or her choice and use of research methodology.

In a conversation with other gounded theorists, Fernandez (2015), as cited in Walsh et al. (2015), emphasized the importance of clarity and sound understanding of epistemological issues as they pertain to each research project as confusion in this area can lead to a poor research design and subsequent problems. As a researcher's epistemological stance can inform numerous aspects of a project including the role of the researcher in the study, data collection methods, and analytic techniques, he argued that achieving epistemological clarity will lead to "well-defined and epistemologically congruent research outcomes" (Walsh et al., 2015, p. 587).

Constructivist GT and Classic GT hold divergent views on the epistemological underpinnings of their approaches. Carter and Little (2007) explained that while these different epistemologies "represent internally coherent and workable approaches to research practice" they are mutually incompatible (p. 1320). O'Connor, Netting, and Thomas (2008) contended that the Classic GT approach is based on positivist, objectivist assumptions while the constructivist approach "is based on interpretivist, subjectivist assumptions" (p.42).

Classic GT epistemology. Classic GT theorists argue that Classic GT is flexible in its epistemological assumptions and therefore suitable for researchers from a wide variety of epistemological approaches (Holton & Walsh, 2016). Glaser (1992) argued that the epistemological basis of Classic GT is neutral as its "methods work quite well for analysing data within the perspective of any discipline" (p. 18). In an article describing conversations between Classic GT experts, Holton described Classic GT as "epistemologically flexible" (Walsh et al., 2015, p. 586). She posited that by utilizing the full analytic process of Classic GT, a researcher can use all types of data and a variety of epistemological approaches. Urquhart (2013) further outlined how Classic GT can be used successfully by interpretive, positivist, and critical realist researchers.

However, many authors described Classic GT as having an objectivist stance which adheres to the existence of an objective reality that can be studied and understood, although imperfectly (Charmaz, 2014). Glaser (1992, 2012) tended to avoid the dialogue on epistemologies resisting the pressure to delimit Classic GT's epistemological assumptions. In conversation with others, he suggested that "for all the lofty academic talk, you can take GT whichever way you choose [explaining that] GT is just a set of steps that take you from walking in the data knowing nothing to emerging with a conceptual theory of knowing how the core variable is constantly resolved" (Walsh et al., 2015, p. 594)

Constructive Grounded Theory epistemology. In describing the epistemological assumptions of Constructivist GT, Charmaz (2014) argued that all knowledge is constructed and that reality is fluid and subject to changes based on a participant's construction of it. She argued that Classic GT is based on an "outdated assumptions of an objective external reality, a passive, neutral observer, or a detached narrow empiricism" (Charmaz, 2014, p. 13). She described the constructivist perspective on research findings as constructed rather than discovered. Constructivist GT is predicated on the assumption that the researcher is an active agent in that construction and, as such, his or her position, privileges and perspectives are acknowledged as impacting the construction of knowledge in the research process. Thus, Charmaz (2014) claimed that "relativism characterises the research endeavour rather than objective, unproblematic prescriptions and procedures. Viewing the research as constructed rather than discovered fosters researcher's reflexivity about their actions and decisions" (p.

13). Birks and Mills (2015) suggested that constructivist grounded theorists adopt a relativist position "where reality is relative to a conceptual framework, paradigm, form of life and is so constantly reformulated as a fluid construction" (p. 51).

Comparing epistemologies. Walsh et al. (2015) suggested that in its first iteration, Classic GT provided the researcher with an approach that could be used with any data and by researchers holding different philosophical assumptions. The authors argued that, for this reason, GT has been viewed and described from a variety of perspectives which has led to a variety of theoretical products including analytic, explanatory, and predictive theories, and concluded that the tendency to emphasise just one application of GT in the form of one approach has diminished an overall appreciation of the scope and reach of Classic GT. Holton and Walsh (2016) suggested that recognizing the various "researcher backgrounds, trainings and philosophical assumptions" (p. 16) enables one to understand the way in which GT has been used by many different researchers around the world.

Glaser's views on the debate on epistemology can be summarized in the following quote:

> GT is just a stupid little method. That's all it is. The epistemology is irrelevant. It's how you use it. GT is based on a concept indicating method which has been used for years in psychology. You get concepts out of indicators and the interchangeability of indicators and you get a theory. That's it. (Glaser & Tarozzi, 2007, p. 27)

Research Process. Whichever approach is used, there is broad agreement within GT researchers on the essential characteristics of a GT study. These agreed procedures include simultaneous data collection, coding and memo writing, the use of the constant comparative method, theoretical coding, theoretical sampling, theoretical saturation and the importance of theoretical sensitivity (Hood, 2007; O'Reilly, Paper, & Marx, 2012; Urquhart, 2013; Wiener, 2007).

However, several distinct differences between Classic GT and Constructivist GT exist on a range of other processes within extant literature including the role of the researcher, procedures for use of literature, research questions, interview techniques and coding procedures.

Role of researcher. Both approaches emphasize the importance of the researcher remaining open to patterns identified in the data and being mindful of the potential impact of their own preconceptions on the research product. However, these preconceptions are managed differently within Constructivist and Classic GT approaches.

Charmaz (2014) suggested that researchers should actively engage in strategies that reveal preconceptions by taking a reflexive stance. She argued that while a researcher may come to the initial coding with certain preconceptions that act as starting points for looking at the data, they can only be adopted as codes when the data supports the codes. In this way, the preconceptions or professional concerns of the researcher only become part of the analysis if they are also reflected in the data.

In various writings, Glaser (1978, 1998) argued that a researcher's preconceptions are like any other variable in the research and are subjected to the same analytical process so that their impact is managed through this process (Glaser &

Strauss, 1967). Therefore, the researcher does not need to engage in identifying his or her preconceptions to avoid influencing the data analysis since the argument is that if these preconceptions are not reflected in the data, they do not become part of the final theoretical product. In this way, he argued the research product or GT is based on the patterns discovered in the data.

Within both approaches, the preconceptions or professional interests of the researcher only emerge in the theory when they are reflected in the data. However, constructivist grounded theorists engage in a process to identify their preconceptions whereas classic grounded theorists do not.

Within Constructivist GT, the role of the researcher is formulated as an active one in a process of co-constructing the final research product with participants. Charmaz (2014) argued that researchers are part of the world they study and thus construct their theories through their "past and present involvements and interactions with people, perspectives, and research practices" (p. 17).

On the other hand, Glaser (2012) argued that the elevation of the researcher's role to that of co-constructer of the data has the potential of placing more value on the researcher's interpretation than the participants, thereby creating a situation in which the data is forced.

In response to the criticism levelled by Charmaz that classic grounded theorists are distant and objective, Glaser (2012) argued that the aim of applying GT procedures is to be as objective as possible. Glaser presented an alternative perspective of objectivity which ensures that the final conceptualization or theory is objective. Rather than conceptualizing distance as the space between the researcher and participant, he spoke about distance in terms of the final conceptualization or abstraction moving away from the raw data to achieve a broad theoretical explanation. He explained that that the more distance one achieves between data and abstraction the more explanatory power the theory will have (Glaser, 2012).

In reflecting on the debate in this area, there are clear distinctions between both approaches on the role of the researcher during the research process; within the Constructivist GT approach, the researcher is viewed as an active co-constructor of the final theory; within the Classic GT approach, the aim is to minimize the impact of the researcher's preconceptions on the final theory through the application of essential GT analytic processes.

While both approaches agree on the centrality of properly representing the participant's voice, both claim that the other does not adequately ensure the participant's voice is reflected in the research product. Glaser (2012) asserted that by elevating the researcher's role in the construction of the theory, there is a danger of placing as much or more value on his or her interpretation than that of the participants. He argued that the focus on mutual understanding and joint interpretations in the constructivist approach leads to a need to create agreement between the participant and researcher on the emergent knowledge; in other words, a drive towards accuracy and description. He argued that in this quest for accuracy, the latent patterns underlying multiple, often seemingly disparate participant perspectives may be lost (Glaser, 2012).

Charmaz (2014) argued that by not identifying and reflecting on the researcher's preconceptions, there is a danger that these preconceptions will have unaccounted

influences on the analysis. For this reason, she argued that researchers need to reflect and identify their preconceptions as part of this process. However, both agreed that the application of the essential procedures of Classic GT ensures that any preconceptions of the researcher will only appear in the theory if they are grounded in the data collected from participants.

***Role of Literature*.** Evans (2013) summarized the differences between Classic GT and Constructivist GT on the role of literature as follows: as the starting point for a Classic GT is a desire to explore a substantive area with no predetermined research questions prior to the study; it does not begin with a literature review. In contrast, a Constructivist GT begins with a literature review as a means to establish what is known and has been studied in the substantive area.

One of the key concepts relevant to the debate on the timing of the literature review is the basic GT tenet of theoretical sensitivity. Theoretical sensitivity describes the researcher's ability to recognize and extract the essential elements relevant to the emerging concepts, categories, and theory from the data.

Classic Grounded theorists argue that one of the key first steps in gaining theoretical sensitivity is embarking on the research with as few preconceptions or predetermined ideas as possible. In particular, Glaser and Strauss (1967) argued against the use of logically deduced *a priori* hypothesis. The rationale is that if a researcher has already read and reflected on the literature in the area, which includes existing theories, it will negatively affect his or her ability to maintain theoretical sensitivity since he or she will not be able to "record events and detect happenings without first having them filtered through and squared with pre-existing hypotheses and biases" (Glaser, 1978, p. 3).

Glaser (1978) suggested that while initially avoiding the literature on specific theories related to the areas of enquiry, researchers should explore the wider literature to become familiar with a variety of theoretical codes to support their developing knowledge on theory building. Theoretical sensitivity can be increased by the researcher familiarizing themselves with a wide range of theoretical perspectives and the construction of theories in general. As the analytic phase of theoretical coding reaches completion, a literature review can then be undertaken. In this way, the emerging theory is integrated into the existing literature and its generation has not been unduly influenced by existing theory and literature.

It is thus argued that delaying the literature review in this way reduces the possibility that the data will be forced to align with preconceived concepts and allows time for the core category to emerge which will ultimately generate a more focused and effective literature review.

Within Constructivist GT, the researcher is encouraged to become familiar with the literature prior to data collection. Charmaz (2014) made the point that it is unrealistic to expect that researchers will start their research without holding particular perspectives and knowledge about its focus. She argued that the stricture to delay the literature review implies that researchers are uncritical in their reading and are easily persuaded by it. Rather she argued that researcher's ability to develop theoretical sensitivity is predicated on his or her familiarity with relevant literature.

She suggested that the argument of when to conduct a literature review tends to miss the crucial and most important point that the researcher should tailor the final version of their literature review to fit their particular project and its findings. This perspective is shared by Glaser (1978, 1998) and both scholars emphasized the importance of properly integrated the emergent theory within the existing literature (Charmaz, 2014; Glaser, 1978, 1998).

While it is recommended that the timing of the literature review is delayed until the theory has been generated, there is an acknowledgment by Classic grounded theorists that there are practical reasons why a researcher must demonstrate some familiarity with the literature in the initial stages of their research, such as in supporting their research proposal (Glaser, 1998, Holton and Walsh, 2016). Nonetheless, they stressed that a literature review conducted after the identification of the core category is more efficient and relevant.

In conversation Fernandez (2015) also argued that the work of the researcher is to integrate the emergent substantive theory into the existing formal theory thus embedding the research findings in the existing literature. He asserted that many researchers do not adequately address this step in the research process (Walsh et al, 2015). Glaser (1998) argued that the debate and focus on the timing of the literature review reflects a basic misunderstanding of the inductive process. Within this approach, the role of literature and existing formal theory are supported but not until the data has been allowed to direct the research focus (Glaser,1998).

Research questions. Within a Constructivist GT, the researcher develops a set of research questions prior to data collection. These questions are based on the literature review and direct the choice of data collection methods and development of interview guides. These questions may change during the research as the researcher discovers more significant or relevant questions.

Within a Classic GT approach, the researcher does not develop a prior set of research questions; rather the researcher seeks to approach the substantive area with a broader question that facilitates the participants to speak about their experiences (Glaser, 1998). As the research progresses through the stages of coding, the researcher may ask more direct questions relating to the already-generated categories. It is argued that by approaching the substantive area in this manner, the researcher remains more open to the emerging patterns from that data and avoids the risk of steering participants down certain routes too early in the research process, thereby forcing the data.

Interview Techniques. While both approaches adopt similar guidelines on qualitative data collection methods, they adhere to two distinct strategies in preparing for interviews and in their stance on the question of devising an interview guide. Charmaz (2014) recommended that new researchers develop a detailed interview guide to enable them to gain clarity on the type of information they seek to address their research questions. The purpose of the guide is also to avoid the use of "awkward, poorly judged questions potentially based on unexamined preconceptions" (Charmaz, 2014, p. 63).

Glaser (2012) argued that the type of interview described by Charmaz is problematic: long guided interviews can force or lead the interviewee in certain directions and impose interview bias on data. Rather, he favours a passive, non-

structured interviewing style in which constructivism is kept to a minimum. Initially, the interviewer is merely receptive; it is only later in the process, when theoretical sampling dictates more focused interview questions, that the researcher's input becomes more targeted. This more active interviewing is guided by analysis of data as opposed to the biases or experiences of the researcher.

As an illustration of the above point, one Constructivist GT study's approach to the process of co-construction in data collection is presented; the authors described their interview process as follows:

> Initial questions were broad and open-ended; as we interacted with the data and as categories were co-constructed, we adjusted the range of topics to gather more specific data to develop our theoretical framework. For example, each time a mother introduced a new topic or idea such as money, time, interpersonal conflict, or unique strategies, we added this insight to future interviews to see if it was common for other mothers. (Walsh, Meagher-Stewart, & Macdonald, 2015, p. 529)

This example, which the authors purported follows a Constructivist GT methodology, shows how subsequent interview guides are shaped based on earlier interviews. While this process may be presented as an example of theoretical sampling, it could equally be viewed an example of forcing the data. As each participant introduces new concepts, they are then repeated in the data by the researcher thereby introducing them in subsequent interviews.

These additions to the interview protocol are arguably not based on the analytic process of identifying gaps in the data (theoretical sampling) as much as the decision to introduce them based on their novelty. If these concepts subsequently assume analytic relevance, it is difficult to determine whether their repetition in the data was due to the intervention of the researcher or whether the concepts would have emerged without the researcher's influence. Thus, an inherent issue with co-construction during the data collection process would appear to be distinguishing between the voices of the participant and the researcher. However, it should also be noted that Charmaz continually emphasizes the importance of researcher's awareness of forcing data and of deploying techniques which minimize this risk.

Glaser (2012) also cautioned that Charmaz's description of the data collection phase as a potential therapeutic encounter between the interviewer and interviewee is confusing therapy with research.

On the other hand, Charmaz (2014) characterised the Classic GT approach to their participants as cold and distant. Glaser and Strauss (1967) earlier writings describing GT methods reflected the widely-held view, at the time, of the participant as solely a source of data. The language used to describe participants was typical of an era which had not developed our contemporary awareness and sensitivity to ethical considerations or, the rights of participants and responsibilities of researchers within the researcher participant relationship.

***Coding*.** Both approaches subscribe to a cycle of coding that moves from line by line analysis of raw data to theoretical coding and sorting of categories using analytic memos in support the development of theory. Within Constructivist GT, three distinct phases of coding are described: initial coding, focused coding, and theoretical coding

(Charmaz, 2014). Classic GT has two main coding phases: substantive (including open and selective) and theoretical (Glaser, 1978, 1998; Glaser & Strauss, 1967).

Both authors (Charmaz and Glaser) described open and initial coding in similar terms: the focus is on breaking down or fragmenting the data to identify patterns and recurring concepts or categories. Selective and focused coding are also similar but within Classic GT, the researcher only moves to selective coding following the identification of a core category. Also, unlike Classic GT in which just one core category is developed, within Constructivist GT, several core categories can be developed and described in the final document.

When describing theoretical coding, Charmaz (2014) often referred to and supported Glaser's descriptions of this process and seemed to describe a similar process. However, the emphasis in Constructivist GT is in merging and grouping concepts whereas in Classic GT it is on first identifying the relationship between the categories and the core category and then identifying the relationships between categories. Within Constructivist GT, the process of theoretical coding would seem to be optional and perhaps at the researcher's discretion while theoretical coding is an essential element of the Classic GT research process.

Research product. Charmaz (2014) pointed out that it can be difficult for those new to GT to clarify what "stands as grounded theory in any version" (p. 15). Within the Classic GT tradition, the GT is defined as "the systematic generating of theory from data, that itself is systematically obtained from social research" (Glaser, 1978, p. 2). The aim of Classic GT is to develop a multivariate comprehensive theoretical explanation, as Glaser put it. GT simply involves "the generation of theories from data" (Walsh et al., 2015, p.593).

Within the constructivist tradition, the grounded theory is the result of a process of data collection and analysis as created by shared experiences and relationships between the participants and the researcher, and is a conceptual description of this process. Along with theorizing the interpretive work undertaken by participants, within this tradition, the final theory is the result of a co-construction of knowledge and is not separate from the researcher's view and cannot exist outside of this view (Charmaz, 2014).

Rationale for Choice of Classic GT

In a contribution to a conversation on GT Fernandez (2015) cautioned that researcher must take responsibility for gaining a clear understanding of the epistemological assumptions underlying their chosen methodology (Walsh et al., 2015). The process of choosing the GT approach is a complex exercise which required extensive reading and reflection.

When faced with the choice of Classic or Constructive GT, given that arguments could be credibly made for both approaches, the choice is not based on a determination of which was the best approach but rather on which approach best suits both the researcher and his or her study. The individual researcher's perspective's influence is acknowledged by Heath and Cowley (2004) who contended that qualitative research using grounded theory is a

> cognitive process and that each individual has a different cognitive style. A person's way of thinking, and explanation of analysis, may seem crystal clear to someone with a similar cognitive style and very confusing to another person whose approach is different. (p. 149)

For these researchers, in considering the similarities and differences between the two approaches, the Classic GT approach was ultimately chosen based on the following rationale:

Epistemological flexibility. While some authors suggested that Classic GT is restricted to one epistemological stance, others contended that it is an approach which may be used by researchers from diverse epistemological perspectives. Fernandez (2012) emphasized it is more important that the researcher understands which perspective he or she is adopting and ensures that all research decisions are consistent with this perspective. In reviewing and reflecting on the epistemological assumptions, the authors have determined that the closest to their stance is that of critical realism as described by Oliver (2012) as an alternative to the objectivist or constructivist view in GT. Within critical realism, the existence of an objective reality exists independently of our thoughts and perceptions. It is further argued that the description of this reality is mediated and filtered through our use of language: our meaning-making and our social context. The use of a Classic GT methodology is consistent with this epistemological stance.

Participants' voices. The second argument which supported the choice of a Classic GT concerned the participants' perspectives and experiences that would be reflected adequately in the analysis and final product. Two issues were considered relevant to this concern:

Avoiding preconceptions. The potential influence of an early comprehensive literature review on the researcher's preconceptions was of some concern. The dangers of this process unduly influenced the choice of research questions; its effect on the analysis were considered. While acknowledging the constructivist position that researchers should not be depicted as uncritically accepting their readings and being unaware of their potential effect in the research process, nonetheless the unconscious bias that existing theory could exert on their work is not, in the authors' opinions, adequately addressed within the constructivist approach. While there are suggested strategies to counteract researchers' bias, it was the view of the authors that the arguments in favour of a delayed literature review were better supported; we acknowledged that Charmaz and Glaser emphasized that from their perspective, the most important point is that the final theory is well integrated within existing literature.

Role of researcher. The second issue was the role of the researcher in the research process. Given that the role of the researcher within Constructivist GT is co-constructor of the final research product, the authors considered the danger of undue influence on the analysis. The argument is that the researcher's perspectives will only find their way into the final theory if they emerge during the analysis. However, in the authors' opinions, these arguments do not fully address the possibility of the data being unduly influenced prior to analysis in the collection phase. Due to these misgivings, the authors accepted the argument that the role of the researcher within a Constructivist GT process could lead to undue influence on the data or forcing the data.

Analytic guidelines. When considering both approaches, the comprehensive, clear, and flexible guidelines offered by experts in Classic GT were an additional incentive to select this approach. In comparing the guidelines for both approaches, the authors concluded that the procedures and guidelines available in a variety of writings that outline the Classic GT approach would better support a researcher through all the stages of the research process from data collection through to the discovery of a multivariant integrated theory (Glaser, 1978, 1998; Glaser & Strauss, 1967)

Potential Framework for Choosing GT approach

In their process of choosing a GT approach, the authors accepted the caution expressed by Jacoby, Jaccard, and Acock (2011) that rather than seeking to divide and polarize we should strive to develop a diverse set of research tools to complete the research project. They pointed out that positivist and constructivist perspectives are not necessarily conflicting; the reality is that things rarely fit into simple categories. Fernandez (2012) also called for researchers to concentrate on understanding the differences between GT approaches and "quit the private and public bickering – bury the territorial hatchet" (p. 27).

Based on the experience of the authors, scholars struggling to select a GT approach for their research would be best advised as follows:

- Read the original descriptions of the approaches under consideration as this literature will facilitate a critical appraisal of the arguments for and against each approach.
- Despite the pressure to do otherwise, try to retain a neutral stance while reflecting on the decision. Since all these approaches have merits, it is not merely a matter of which is better, but rather a decision based on individual philosophy of science and research interest.
- When considering the choices, adopt a logical approach to decision making, and compare each approach on the dimensions most relevant to you and your project
- When reading this literature first, expect to be confused and frustrated, as the tenor of the debate can at times seem very personal and the similarity of terminology between the approaches confusing.
- Do not rush the process. Allow plenty of time to read and reflect. Time spent on this process will not be wasted as clarity around research design will lead to a clear plan and internal consistency between the elements of the research.

Researchers in this area are continually refining their approaches and recommendations on practice. Therefore, a novice will not find easy answers in developing a research design and process. Rather, it is important to approach this method with a willingness to engage in a high degree of reflective practice prior to and throughout the overall research process.

Summary of Rationale for Choosing a Classic GT Methodology

The main areas of debate between approaches centre around the purpose of GT, the underlying assumptions of the researcher on the nature of the world and science, the position of the researcher in the study, the timing and role of the literature review, the development of research questions and interview techniques, and the coding and description of the research product.

Grounded theorists would argue that a researcher's final decision should be based on his or her own epistemological stance and the needs of the specific research project. Based on an exploration and reflection on the Classic GT and Constructivist GT methodologies in terms of their fit for the authors' epistemological perspectives and research project the Classic GT research design was chosen. The choice was based on epistemological stance, concern that participant's voice would be adequately reflected in the theory and pragmatic considerations concerning the quality of the directions available regarding the practical application of the research design.

In reflecting on epistemological perspectives, the authors concluded that as a critical realism stance most closely matched their perspectives the flexible approach of Classic GT would work best. The contention that the application of a Constructive GT may result in forcing the data by introducing researcher bias was explored and accepted. Finally, in a review of the "manuals" available to GT researchers, the authors concluded that those works pertaining to Classic GT were clearer and supported the authors through all the phases of the research. Of particular support were two primers developed by Glaser (1978, 1998), *Theoretical Sensitivity* and *Doing Grounded Theory: Issues and Discussions*, which provide clear guidelines for future Classic GT researchers.

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Anne O' Connor works as a clinical psychologist in Early Intervention Services and is currently pursuing a PhD. Anne has practiced in the general area of childhood disability and is particularly interested in the family perspective and experience. She also works as a clinical coordinator on the Doctorate Programme for Clinical Psychologists which affords her the opportunity to visit services throughout Ireland. After many years of clinical practice Anne is now also working as an academic and researcher. She has been focusing on developing opportunities for local clinicians and researchers to collaborate to increase research input to disability studies. She is a member of the International Society of Early Intervention. Through her work on her PhD she has developed an interest in Classic Grounded Theory. Email: aoconnor@nuigalway.ie

Dr. Barry Coughlan, Acting Director on the Doctoral programme in Clinical Psychology at the University of Limerick and also maintains a clinical practice and professional consultancy portfolio. Dr Coughlan has a special interest in the emotional wellbeing & mental health of young people and adults with intellectual disability and complex need. His clinical and associated research focus includes mental health & emotional wellbeing in intellectual disability, Complex Learning Difficulties & Disabilities, Special Educational Needs, Autism Spectrum Disorder, Foetal Alcohol Spectrum Disorder, Ageing and Disability, Deinstitutionalisation & Community integration. In 2015, Dr. Coughlan was commissioned by the Australian Ministry of Education (Melbourne Office) to undertake a review of Western Autistic Schools' special provision for young adolescents presenting with high functioning Autism Spectrum Disorder and mental health difficulties.

Debbie Garratt, PhD Candidate at Notre Dame University, Sydney, is a clinical nurse consultant, qualified counsellor and adult educator, and founder and Executive Director of Real Choices Australia, an organisation established to provide quality research and education on reproductive health issues. As part of this work, Debbie also consults to community groups and the health sector on professional standards and organisational development for services for women experiencing challenges during the perinatal period. For 20 years she has divided her time between the provision of education and clinical supervision to practitioners and clients locally through her private practice, and research, education and speaking engagements both nationally and internationally. Debbie's current doctoral research is a grounded theory study of dominant discourses. Email: dgarratt@realchoices.org.au

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